



Reference Manual
for
FEMALE
STERILIZATION

November 2014



Family Planning Division
Ministry of Health and Family Welfare
Government of India

2014

Ministry of Health & Family Welfare

Government of India, Nirman Bhawan, New Delhi-110101

Any part of this document may be reproduced and excerpts from it may be quoted without permission provided the material is distributed free of cost and the source is acknowledged.



Reference Manual
for
FEMALE
STERILIZATION

November 2014



Family Planning Division
Ministry of Health and Family Welfare
Government of India

लव वर्मा
सचिव

LOV VERMA
Secretary



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
Government of India
Department of Health and Family Welfare
Ministry of Health and Family Welfare

MESSAGE

Family Planning services offered at the right time ensure good health for both the mother and baby. Female sterilization is the preferred choice for Family Planning in India. These services are being provided at all levels of the public health care delivery system ranging from Medical College hospitals/District hospitals to the Primary Health care facilities having functional operation theatres. Still there is a persistent high unmet need for limiting methods of contraception in the country which is mainly due to the lack of trained medical officers at the peripheral health facilities.

This issue could be addressed by increasing the provider base at these facilities by training Medical officers to perform minilap tubectomy and laparoscopic tubal occlusion on regular basis throughout the year.

With a view to increasing the provider base as well as maintaining uniform standards for female sterilization in the country, the 'Reference Manual on Female Sterilisation' has been developed.

It would serve as a quick-reference resource for all levels of health care providers as well as trainers at District Hospitals, Sub District Hospitals, Community Health Centres, Primary Health Centres and faculty of Medical Colleges.

I congratulate the Family Planning Division for developing this comprehensive reference manual on female sterilization.

(Lov Verma)



C.K. Mishra, IAS

Additional Secretary &
Mission Director, NHM
Telefax : 23061066, 23063809
E-mail : asmd-mohfw@nic.in



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली – 110011

GOVERNMENT OF INDIA
MINISTRY OF HEALTH & FAMILY WELFARE
NIRMAN BHAVAN, NEW DELHI - 110011



Dated: 7th November, 2014

FOREWORD

Female sterilization is one of the most accepted methods of contraception in India and is conducted by the minilap or laparoscopic mode. There is persistent high unmet need for limiting methods of contraception which is mainly due to the lack of trained providers at the peripheral health facilities. This issue could be addressed by increasing the provider base by training medical officers based at these facilities to perform minilap tubectomy or laparoscopic tubal occlusion on a regular basis throughout the year.

This manual is the culmination of efforts to develop a uniform reference manual on female sterilization services in the country which will not only dwell on the technical aspects of the methods, the surgical approaches, the types of anesthesia, but also the training methodology curricula, guidelines as also the management aspect of conducting large scale camps.

I congratulate the Family Planning division, for their efforts in developing this comprehensive reference manual on female sterilization in a very short time.


(C. K. Mishra)



Dr. RAKESH KUMAR, I.A.S
JOINT SECRETARY
Telefax : 23061723
E-mail : rk1992uk@gmail.com
E-mail : rkumar92@hotmail.com



भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली – 110011
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110011



PREFACE

Reproductive Health is one of the main pillars of the RMNCH+A strategy launched by the Government of India. Providing informed choice and family planning services to all the eligible couples is one of the keys to success of RMNCH+A outcomes. Ensuring family planning services is one of the most cost effective methods for improving the overall health outcome especially the health of the mother and child.

One preferred way for delivering family planning services is through Female sterilization method which also happens to be the most popular in India.

To expand the female sterilization services more facilities should be operational at sub district level. This will help in bringing the services as close to the community as possible and thereby increase its uptake. With a view to have enough number of trained providers in place to deliver the services the 'Reference Manual on Female Sterilization' has been developed which would act as a ready reckoner for services providers and trainers at all level for nor only undertaking trainings but also organising services at different levels of the health system.

I hope the standards for female sterilization and post-operative care mentioned in this manual will be followed by all the providers and trainers at all the levels in the public and private accredited facilities.

The efforts of the Family Planning Division in developing this manual are highly appreciated.


(Dr. Rakesh Kumar)



Dr. S.K. Sikdar

MBBS, MD(CHA)

Deputy Commissioner

Incharge : Family Planning Division

Telefax : 23062427

E-mail : sikdarsk@gmail.com



भारत सरकार

स्वास्थ्य एवं परिवार कल्याण मंत्रालय

निर्माण भवन, नई दिल्ली - 110011

Government of India

Ministry of Health & Family Welfare

Nirman Bhavan, New Delhi - 110011

ACKNOWLEDGEMENT

The manual on female sterilization has been developed with the objective to standardize the skills of Medical Officers and Gynaecologists/Surgeons for performing Minilap Tubectomy and Laparoscopic Tubal Occlusion which are the two most common techniques of female sterilization performed in the country. Adhering to these standards at all the levels of health facilities from client selection to performing surgery and post-operative care will not only improve the quality of care but reduce the number of complications, failures and deaths following female sterilization.

This book has been developed with the guidance from Shri. Lov Verma, Secretary (H&FW) and encouragement received from Shri. C. K. Mishra, Additional Secretary and Mission Director (NHM), Ministry of Health and Family welfare. A special expression of appreciation is for Dr. Rakesh Kumar, Joint Secretary, for his constant endeavor to catapult the family planning program to the forefront for attaining the RMNCH+A goals.

I am thankful to all the experts of the 'National Technical Resource Group on Family Planning' who have contributed enormously in developing this manual after extensive discussions and experience sharing. I am also thankful to all the invited state and district programme officials whose experience from the field helped shape this manual.

A special expression of appreciation is reserved for Dr. Alok Banerjee for his extensive review of the manuscript, Dr. Sunita Singhal and Dr. B. P. Singh for providing support.

Appreciation is also extended to members of the Family Planning Division namely Dr. Teja Ram, DC; Dr. Pragati Singh, Ms. Renuka Patnaik. I am also thankful to all the members of the National TSU team especially Dr. Vani Srinivas for coordinating and Dr. Nidhi Bhatt for helping in giving it its final shape.

I hope this manual empowers the programme managers and service providers at all levels of health care system as well as trainers at District Hospitals, Sub District Hospitals, Community Health Centres, Primary Health Centres and faculty of Medical Colleges for provision of quality female sterilization services.

(Dr. S. K. Sikdar)

Healthy Village, Healthy Nation



एड्स - जानकारी ही बचाव है
Talking about AIDS is taking care of each other

Contents

MESSAGE

FOREWORD

PREFACE

ACKNOWLEDGEMENT

SECTION -I- STANDARDS AND TECHNIQUES IN FEMALE STERILIZATION

Chapter 1: Background	15
Chapter 2: Overview of Minilap Tubectomy and Laparoscopic Tubal Occlusion	17
Chapter 3: Counselling and Informed Consent	21
Chapter 4: Eligibility Criteria for Female Sterilization	23
Chapter 5: Clinical Assessment of Clients and Steps prior to Sterilization Procedures	26
Chapter 6: Analgesia and Anaesthesia	29
Chapter 7: Prevention of Infection	34
Chapter 8: Surgical Procedure - Minilap Tubectomy	42
Chapter 9: Surgical Procedure - Laparoscopic Tubal Occlusion	57
Chapter 10: Post-Operative Recovery, Discharge and Follow-up	64
Chapter 11: Complications & Management	68
Chapter 12: Failure of Female Sterilization	71
Chapter 13: Reversal of Female Sterilization	73

SECTION-II- TRAININGS IN FEMALE STERILIZATION

Chapter 14: Training for Female Sterilization	77
14.1 Training Needs Assessment	77
14.2 General Aspects of Training	77
14.3 Important Tips for the Trainers	80
14.4 Skill Practice on Anatomical Pelvic Simulation Model	80
14.5 Supervised Clinical and Surgical Practice	82
14.6 Evaluation of Clinical and Surgical Skills	83
14.7 Curriculum and Schedule of Training	84

SECTION- III- ANNEXURES

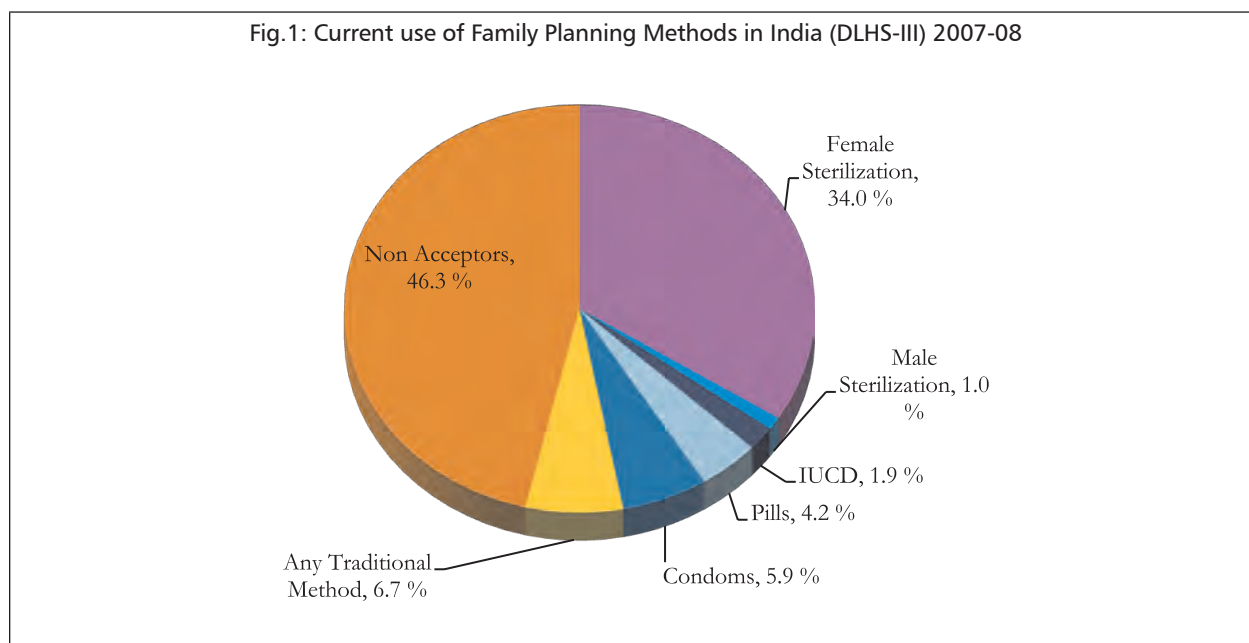
Annexure 1: Application cum Consent Form for Sterilization Operation	91
Annexure 2: Medical Record & Check List for Sterilization	94
Annexure 3: Post Operative Instruction Card	100
Annexure 4: Sterilization Certificate	102
Annexure 5: Physical Requirements for Sterilization	103
Annexure 6: Minilaparotomy Kit	106
Annexure 7: Laparoscopic Tubal Occlusion Kit	107
Annexure 8: Management of Emergencies in Female Sterilization	108
Annexure 9: Frequently Asked Questions about Female Sterilization	111
Annexure 10: Questionnaire for Assessment of Trainees' Knowledge on Minilap Tubectomy Skill Training	113
Annexure 11: Questionnaire for Assessment of Trainees Knowledge on Laparoscopic Tubal Occlusion Skill Training	116
Annexure 12: Individual and Group Assessment Matrix	121
Annexure 13: Checklist for Clinical Skills in Post Partum Minilap Tubectomy Procedure	122
Annexure 14: Checklist for Clinical Skills in Interval Minilap Tubectomy Procedure	126
Annexure 15: Checklist for Clinical Skills in Laparoscopic Tubal Occlusion Procedure	130
Annexure 16: Checklist for Counselling Skills in Female Sterilization Procedure	135
Annexure 17: Laparoscopic System	137
Annexure 18: Family Planning Indemnity Scheme	143



SECTION - I
STANDARDS AND TECHNIQUES
IN FEMALE STERILIZATION

Background

Female Sterilization is one of the most popular and effective methods of contraception. In addition to being permanent, it is highly effective, safe and relatively free from side effects. In India female sterilization by tubectomy or tubal occlusion is the most commonly accepted methods among eligible couples. District Level House-hold Survey (DLHS III) shows that 34% of the ever married women accepted female sterilization as a contraceptive choice (Fig: 1).



In India over 4.1 million female sterilization procedures are done annually (HMIS 2013-14). As per DLHS III the total unmet need in contraception for the country remains high at 21.3%, out of which 13.4% is for limiting methods. This unmet need is mainly due to the lack of skilled service providers at the peripheral health facilities.

The architectural changes under National Health Mission (NHM) of Government of India have strengthened the health facilities for providing assured, fixed day family planning services at DHs, SDHs, FRUs, CHCs and PHCs. In addition the increase in the number of institutional deliveries on account of JSY, JSSK and other initiatives increases the scope for post partum sterilization.

Therefore, to increase the access to female sterilization, it is imperative to have trained service providers for both minilap and laparoscopic sterilization at the facilities so as to provide regular and fixed day services throughout the year. This manual has been developed to ensure uniform standards for training and performing minilap and laparoscopic sterilization.

Female sterilization is a relatively simple procedure that involves permanently blocking the fallopian tubes to prevent fertilization. There are two common surgical techniques for female sterilization: Minilaparotomy which involves making a small incision in the abdomen. In this, a portion of the fallopian tube is ligated and incised. The other technique is laparoscopic, which involves inserting a long thin tube with a lens (laparoscope) in it, into the abdomen through a small incision. The laparoscope enables the doctor to view and occlude the fallopian tubes with Falope rings. Both methods are equally safe and effective.

1.1 Scope of the Manual

This manual attempts to lay down uniform standards in the surgical technique to be adopted by all training centers and service delivery facilities. It will equip the service providers to screen clients, counsel them on different methods of contraception, perform minilap tubectomy and laparoscopic tubal occlusion safely. The manual will also enable providers to recognize and manage potential problems as well as provide appropriate follow-up.

It also lays down uniform standards for training across the country incorporating management aspects of conducting training in female sterilization, laying down curricula and setting up of training centers.

1.2 Target Audience

This manual is meant to be used universally all over the country by all stake holders comprising of programme managers at the national, state, district and block levels, faculty of medical colleges, trainers at the national and state level, service providers at all levels as well as by the clients too who want to get acquainted with the nuances of the programme and be aware of their rights and responsibilities.

It can also be used for monitoring and ensuring quality in provision of sterilization services by outlining the steps and mechanisms for measuring the quality of services provided at both static facilities and camps.

This document supersedes the existing manuals as below:

1. Reference Manual for Minilap Tubectomy, November 2009.
2. Guidelines for Training in Female Sterilization for Program Officers, Training Coordinators and Trainers, March 2010.

Overview of Minilap Tubectomy and Laparoscopic Tubal Occlusion

2.1 Introduction

Minilap Tubectomy and Laparoscopic Tubal occlusion, under local anaesthesia are safe and simple procedures and should be guided by the following principles:

- Clients must be provided informed choice.
- Written consent should be taken prior to surgery.
- Doctors and staff should be trained and skilled in the female sterilization techniques, use of appropriate anaesthesia and managing emergencies.
- All instruments and equipment must be in optimum working condition (Annexures 5, 6 and 7).
- The facility must be equipped with drugs and equipment to handle emergencies as appropriate (Annexure 8).
- Standard infection prevention practices must be adhered to (Chapter 7).
- Clients must be screened for medical eligibility for female sterilization.

2.2 Eligibility of Providers to Perform Sterilization Procedure

Sterilization Service		Basic Qualification Requirement of Service Provider
Empanelled	Female	Minilap sterilization
		DGO, MD/MS in ObGyn Specialists in other surgical fields } Trained in Minilap MBBS sterilization
		Laparoscopic sterilization
		DGO, MD/MS in ObGyn Specialists in other surgical fields } Trained in laparoscopic MBBS performing Minilap sterilization
Male	Conventional vasectomy	MBBS and above (trained in Conventional vasectomy)
	No-scalpel vasectomy (NSV)	MBBS and above (trained in No Scalpel vasectomy)

- The state should maintain a district-wise list of doctors empanelled for performing sterilization operations in public and accredited private/NGO facilities based on the above criteria.
- State should maintain a separate list for Minilap, Laparoscopic tubectomy, Conventional and No Scalpel Vasectomy providers.
- Only those doctors whose names appear on the panel are entitled to carry out sterilization operations in public and accredited private/NGO facilities. The panel should preferably be updated every three months or sooner if warranted. A doctor empanelled with one state/ district of India is eligible to perform sterilization operation in other states/ districts of India).
- States can empanel doctors who are already performing sterilization operation in the public facilities for the last 3 years.

2.3 Comparison between Minilap and Laparoscopic Female Sterilization

To ensure broad access to female sterilization, the method offered at a service site should be safe, simple, highly effective and relatively pain-free, affect only fertility, inexpensive, suitable to be performed as an ambulatory procedure and cause minimal tubal damage in order to facilitate reversibility. Minilaparotomy and Laparoscopy both fit these criteria and are acceptable procedures for reaching the fallopian tubes (WHO, 1992).

In large-scale studies and service settings, both methods have proven to be equally safe and effective. The two techniques are compared in the following Table 2.1.

Table. 2.1: Comparison of Minilap Tubectomy and Laparoscopic Tubal Occlusion

Points	Minilap Tubectomy	Laparoscopic Tubal Occlusion
Instruments and equipment	Requires few inexpensive surgical instruments.	Requires delicate endoscopic equipment.
Timing	Can be performed postpartum, post abortion or at any time (interval procedure) after ruling out pregnancy	Can be performed only for interval and after first-trimester abortion procedures.
Postoperative pain	Mild postoperative abdominal pain.	Mild Postoperative abdominal pain. Chest and shoulder pain may also result due to abdominal insufflation.
Postoperative complications	Risk of minor complications such as wound infection.	Risk of major complications such as bowel or vascular injury that may require additional surgery
Recovery time	4-6 hours.	4-6 hours.

2.4 When to Perform Female Sterilization

Woman's situation	When to Perform
Having Menstrual Cycles	<ul style="list-style-type: none"> Any time within 7 days after the start of her menstrual bleeding. Any time of menstrual cycle, provided it is reasonably certain that she is not pregnant.
Switching from another method	<ul style="list-style-type: none"> OCP: To be done any time but she can continue the pill until the pack is finished to maintain her regular cycle. IUCD: To be done anytime, concurrently with removal of IUCD.
No monthly menstrual bleeding	<ul style="list-style-type: none"> Any time provided it is reasonably certain she is not pregnant.
After childbirth	<ul style="list-style-type: none"> Within 7 days after giving birth (only Post-Partum Minilap tubectomy can be performed). Any time 6 weeks or more after childbirth if it is reasonably certain she is not pregnant (Interval Sterilization).
After MTP	<ul style="list-style-type: none"> Concurrently with surgical MTP or within 7 days post MTP . In case of Medical Abortion the tubectomy should be done after next menstrual cycle. Laparoscopic tubal occlusion procedure can be performed only in MTPs up to 12 weeks of gestation.
After miscarriage or abortion	<ul style="list-style-type: none"> Within 7 days, if no complications.
After using Emergency Contraceptive Pills (ECPs)	<ul style="list-style-type: none"> Within 7 days after the start of her next monthly bleeding or any other time if it is reasonably certain she is not pregnant.

If there is no medical reason to delay, a woman can have the female sterilization procedure any time she wants if it is reasonably certain that she is not pregnant.

2.5 Overview of Minilap Tubectomy

Minilap Tubectomy is an abdominal surgical approach to reach the fallopian tubes by means of an incision 2-3 cm in length.

2.5.1 Types of Procedures

The procedure for accessing the fallopian tubes and the steps of the Minilap Tubectomy depend upon the size of the uterus; thus, the procedure is selected based on timing related to last delivery.

Sterilization by Minilap Tubectomy can be interval sterilization using supra-pubic approach or post-partum sterilization using sub-umbilical approach.

2.5.2 Timing of the Surgical Procedure

- **Interval sterilization:** should be performed within 7 days of the beginning of menstrual period (in the follicular phase of the menstrual cycle) or anytime during the cycle if the woman and the provider are reasonably sure that she is not pregnant.
- **Post-partum sterilization:** should be done within 7 days of delivery.
- **Sterilization following spontaneous abortion:** can be performed concurrently or within seven days of abortion, after excluding infection.
- **Sterilization following MTP:** can be performed immediately after the procedure if the provider has ensured that the abortion is complete and there is no infection.
- **Medical Abortion:** In the next menstrual cycle, if client had undergone medical abortion.
- **Concurrent with other Surgery:** LSCS, Salpingectomy or Ovarian Cystectomy.

2.5.3 Advantages of Post-Partum Minilap Tubectomy

- Woman is already admitted in a facility and her current health status usually can be established from delivery and prenatal records.
- The uterus is high in the abdomen and a small incision (1.5-3.0 cm) just below the umbilicus is usually sufficient to access the tubes.
- Local anaesthesia with light sedation/analgesia is usually sufficient.
- Hospital stay beyond what is required for a normal delivery (often 48 hours) is not required after the procedure.
- The procedure is permanent and is effective immediately.
- After the procedure no further contraception is required.
- No long term side effects.

2.5.4 Precautions to be taken while providing Post-Partum Minilap Tubectomy

- Post-partum women should be carefully screened for problems like postpartum haemorrhage or other conditions that could lead to increased risk of infection.
- Special care must be taken when exposing the tubes, since the engorged postpartum vessels can bleed vigorously, if injured.
- The surgeon must ensure that ligatures on the tubes are secure to prevent slipping and haemorrhage after the procedure is completed.

2.5.5 Why Post-Partum Sterilization should not be Performed beyond 7 Days

By seven days after delivery the uterus descends into the pelvis which makes access to the fallopian tubes more difficult. Bacteria are present more often in the tubes and endometrial cavity which leads to increased chance of infection. Hence, the procedure should be postponed to 42 days (6 weeks) after delivery when the uterus has involuted and become less vascular and risk of pelvic infection is also reduced.

2.6 Overview of Laparoscopic Tubal Occlusion

2.6.1 Background

Laparoscopic tubal occlusion is a procedure performed by specially trained providers using endoscopic equipment. Laparoscopy involves inserting a long thin tube with a lens in it (laparoscope) into the abdomen through a small incision after inflating the abdomen. It enables the doctor to view and block the fallopian tubes in the abdomen.

2.6.2 Timing of Laparoscopic Tubal Occlusion

Laparoscopic tubal occlusion is usually performed in the 'interval' period (6 weeks after delivery or any time when the woman is not pregnant) or following first trimester abortion. For interval procedures, laparoscopy may be performed at any time in the menstrual cycle although it is preferable to do it at the end of the menstrual period or shortly thereafter to ensure that the client is not pregnant.

It is not recommended in the postpartum period or after 2nd trimester post-abortion because of the possibility of injury to the larger, more vascular postpartum uterus.

2.6.3 Advantages of Laparoscopic Tubal Occlusion

- Causes minimal discomfort.
- Requires little operating time (usually 5 to 15 minutes).
- Leaves a very small scar.
- Has a short post-operative recovery period.
- Is permanent and effective immediately.
- No further contraception is required.
- No long term side effects.

Counselling and Informed Consent

3.1 Counselling

Counselling in family planning is the process of facilitating and enabling clients to make well informed, well considered and voluntary decisions about fertility and to choose a contraceptive method. Counselling is a client centered approach that involves communication between a service provider/counsellor and client. Counselling enables the service provider to understand clients' perceptions, attitudes, values, beliefs, family planning needs and preferences and accordingly the counselor can guide him/her towards decision making. The provider/counselor should be non-judgmental. Privacy (auditory and visual) and confidentiality should be maintained during the process of counselling.

Clients may not have complete information about sterilization and its effect which is further compounded by misconceptions and concerns. These should be dispelled by providing correct information.

3.1.1 General Counselling:

Should be done for all the clients seeking for family planning services. The main aim of general counselling is to provide informed choice to enable them to take a decision regarding the type of contraceptive method to be used. However, in all cases method-specific counselling on the chosen method must be given.

3.1.2 Method Specific Counselling:

During counselling for sterilization, use of simplified schematic diagrams can be helpful (See diagrams in Chapter 8 and Chapter 9 of this manual).

The following steps should be ensured before the client signs the consent form:

- A. **Clients have been counselled wherever required in the language they understand.**
- B. Clients have been informed of all the available methods of family planning and procedures.
- C. Clients have been made to understand what may happen before, during and after the surgery, its side effects and potential complications.
- D. Clients have made an informed decision for sterilization voluntarily.
- E. The following features of the sterilization procedure should be explained to the client:
 - i. **It is a permanent procedure for preventing future pregnancies.**
 - ii. It is a surgical procedure that has a possibility of complications, including failure, requiring further management.
 - iii. It does not affect sexual pleasure, ability or performance.
 - iv. It will not affect the client's strength or ability to perform normal day-to-day functions.
 - v. Sterilization does not protect against RTIs, STIs and HIV/AIDS.
 - vi. A reversal of the surgery is possible but the reversal involves major surgery and the success of which cannot be guaranteed.

- vii. In the unlikely event of any complication / failure/ death there is a redressal mechanism available in the form of an indemnity coverage.

3.1.3 Follow-up Counselling:

The information provided after the procedure is reinforced. Service providers need to listen attentively and be prepared to answer questions the client may have and address problems she has experienced after undergoing the procedure. This helps the client cope with common problems or side effects.

Advise client to return to the facility if there is any missed period/suspected pregnancy, within two weeks to rule out pregnancy.

3.2 Informed Choice and Informed Consent

The concepts of informed choice and informed consent are related but quite different in their intent. The purpose of informed choice is to ensure that all clients choose the best option/s for their health care needs after getting full information about all available options. Informed consent means that a client understands the surgical procedure and other options and then decides to receive the care. However, informed consent alone does not constitute informed choice (Annexure 1).

The consent of the partner is not required for sterilization.

However the partner should be encouraged to come for counseling.

3.2.1 Documentation of Informed Consent

The client's signature or putting her thumb impression on an informed consent form is the legal authorization for the sterilization procedure to be performed. The client must always sign or put her thumb impression on the consent form. In case of thumb impression, a signature of a witness (any person not associated with the service facility and chosen by the client) is a must. (Annexure 1)

Consent for sterilization should not be obtained when physical or emotional factors may compromise a client's ability to make a carefully considered decision about contraception.

3.2.2 Documenting Denial of Sterilization

A client who is unfit for Sterilization should be counselled and offered another method of contraception. The reason for denial of sterilization must be documented in the prescribed consent form (Annexure 1).

When a client evaluation indicates sterilization to be unsuitable for her either on medical or non-medical reasons, the client record should specify the reasons (e.g. the client has a condition that precludes surgery, client is uncertain about her choice, etc). The action taken by the provider should also be described (e.g. referral, treatment, etc). These records should be kept at the service facility where the client was evaluated and the sterilization found unsuitable for her.

Eligibility Criteria for Female Sterilization

4.1 Eligibility Criteria for Clients Undergoing Female Sterilization

(Self-declaration by the client will be the basis for compiling this information. No eligible client should be denied female sterilization service)

- Clients should be ever-married.
- Female clients should be above the age of 22 years and below the age of 49 years .
- The couple should have at least one child, whose age is above one year, unless the sterilization is medically indicated.
- Clients or their spouses/partners must not have undergone sterilization in the past (not applicable in cases of failure of previous sterilization).
- Clients must be in a sound state of mind, so as to understand the full implications of sterilization.
- Mentally ill clients must be certified by a psychiatrist and a statement should be given by the legal guardian/spouse regarding the soundness of the client's state of mind.
- A relevant medical history, physical examination and laboratory investigations need to be completed to ascertain eligibility for surgery (Chapter 5).

Client assessment for eligibility to undergo female sterilization is a key factor in minimizing risk of complications and ensuring quality of service delivery.

No medical conditions prevent a woman from undergoing female sterilization but may limit when, where or how the female sterilization procedure should be performed.

Category	Explanation
Accept (A)	There is no medical reason to deny the method to a person with this condition or in this circumstance. The procedure can be performed in most clinical settings.
Caution (C)	The method is normally provided in a routine setting but with extra preparation and precautions as required.
Delay (D)	Provision of the method should be delayed or postponed. These conditions need to be evaluated, treated and resolved before female sterilization can be performed. Alternatively, temporary methods of contraception should be provided.
Special (S)	Certain women have conditions that make operation difficult or increase the risks. The procedure should be undertaken in a setting with an experienced surgeon and staff, equipment needed to provide general anaesthesia and other back-up medical support. The capacity to decide on the most appropriate procedure and anesthesia support is also needed. Alternatively, temporary methods of contraception should be provided if referral is required or there is otherwise any delay.

The following are the conditions included in Caution, Delay and Special categories:

CAUTION	DELAY	SPECIAL
<ul style="list-style-type: none"> • Previous abdominal or pelvic surgery 	<ul style="list-style-type: none"> • Severe iron deficiency anaemia (Haemoglobin <7 gm/dl) 	<ul style="list-style-type: none"> • Conditions that increase chances of heart disease or stroke i.e. older age, smoking, high BP or diabetes
<ul style="list-style-type: none"> • Obesity 	<ul style="list-style-type: none"> • Current pregnancy 	<ul style="list-style-type: none"> • Blood Pressure > 160/100
<ul style="list-style-type: none"> • Controlled BP (140-159/ 90-99) 	<ul style="list-style-type: none"> • 8 – 42 days postpartum 	<ul style="list-style-type: none"> • Complicated heart disease
<ul style="list-style-type: none"> • Uncomplicated heart disease 	<ul style="list-style-type: none"> • Pregnancy with severe pre-eclampsia or eclampsia 	<ul style="list-style-type: none"> • Coagulation disorders
<ul style="list-style-type: none"> • History of ischemic heart disease 	<ul style="list-style-type: none"> • Post partum or post abortion complications (infection, hemorrhage and trauma) 	<ul style="list-style-type: none"> • Chronic lung diseases (asthma or emphysema)
<ul style="list-style-type: none"> • Stroke 	<ul style="list-style-type: none"> • Current DVT/PE 	<ul style="list-style-type: none"> • Endometriosis
<ul style="list-style-type: none"> • History of cerebro-vascular accident 	<ul style="list-style-type: none"> • Major surgery with prolonged immobilization 	<ul style="list-style-type: none"> • Pelvic tuberculosis
<ul style="list-style-type: none"> • History of deep vein thrombosis or pulmonary embolism 	<ul style="list-style-type: none"> • Abdominal skin infections 	<ul style="list-style-type: none"> • Fixed uterus due to previous surgery or infection
<ul style="list-style-type: none"> • Epilepsy 	<ul style="list-style-type: none"> • Current ischemic heart disease 	<ul style="list-style-type: none"> • Abdominal wall or umbilical hernia
<ul style="list-style-type: none"> • Depressive disorders 	<ul style="list-style-type: none"> • Lung disease like pneumonia 	<ul style="list-style-type: none"> • Post partum or post abortion uterine rupture or perforation
<ul style="list-style-type: none"> • Current breast cancer 	<ul style="list-style-type: none"> • Systemic infection 	<ul style="list-style-type: none"> • Diabetes of 20 years standing with organ damage
<ul style="list-style-type: none"> • Uterine fibroids 	<ul style="list-style-type: none"> • Unexplained vaginal bleeding 	<ul style="list-style-type: none"> • Hyperthyroidism
<ul style="list-style-type: none"> • PID without subsequent pregnancy 	<ul style="list-style-type: none"> • Large collection of blood in uterus 	<ul style="list-style-type: none"> • Severe cirrhosis of liver
<ul style="list-style-type: none"> • Uncomplicated diabetes 	<ul style="list-style-type: none"> • Malignant trophoblastic disease 	<ul style="list-style-type: none"> • AIDS
<ul style="list-style-type: none"> • Hypothyroidism 	<ul style="list-style-type: none"> • Cancers of the genital tract 	
<ul style="list-style-type: none"> • Mild cirrhosis 	<ul style="list-style-type: none"> • Current PID 	
<ul style="list-style-type: none"> • Liver tumors 	<ul style="list-style-type: none"> • Current purulent cervicitis, Chlamydia, Gonorrhoea 	
<ul style="list-style-type: none"> • Kidney disease 	<ul style="list-style-type: none"> • Current gall bladder disease 	
<ul style="list-style-type: none"> • Thalassemia and Sickle Cell Disease 	<ul style="list-style-type: none"> • Uncontrolled diabetes 	
<ul style="list-style-type: none"> • HIV 		

Offer the client another contraceptive method till the procedure can be performed.

World Health Organization (WHO) has developed Medical Eligibility Criteria (MEC) for Female Sterilization procedures. To maximize access to quality services, the Female Sterilization WHO MEC (2011 Update) adapted by the Government of India categorizes the various medical conditions and guides when, where and how the procedure should be performed. *For detailed Medical Eligibility Criteria (MEC) and conditions for Female Sterilization, refer WHO Publication, "Family Planning: A Global Handbook for Providers" 2011 Update.*

Female Sterilization in Women with HIV/AIDS

- **No woman should be denied female sterilization based on their HIV Status.**
- Women who are living with HIV, have AIDS or are on antiretroviral (ARV) therapy can safely undergo female sterilization. The procedure is done as in other clients, ensuring universal precautions.
- Counsel these women to use condoms in addition to undergo female sterilization. Used consistently and correctly, condoms help prevent transmission of HIV and other STIs. (Dual Protection).
- No woman should be coerced or pressurized into having sterilization and that includes women with HIV.

Clinical Assessment of Clients and Steps prior to Sterilization Procedures

5.1 Clinical Assessment

5.1.1 Demographic Information

The ensuing information is required: Name of the client, spouse's name, age, address, marital status, occupation, religion, educational status, number of living children and age of the youngest child. If possible, contact telephone number of client, ASHA/ANM (if available)

5.1.2 History

Specific information which should be obtained as part of the medical history includes:

- **Menstrual History** - date of last menstrual period (LMP); cycle details including length of cycle, duration and amount of flow, dysmenorrhoea, regularity of periods.
- **Obstetric history** - number of pregnancies and living children and mode of delivery, date of last childbirth, number and date of abortion/MTP; current pregnancy status.
- **Contraceptive history** - when and what was the last contraceptive used. If discontinued, when and why.
- **Medical History**

History of illness and other medical conditions in the past or at present to screen out the diseases as mentioned under the medical eligibility criteria. Rule out any febrile illness, coagulation disorder or diabetes.

Immunization status for tetanus.

Any known drug allergies especially to analgesics and other medications.

Current medications and reason.

5.1.3 Physical Examination

This should include a general examination, examination of abdomen and pelvis and any other examination as indicated by the client's medical history or general physical examination.

5.1.3.1 General examination

- Pulse, blood pressure, respiratory rate, temperature
- Body weight, general condition, pallor and nutritional status
- Auscultation of heart and lungs
- Signs of anaemia: such as
 - pale skin or conjunctiva
 - rapid pulse (> 100/min)
 - systolic murmurs

5.1.3.2 Abdominal examination

- Suprapubic or pelvic tenderness
- Masses or gross abnormalities
- Surgical scars

5.1.3.3 Pelvic examination

Ensure that the client has passed urine before performing a pelvic examination

- Inspect external genitalia for abnormalities and lesions.
- Enlarged groin nodes

5.1.3.4 Speculum examination

- Check for abnormal vaginal discharge
- Check cervix for purulent cervicitis
- If indicated by history and physical findings and a microscope is available, obtain specimens of vaginal and cervical discharge for diagnostic studies.

5.1.3.5 Bimanual examination

- Check for cervical motion tenderness
- Determine size, shape, position and mobility of uterus
- Check for mass or tenderness of the adnexa, active PID, etc.
- Check for signs of pregnancy
- Check for uterine abnormalities
- Recto-vaginal examination is performed only if findings on bimanual examination are doubtful, for example, mass in cul de sac.
- Check pouch of Douglas for mass or tenderness

5.1.4 Investigations

5.1.4.1 Pregnancy test

This is usually not necessary except in cases where it is difficult to confirm or rule out pregnancy by pelvic examination (i.e. very early pregnancy less than 6 weeks from LMP) or the results of a pelvic examination are equivocal (e.g. the size and consistency of the uterus is difficult to determine due to obesity or a retroverted uterus). In these situations, a highly sensitive pregnancy test (positive within 10 days after conception) may be necessary. If pregnancy testing is not available, counsel the client to use a barrier method until her next menses to prevent pregnancy and plan the procedure for the next menstrual cycle.

One can be reasonably sure that the client is not pregnant, if she

- Has no signs or symptoms of pregnancy (e.g. breast tenderness or nausea) or
- Has not had intercourse since her last menses or
- Has been correctly and consistently using a reliable contraceptive method or
- Is within the first 7 days post-abortion or
- Is within the first 7 days after the start of her menses or
- Is within 4 weeks postpartum or
- Is fully breast feeding, is less than 6 months postpartum and has had no menstrual bleeding.

If there is no sign or symptom of pregnancy, female sterilization can be provided to the client, if she has opted for the method and the Medical Eligibility Criteria has been met.

5.1.4.2 Other Lab Investigations

Routine investigations like haemoglobin (Haemoglobin should be ≥ 7 gm/dl) and urine examination for albumin and sugar are necessary. Extensive laboratory investigations are unnecessary for procedures under local anaesthesia. Other investigations may be conducted, if indicated.

5.1.5 Final Assessment

After reviewing the client's suitability for Female Sterilization the operating surgeon should conduct a final assessment prior to surgery at the facility where the procedure is to be performed.

The operating surgeon should ensure that the medical records are filled properly and he/she fills the checklist (Annexure 2).

5.2 Pre-procedure Instructions for Clients

The client should:

- i. Preferably trim the pubic and perineal hair. Shaving of pubic hair, if warranted, should be done just prior to surgery.
- ii. Bathe and wear clean and loose clothes to the OT.
- iii. Not have a meal on the morning of the surgery (the client should not take anything orally, not even water, at least 4 hours prior to surgery and any solids, milk or tea at least 6 hours prior to surgery).
- iv. Empty her bowels on the morning of the surgery and empty her bladder before entering the OT.
- v. Should remove her glasses, contact lens, dentures, jewellery and lip stick if she is wearing any of these.
- vi. Have a responsible adult accompanying her to take her home after surgery.

Analgesia and Anaesthesia

6.1 Background

The purpose of pain management for female sterilization is to ensure that the client experiences a minimum of pain, discomfort and anxiety as well as the least risk to her health. Appropriate use of various agents combined with gentle technique and verbal support from the provider and nursing staff allows the client to be awake, responsive and in minimal fear and discomfort.

Local anaesthesia, when properly administered and managed meets both these goals and is recommended both for Minilap tubectomy and Laparoscopic tubal occlusion.

6.2 Pain Management Techniques

The key steps to pain management and client comfort with minilap tubectomy and laparoscopic tubal occlusion under local anaesthesia are:

- Explain each step of the procedure prior to performing it.
- Wait a few seconds after performing each step or task (e.g. placing the vulsellum) to allow the client to prepare for the next one.
- Move slowly, without jerky or quick motions.
- Use instruments with confidence.
- Avoid saying things like this won't hurt when, in fact, it will hurt; or I am almost done when you are not.
- Communicate with the client throughout the procedure.
- Be sensitive to what you are saying and doing.

The local anaesthesia has proven to be the most appropriate anaesthesia for female sterilization procedures both minilap tubectomy and laparoscopic tubal occlusion and has allowed health institutions to provide sterilization services safely even in settings with limited resources. Although general and regional anaesthesia can be used safely and effectively for abdominal tubectomy and laparoscopic tubal occlusion, the number of unexpected and life-threatening complications related to general or regional anaesthesia is higher than the number associated with local anaesthesia (WHO, 1992). Thus, general and regional anaesthesia should be used only in settings that are properly equipped and staffed to provide such anaesthesia and to handle emergencies.

Local anaesthesia is safer than general anaesthesia.

6.3 Preparation Prior to Surgery

6.3.1 Pre-Medication

Reassurance and proper explanation of the procedure go a long way in allaying the anxiety and apprehension of the client. However, if needed, preferably Tablet Alprazolam (0.25 to 0.50 mg) or Tablet Diazepam (5 to 10 mg) can be given before the operation.

6.3.2 Sedation and Analgesia

The anxiolytic, sedative, light muscle relaxant and amnesic effect produced in the client following administration of sedation allow sterilization procedure to be performed smoothly under local anesthesia. On the day of the operation, drugs for sedation and analgesia are to be given as shown in table 6.1.

Table 6.1 Drugs for Preoperative and Intra-operative Sedation and Analgesia

Approximate Weight/Build of client	Name of the Drugs (Dose)	Route and time of administration	Repeat Dose if required on the table**	Route and time of administration**
Thin (< 40 kg)	Pethidine 25 mg + Promethazine 12.5 mg	IM: 30-45 min prior to surgery	Pethidine 10 mg	IV: 5 min prior to surgery
	OR			
	Pentazocine 15 mg + Promethazine 12.5 mg	IM: 30-45 min prior to surgery	Pentazocine 15 mg	IV: 5 min prior to surgery
Average (40-50 kg)	Pethidine 37.5 mg + Promethazine 12.5 mg	IM: 30-45 min prior to surgery	Pethidine 10 mg	IV: 5 min prior to surgery
	OR			
	Pentazocine 22.5 mg + Promethazine 12.5 mg	IM: 30-45 min prior to surgery	Pentazocine 15 mg	IV: 5 min prior to surgery
Well built (>50 kg)	Pethidine 50 mg + Promethazine 25 mg	IM: 30-45 min prior to surgery	Pethidine 10 mg	IV: 5 min prior to surgery
	OR			
	Pentazocine 30 mg + Promethazine 25 mg	IM: 30-45 min prior to surgery	Pentazocine 15 mg	IV: 5 min prior to surgery

****Dosage according to body weight is:** Pethidine 0.5 to 1 mg/kg, Pentazocine 0.5 mg/kg and Promethazine 0.3 to 0.5 mg/kg.

A repeat dose (if required) is given slowly intravenously as Pethidine 10 mg or Pentazocine-15 mg, 45 minutes after the first dose.

The drugs should be diluted with equal quantity of normal saline or distilled water before IV administration.

6.3.3 Local Anaesthesia

Skin sensitivity test for local anaesthetic agent (lignocaine) has no established predictive value for anaphylactic reaction. Therefore, it is not mandatory to perform a skin sensitivity test prior to infiltration of lignocaine.

6.3.3.1 Local Anaesthesia Technique

The goal of local anaesthesia is to achieve an anaesthetic field block that penetrates all layers of the abdominal wall, from the skin to the peritoneum. The three layers most sensitive to pain are the skin, the rectus fascia and the parietal peritoneum. Each of these layers should be carefully infiltrated with local anaesthetic. Additionally if required, dropping anaesthetic agents over the fallopian tubes reinforces the effect of the anaesthesia as it decreases pain resulting from the manipulation of the tubes and also reduces postsurgical pain.

- Lignocaine is the recommended local anaesthetic and the recommended concentration is 1% lignocaine without adrenaline.

- The usual dose for local infiltration is 3 mg/kg of body weight and onset of action is typically within three to five minutes, with the anaesthetic effect lasting up to 45 minutes.
- 2% lignocaine solution must be diluted to 1% using normal saline or sterile water for injection.
- Confirm the effect of anaesthesia before surgery.
- Client must be continuously monitored during and after parenteral administration.
- Oral communication must be maintained with the client throughout the procedure.
- If required, an IV line is to be secured before the start of the procedure.

Following are the reasons why adrenaline (epinephrine) is not recommended:

- i. The vasoconstriction caused by adrenaline may mask bleeding in small blood vessels.
- ii. It is best to detect and control all bleeding during surgery to prevent formation of undetected hematomas later.
- iii. Adrenaline is dangerous, if accidentally injected intravascular.

6.3.3.2 Complications of Local Anaesthesia

Major complications from local anaesthesia are extremely rare. Rarely convulsions and deaths have however been reported in cases where excessive doses were used or injections into a vein occurred. To minimize the risk of major complications, local anaesthetics should be used in the smallest effective doses with careful attention to proper technique. In most cases, 10 ml of 1% lignocaine is adequate. In no case should the total dose exceed 3 mg per kg body weight of the client (i.e. about 15 ml). Aspiration (pulling back on the plunger of the syringe) prior to injection reduces the risk of intravenous injection. When recommended dosages are followed and the plunger is withdrawn before each injection, toxic levels of local anaesthetic agents rarely occur. Nonetheless, it is important to recognize the signs and symptoms of toxicity so that no further injections are made and medical treatment is begun.

The key to safe use of a local anaesthetic is to be sure that it is not injected directly into a vein and to use the lowest effective dose.

The following sequence indicates increasingly toxic levels of local anaesthetic:

Mild Effects

- Numbness of lips and tongue
- Metallic taste in mouth
- Dizziness and light-headedness
- Ringing in ears
- Difficulty in focusing eyes

Severe Effects

- Lack of verbal response
- Sleepiness
- Disorientation
- Muscle twitching and shivering
- Slurred speech
- Tonic-clonic convulsions (generalized seizures)
- Respiratory depression or arrest

For mild effects, wait a few minutes to see if symptoms subside, talk to the client and then continue the procedure. Immediate treatment is needed for severe effects:

Keep the airway clear and give oxygen by mask or ventilation by Ambu bag.

Should convulsions occur or persist despite respiratory support, small dose of Injection Midazolam 1 to 2 mg may be given intravenously slowly or 5 to 10 mg of Injection Diazepam intravenously slowly.

The clinician should be aware that the use of injection diazepam can cause respiratory depression.

6.4 Monitoring

Client monitoring must be a routine practice in performing sterilization. All staff members should be trained in how and how often to monitor the client while she is under the effects of sedation and local anaesthetic. Local anaesthetic and analgesic agents and sedatives may cause respiratory depression, cardiovascular depression, hypersensitivity reactions and central nervous system toxicity. As in any abdominal surgery, client monitoring is essential. Monitoring enables the surgical team to detect these problems early and to respond timely before complications progress and become difficult to manage. Vital sign monitor, if available should be used.

6.4.1 Important Steps of Monitoring

- Medical Records** are to be maintained on monitoring of vital signs (pulse, respiration and blood pressure), level of consciousness, vomiting and other relevant information. The name of the drug(s), dosage route and time of all administered drugs must be recorded.
- Monitoring** is to be done as described below:
 - Pre-operatively:** Pulse, respiration and blood pressure should be taken prior to pre-medication and every 10 minutes thereafter.
 - Intra-operatively:** (a) Maintain Verbal communication with client; and (b) check pulse, respiration and blood pressure every 5 minutes, especially during the time of gas insufflation and at the time of tubal ligation.
 - Post-operatively:** Pulse, respiration and blood pressure are to be monitored and recorded every 15 minutes for at least one hour after surgery or even longer if the patient is unstable or not awake.

General Anaesthesia: This is rarely necessary. However, it may be required in the following conditions:

- non-cooperative patient
- obesity
- history of allergy to local anaesthetic drugs
- anticipated difficult surgery.

Sterilization under GA and regional anaesthesia should be done in centers where all routine and emergency back-up facilities are present for providing such anaesthesia and to be administered by a qualified/competent anesthetist.

Prevention of Infection

7.1 Background

In health care facilities, the service providers and other staff working are exposed to infections and contaminated materials during their daily work because of the presence of numerous types of infectious agents. It is therefore essential to practise appropriate infection-prevention procedures at all times with all clients so as to minimize the risk of transmission of any infection including HIV/AIDS, Hepatitis B and C to service providers, patients and visitors.

Components of Infection Prevention (Standard Precautions) are:

1. Hand washing
2. Self- Protection of Health Care Providers.
3. Safe work practices (handling of sharp items).
4. Environmental cleanliness
5. Proper instrument processing
6. Waste management plan

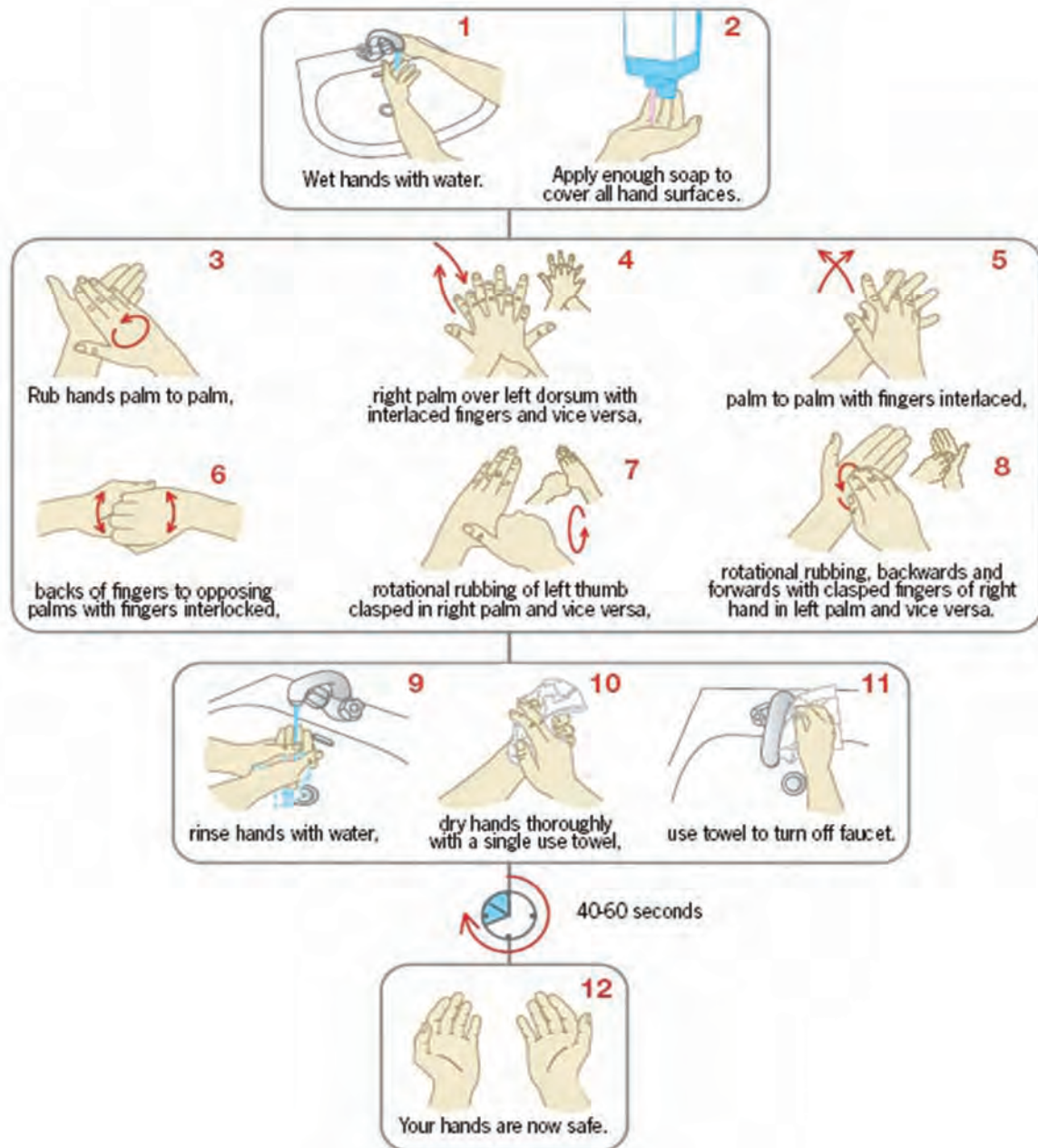
7.2 Hand Washing

- Routine hand washing to be done before wearing gloves, after examining or after having any direct contact with a client, after contact with body fluids and after removing gloves.
- Plain or antiseptic soap should be used for routine hand washing. Hands should be rinsed in running water and air-dried.
- Dry hand washing using alcohol based hand-rub (if available) is a good option especially when running water supply is limited.
- The duration of scrub should be 20-30 seconds both with soap & water and while using alcohol.

A non-irritating alcohol hand-scrub solution can be prepared by adding glycerine, propylene glycol or Sorbitol to the alcohol (2 ml in 100 ml of 60-90% alcohol solution).

Practices such as using a common basin where a number of people or even one person washes or dips his/her hand(s) repeatedly is dangerous and must be avoided. This is because micro-organisms grow and multiply in moisture and standing water even it contains antiseptic agents.

7.2.1 Steps of Hand washing with soap and water (Fig. 1)



7.2.2 Surgical Scrub

The surgeon and his/her assistant must scrub both their hands and forearms up to the elbows thoroughly with soap and running water or antiseptic agents. The entire procedure should be repeated at least three times so that the scrub lasts for at least 3 minutes. The hands and forearms should be air dried. Do not dry hands with sterile surgical gown which you are going to wear for surgical procedure.

A small nail brush should be used for cleaning fingernails.

Ideally, the surgeon and the assistant should scrub thoroughly between each procedure. In high case load (camp) settings, in order to prevent re-colonization of the skin by microorganisms, the surgical staff should do a three-minute surgical scrub every hour or after every five cases (whichever is earlier) or if the surgeon (and/or the surgical staff) goes out of the OT or touches any infected item or if the glove is torn. In between antiseptic alcohol scrub should be done.

7.3 Self Protection of Health Care Providers

7.3.1 Wearing Gloves

All doctors, nurses and other health providers should wear protective gloves during all procedures involving contact with any patients and biological fluids.

Three types of gloves are used in the clinical practice:

- i. **Examination:** used for taking intravenous samples; in OPD while performing bimanual examination; touching intact skin and mucosa.
- ii. **Surgical:** used for the procedures and handling blood.
- iii. **Utility:** used by paramedics mainly to handle the instruments (esp. sharps), linen, cleaning etc. The staff should wear utility gloves when handling and transporting waste and should decontaminate and wash the gloves and also wash their hands when finished.

7.3.2 For Self Protection

All doctors, nurses and other healthcare providers should wear proper attire like mask, plastic apron/ hospital dress etc. while working in the health care facilities.

7.4 Safe Work Practices

Sharps have the highest potential to spread infection by transferring the micro-organisms directly into the blood. So, all sharp items are to be handled with great care to avoid chances of injury as below:

- Handling of sharp instruments during the operation requires using the 'Hands Free technique' by placing them in a kidney tray.
- Syringes and needles after use should not be bent, broken, recapped or removed from the syringe. Instead, the assembled needle and syringe should be discarded in a puncture-resistant container.
- Immediately after use, sharp objects such as needles, scalpel blades, suture needles, glass ampoules, etc. should be disposed off in a puncture-resistant container with a lid made of either metal or heavy rigid plastic or cardboard. The container should be sealed and filled upto not more than 3/4th level before it is disposed off.
- If despite best efforts, accidental exposure to needle pricks or cuts occur, follow the NACO PEP guidelines.

7.5 Environmental Cleanliness

7.5.1 Health care workers should follow the following cleanliness protocols at all the facilities

- Wear utility gloves while cleaning.
- Use a damp/wet cloth for dusting to reduce the spread of dust and micro organisms.
- Wash room surfaces from top to bottom so that dirt falls on the floor.
- Clean the floor with a mop soaked in 0.5% chlorine solution (should never use broom).
- Use 0.5% chlorine solution* for decontamination and cleaning and 1% chlorine solution for disinfecting waste and managing spills.

7.5.2 Maintenance of Asepsis in OT

- **Before Surgery:** Clean the operating table, table/counter top and light handles with a cloth soaked in 0.5% chlorine solution and detergent.
- **After Surgery:** Decontaminate operating table, counters/table tops and light handles by swabbing with 0.5% chlorine solution.
- **When not in use:** OT should be locked.
- **Weekly Cleaning:** Clean walls, floor, other surfaces with 0.5% chlorine solution, detergent and plain water by scrubbing from top to bottom.
- Movement in and around the OT should be minimized to reduce number of micro-organisms.

7.6 Processing of Equipment, Instruments and other Reusable Items

7.6.1 Decontamination

Decontamination removes blood, tissue, body fluids and prevents them from drying and also destroys hepatitis B & HIV viruses.

- Immediately after use, all instruments should be placed in a plastic bucket containing a solution of 0.5% chlorine solution for 10 minutes. After 10 minutes, the items should be removed from the chlorine solution and rinsed with water or cleaned immediately. Utility gloves and protective clothes should be worn during this and subsequent steps.
- A fresh chlorine solution should be prepared at the beginning of each day. The chlorine solution should be discarded after 8 hours or when it is visibly dirty.

7.6.1.1 Preparation of 0.5% Chlorine Solution

Preparation of 0.5% chlorine solution*

a. Calcium Hypochlorite or Chlorinated lime:

If using bleaching powder: Use the formula – (0.5% active chlorine in powder) × 1000 = gm of powder/litre of water. So, for the bleaching powder with 35% available chlorine, the formula will be:

$$(0.5/35) \times 1000 = 14.3/15 \text{ gm/litre of water}$$

Dissolve three teaspoons of bleaching powder (15 gm of calcium hypochlorite) in one litre of water. Increase quantity of chlorine in same proportion to prepare larger quantities of solution.

b. Sodium Hypochlorite Solution

If using liquid hypochlorite solution/bleach: mix one part of the solution to 9 parts of water to make 0.5% chlorine solution (if solution has 0.5% active chlorine available) OR one part of liquid bleach to six parts of water (if solution has 3.5% active chlorine available).

7.6.1.2 Decontamination of Laparoscope

After use, laparoscope should be decontaminated with gauge/cotton swab soaked in spirit twice. One must use dripping (soaking wet) spirit swab – the first swab will remove the blood and tissue fluids and the second will actually cause decontamination. One should not use 0.5% chlorine solution for this purpose as it will damage the lens & the cementing materials of the scope (Annexure 17).

7.6.2 Cleaning

Cleaning reduces the number of micro-organisms and endospores on instruments and equipment. The instruments and other items should be scrubbed vigorously with a tooth brush in lukewarm water with detergent to remove all blood, tissue and other residue. Detergent should be used as water alone will not remove proteins or oil. Soap is not recommended as it can leave a residue. Hot water should not be used because it can coagulate protein such as blood, making it harder to remove.

The items should then be rinsed thoroughly with water and allowed to dry with soft cloth or air-dry. Items that require HLD by boiling can be placed directly in a pot of water after cleaning.

7.6.3. High-Level Disinfection (HLD)

High Level Disinfection (HLD) is effective in eliminating all micro-organisms except endospores. It is the only acceptable alternative for processing instruments and other items for reuse, if sterilization is not possible. HLD can be achieved either by boiling or by soaking in a high-level disinfectant depending on the heat-resistant properties of the objects that are to be disinfected.

7.6.3.1 HLD by Boiling

- Instruments for HLD must be decontaminated and cleaned with detergent and water prior to boiling.
- Articles must be completely immersed in the water. Instruments with locks and teeth or hinges should be placed in an open position so that each surface is in contact with water.
- Close the lid of the boiler and switch on the electric power or put it on the stove as per instruction of its use.
- Do not add anything to the pot/boiler after starting the process and boiling begins.
- Once the water starts boiling, boil the instruments and other articles for 20 minutes in the pot/boiler with a lid.
- After boiling remove objects with a sterile or previously high level disinfected cheattle's forceps.
- Use objects after they cool immediately or store them in a covered, airtight, dry high level disinfected container for up to seven days. If stored in an ordinary covered container, the objects can be used for up to 24 hours.

7.6.3.2 HLD by Chemical Method

After decontaminating, cleaning and drying the used objects, soak for 20 minutes in a solution containing 2% glutaraldehyde solution. Thoroughly rinse the objects with water boiled for 20 minutes before use.

7.6.4. Sterilization

Sterilization eliminates all micro-organisms, including endospores. All items and other items need prior decontamination, careful cleaning and thorough rinsing prior to sterilization. It can be done by using steam (autoclaving) or soaking in a chemical solution.

7.6.4.1 Steam Sterilization (Autoclaving)

Wrap cleaned instruments in cloth or place unwrapped instruments in a metal container. Arrange wrapped packs in the chamber or drum to allow free circulation of heat or steam among the surfaces of all items. Items such as scissors and forceps should be sterilized in an open position. Sterilize instruments as per the recommended standards of 15 lbs/sq inch pressure for 20 minutes for unwrapped and 30 minutes for wrapped instruments and linen. If combined then 30 minutes. Timings should start after a pressure of 15 lbs/square inch is attained.

7.6.4.2 Sterilization by Chemical Method

Decontaminated, cleaned and dried items are put in 2% glutaraldehyde solution for at least 8 hours. Do not add or remove any items once the timer starts. Items should be rinsed well with sterile water (not boiled water), air-dried and stored in a covered sterile container for up to 7 days. Sterile water can be prepared by autoclaving water for 20 minutes at 15 lbs/sq inch pressure in an autoclave.

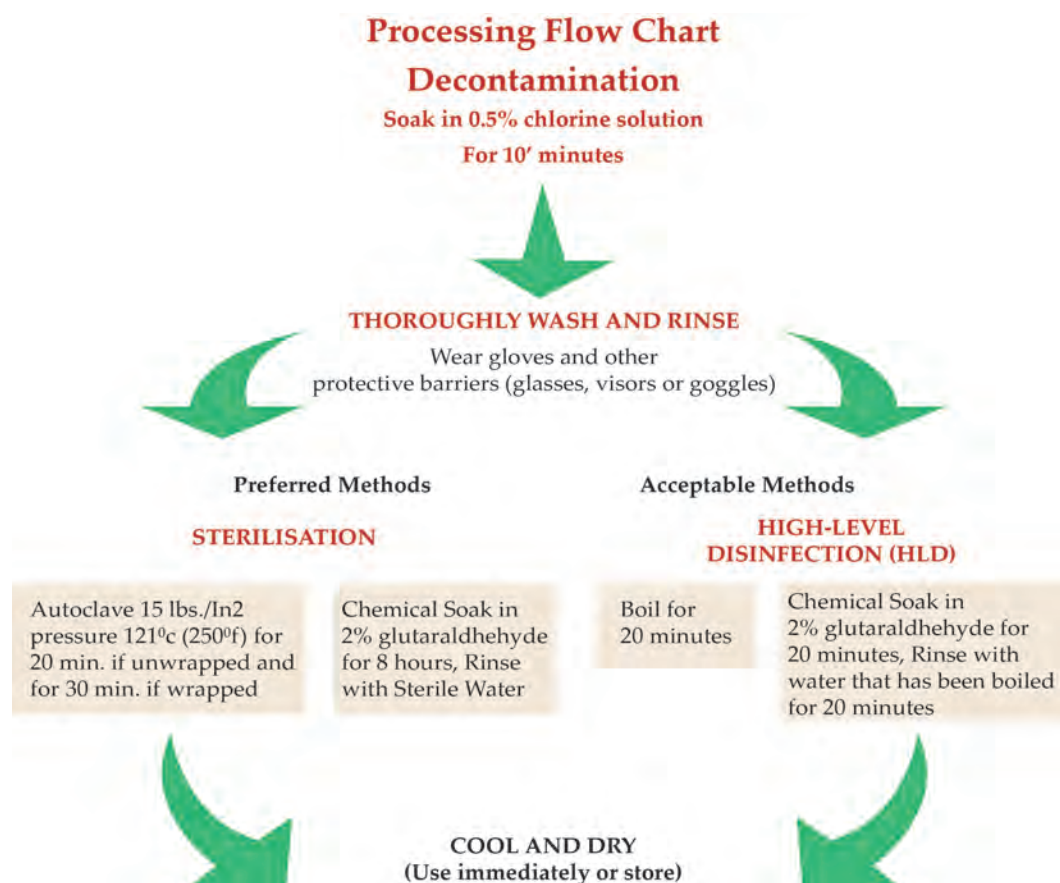
Item-Wise Recommended Methods for HLD/Sterilization

Material	Method	Procedure
Linens (drapes, sponges, scrub suits, operating packs etc)	Autoclave	121°C at 15 lbs/sq. inch pressure for 30 minutes. Use within one week but if drum is opened, use within 24 hours.
Rubber items (gloves, catheters and rubber tubings)	Autoclave	121° C at 15 lbs/sq. inch pressure for 30 minutes. Wrap rubber items in paper/news paper before autoclaving. Gloves should always be used 24-48 hours after sterilization, so that they regain their elasticity.
	HLD by boiling	Boil them in an immersed state for 20 minutes after water comes to rolling boil, then store dry and use immediately.
Surgical Instruments	Sterilization by Chemicals	Immerse in either Paracetic acid: for 30 minutes (or) Glutareldehyde 2%: 8-10 Hours Dilution is not advised
	Autoclave	At 15 lbs/sq. inch pressure 30 minutes for wrapped and 20 minutes for unwrapped items Unwrapped items should be used immediately
	HLD by Boiling	After water comes to rolling boil, boil in immersed state for 20 minutes
	HLD by Chemical	Paracetic acid: 10 Minutes (or) Glutareldehyde 2%: 20 minutes

Decontamination and cleaning of equipment, instruments and other reusable items, followed by sterilization or high-level disinfection (HLD), minimizes the risk of transmission of infection. HLD does not reliably destroy all bacterial endospores. Hence instruments and other items used during surgery should be sterilized. When that is not possible, HLD is the only acceptable alternative for processing instruments and other items for reuse.

7.6.5 Storage

- Use high-level disinfected or sterilized instruments and linens immediately or store them for up to one week in a high-level disinfected or sterilized air tight container.
- If lid is opened then either use them or repeat the HLD/sterilization procedure after 24 hrs.
- Always mark the date of the Sterilization/HLD while storing.



7.7 Waste Management

All kinds of waste are to be disposed off properly; improper disposal of biomedical waste poses health risk to health personnel and the community. Proper disposal of infectious waste is crucial in maintaining environmental cleanliness. All healthcare facilities in the country are covered under Bio Medical Waste Management and Handling Rules (1998), hence it is mandatory to manage waste as per the guidelines of the local authorities.

All waste in a health facility can be divided into:

- A General wastes** - The waste that pose no risk of injury or infections and are similar to household trash. Examples include paper, boxes, packing materials, bottles, plastic containers and food-related trash. It should be stored in black bins, which will be taken away by the municipality.
- B Biomedical wastes** - The waste that pose risk to health care providers and to the surrounding environment. These are materials generated in the diagnosis, treatment or immunization of clients, including blood, blood products and other body fluids, as well as material containing fresh or dried blood or body fluids, bandages or surgical sponges and organic waste such as human tissue, body parts, placenta and products of conception.

7.7.1 Steps of Waste Management

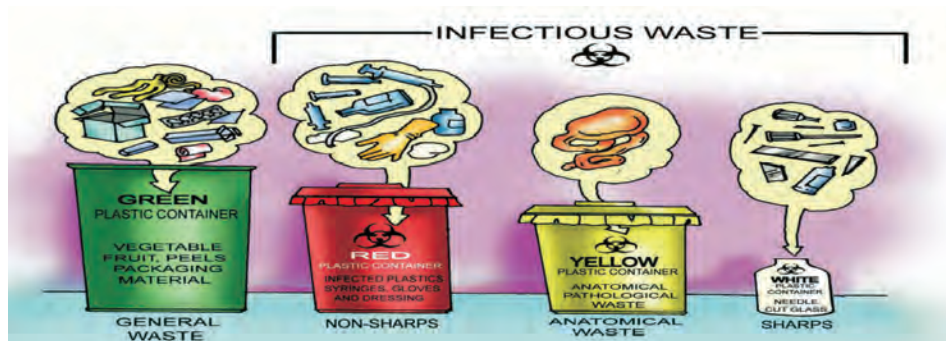
7.7.1.1 Segregation

All wastes generated at the health facility should be separated into infectious and non-infectious waste. Never mix infectious and non-infectious wastes.

7.7.1.2 Collection and Storage

Put infectious, non-infectious and sharp wastes in appropriate containers such as -

- **Sharps** like needles, blades, broken glass are to be collected in white/blue/puncture proof container.
- **Non-Sharps** infectious wastes like soiled and infected plastics, syringes, dressings, gloves, masks, blood bags, urine bags are to be collected in red plastic bins/bags.
- **Anatomical or Pathological waste** like placenta, body parts etc. are to be collected in yellow plastic bins/bags.
- **Non-infectious (General) waste** like packaging material, cartons, fruit and vegetable peels, syringe, needle wrappers and medicine covers are to be collected in green/black plastic bins or bags.



7.7.1.3 Transportation

Always collect waste in covered bins and empty bins after they are filled not more than 3/4th level. Never store waste beyond 48 hrs. The waste should be transported in closed containers as carrying in open container may spill which will cause spread of infection. Also the containers with infectious wastes should never be carried through crowded areas.

7.7.1.4. Disposal of Waste

Burning solid infectious waste (including anatomical/pathological wastes) in an incinerator is the best option. If incinerator is not available, burying solid infectious waste on-site in a deep burial pit, as long as it is secured with a fence or wall and away from any water source, is the next best option. The waste should be covered with 10 to 30 centimeters (4 to 10 inches) of soil at the end of each day. Plastics should be autoclaved or decontaminated and then shredded. Sharps are to be disinfected with chlorine solution and dumped in the sharps pit. Liquid infectious waste, after disinfecting with chlorine solution, should be poured down the drain connected to an adequately treated sewer or pit latrine; burial with other infectious waste is an acceptable alternative. General waste can be sent without any treatment to municipal dumps for final disposal.

Surgical Procedure – Minilap Tubectomy

8.1 Surgical Approaches

Minilap Tubectomy is performed by two approaches (Fig. 1):

- 1 **Sub-umbilical approach** is appropriate in the immediate postpartum period and within 7 days of childbirth. (Post-Partum Sterilization).
- 2 **Supra pubic approach** is appropriate for Interval Minilap Tubectomy.

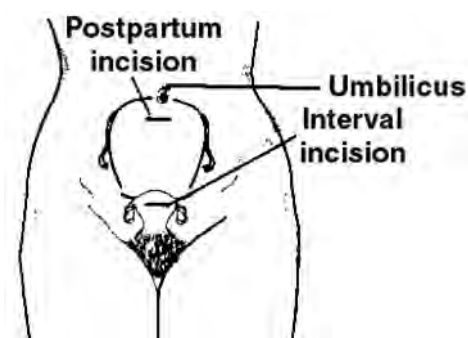


Fig. 1: Incision Site: Postpartum and Interval Abdominal Tubectomy

8.1.1 Sub-Umbilical Approach (Post Partum Sterilization)

Following delivery, when the uterus is enlarged, the uterine fundus and the tubes are high in the abdomen and can be approached by an incision under the umbilicus. This section describes the evaluation and preparation of a client undergoing a sub-umbilical Minilap Tubectomy and the important steps of the procedure. A list of equipment and instruments for minilap tubectomy is given in Annexure 6.

8.1.1.1 Pre Procedure Assessment of the Client

- A client requesting post-partum sterilization usually would have been counselled and assessed before arriving at the facility for delivery. Even so, additional counselling and assessment of her interest in and suitability for sterilization should again be done at the facility before the client is transferred from the post-natal ward to the surgical area for sterilization.
- Another important consideration is the condition of the newborn. If the newborn is unwell, the sterilization procedure can be postponed up to a week after delivery, since the client's desire for permanent contraception may change if the newborn dies or suffers from some acute health problem.
- After the client is screened, found eligible and agrees to the procedure, confirm that she has not consumed solid foods for six hours and liquids for 4 hours before surgery.
- The operating surgeon must:
 - Review the client's medical history and physical examination results from the medical record to verify eligibility.
 - Verify the client's informed choice and consent.
 - Perform a physical examination to confirm the clinical findings in the medical record.
 - Ensure client changes into hospital clothes.
 - Ask client to empty her bladder before entering the OT.

A full bladder increases the risk of injury to urinary bladder during abdominal entry. Therefore, immediately before the procedure, the client's bladder should be emptied. Routine use of the catheter should be discouraged, since it may raise the risk of infection. A catheter should be used only when client is on the operating table and a full bladder is observed on inspection or palpation of the supra pubic region.

8.1.1.2 Positioning for Surgery

Position the client for surgery in the dorsal supine position. The height of the postpartum uterine fundus should be assessed to confirm that it is close to the umbilicus (Fig. 2).

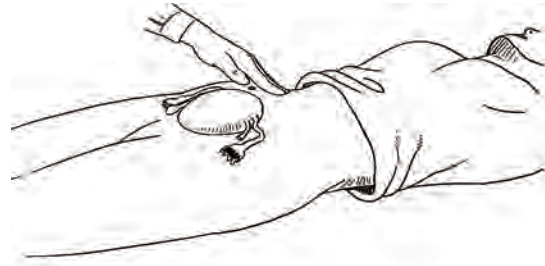


Fig. 2: Positioning the client for sub-umbilical minilap tubectomy and assessing fundal height

8.1.1.3 Abdominal Preparation

The operative site should be prepared immediately pre-operatively, with an antiseptic solution preferably iodophor (Povidone iodine) or chlorhexidine gluconate. Wait for at least two minutes after cleaning with Povidone Iodine (Fig. 3).

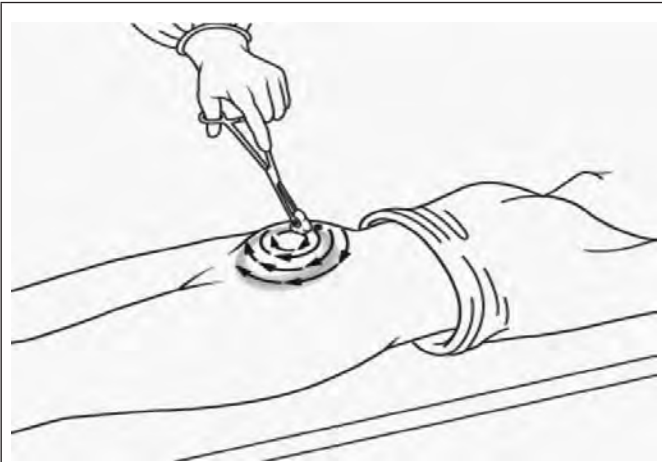


Fig. 3: Preparation of Operative Site

Alcohol preparations should not be applied to the sensitive genitalia.

Iodophor and chlorhexidine are safe for use on mucous membranes and can be used to cleanse the vagina and cervix. Iodophors require 1 to 2 minutes to work which is the time needed for the release of free iodine which inactivates the micro-organisms.

- i. Using an antiseptic-soaked swab on a sponge forceps, clean the umbilicus and throw away the swab. Take a second swab and starting from the sub-umbilical incision area, move progressively out from the umbilicus in circular motion (Fig. 3). Swab at least a 1 to 2 cm circumference progressively in this manner to cover the whole abdomen.

Do not bring the used swab back over a cleaned area which may cause recontamination of the site with local skin bacteria.

- ii. Antiseptic solutions should be liberally applied at least two times on and around the operative site and the site cleansed thoroughly by gentle scrubbing.

- iii. The excess antiseptic solution should not be permitted to drip and gather beneath the client's body as this may cause irritation.
- iv. After preparing the operative site and allowing the antiseptic to dry, the area should be covered with sterile drape sheets. Use either four sheets or a sheet with central window for operating site.

8.1.1.4 Selecting Incision Site

The best area for the subumbilical incision is beneath the umbilicus, just below the upper border of the palpable post-partum uterus. (Fig. 4)

This is because during the immediate postpartum period, the umbilicus is not deep and lies on top of the enlarged postpartum uterine fundus. Additionally, the abdominal wall in this area is also thin and flexible.

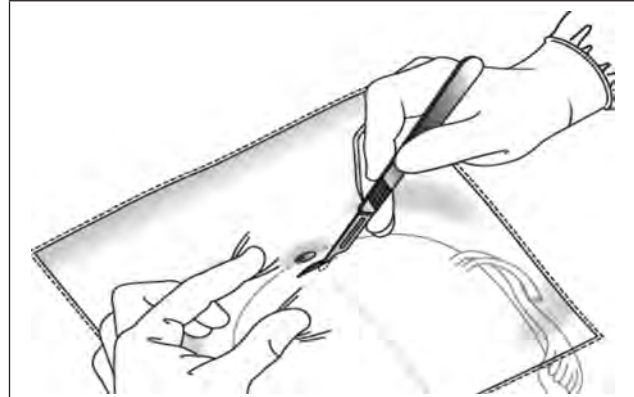


Fig. 4: The Subumbilical Minilaparotomy: Incision site

Following late second trimester abortion, incision for concurrent sterilization should be just at the level of the palpable fundus of the uterus.

8.1.1.5 Local Anaesthesia Infiltration

- i. Using either one 20 ml or two 10 ml syringes loaded with 1% lignocaine, (2% xylocaine supplied should be diluted with equal amount of distilled water or normal saline), raise a small skin wheal at the centre of the incision site and administer about 3-5 ml of the local anesthetic, just under the skin along both sides of the incision line (Fig. 5).

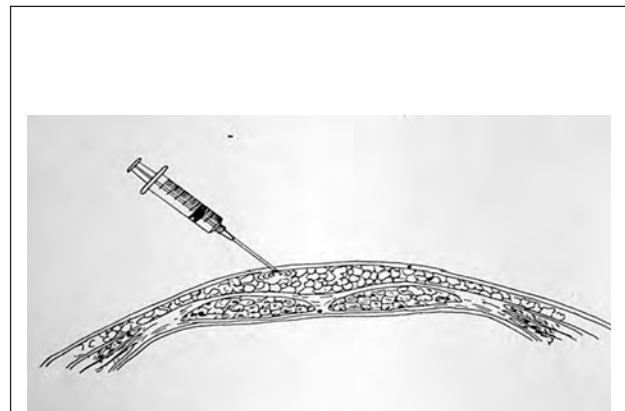
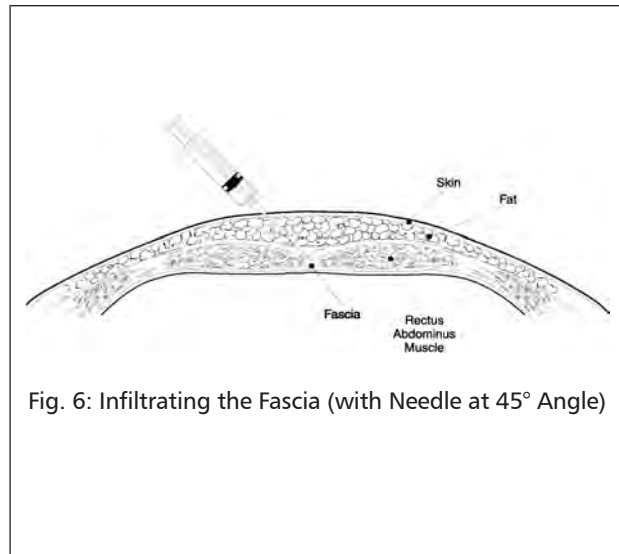
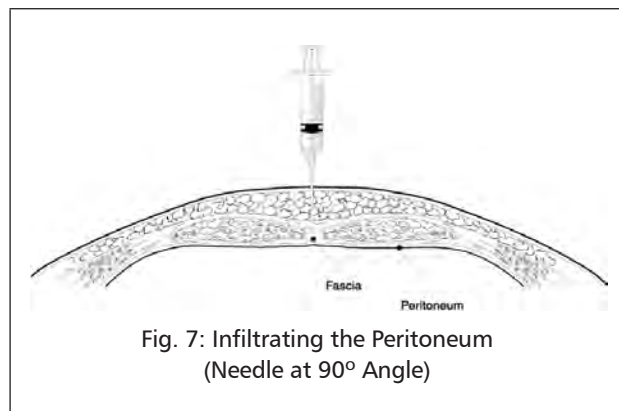


Fig.5 :Infiltrating the Skin (with Needle at 45° Angle)

- ii. Starting at the centre of the incision line and without withdrawing the needle, insert needle into the fascia at a 45° angle, with the needle directed slightly superior to the incision line. Aspirate to ensure the needle is not in a blood vessel, then withdraw the needle slowly while injecting 3–5 ml of lignocaine. Repeat on other side of incision line (Fig. 6).



- iii. Insert the needle straight down through the rectus sheath to the peritoneum till a loss of resistance or give away is felt, aspirate again at this point to be sure that needle is not in a blood vessel and inject 1–2 ml of anaesthetic into the pre-peritoneal tissue (Fig. 7).



- iv. Withdraw the needle and place on a sterile or high-level disinfected tray to prevent accidental needle stick injury. Keep a small amount of lignocaine in the syringe for use on fascia, peritoneum and tubes, if needed.
- v. Massage the skin gently to spread the anaesthetic into the tissues. Wait 2–3 minutes for the anaesthetic to take effect.
- vi. Test the incision site for adequate anaesthesia using tissue forceps. If client can feel a pinch wait 2–3 minutes more and retest the incision site for pain.

8.1.1.6 Abdominal Entry

Make a skin incision approximately 2 – 3 cm long transversely and open it only through the skin . Using a forceps or retractors, bluntly dissect the subcutaneous fat gently and precisely, to minimize tissue trauma and bleeding. Control bleeding from any vessel, if needed. Dissect subcutaneous tissue until the fascia is viewed and exposed with retractors.

In postpartum women the abdominal wall in the sub-umbilical area is very thin. Therefore, dissection must be performed cautiously to avoid injury to underlying structures.

- i. To incise the fascia, place the table in a slight Trendelenburg position (20° or less), then grasp and elevate the fascia with Allis forceps in the midline of the incision at the inferior and superior portion (Fig. 8).

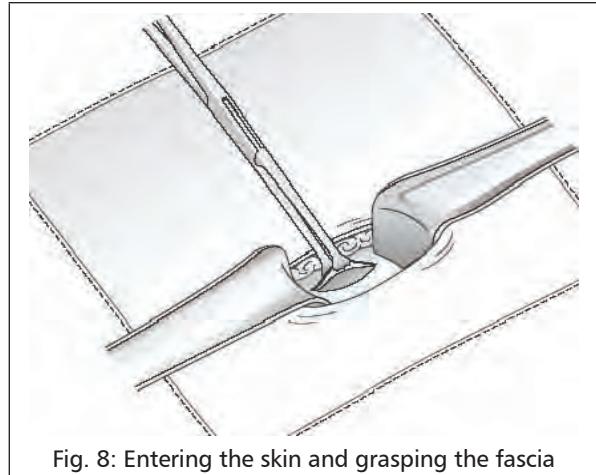


Fig. 8: Entering the skin and grasping the fascia

- ii. Using scissors, incise the fascia transversely (Fig. 9). Extend the fascial opening slightly beyond the skin incision on both sides.
- iii. If the previous step did not provide entry into the abdomen, identify and elevate the peritoneum by grasping it at two points with haemostatic forceps (Fig. 10 (a)).

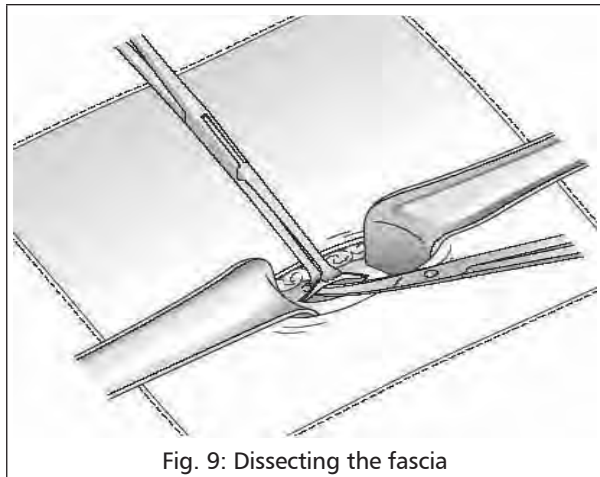


Fig. 9: Dissecting the fascia

To prevent injury to underlying structures avoid using toothed instruments.

Due to diastasis of the rectus there is no intervening rectus muscle under the umbilicus and in postpartum clients the fascia and peritoneum usually adhere, making them one layer. Therefore, layer-by-layer dissection is usually unnecessary since the surgeon generally enters the abdomen immediately after incising the rectus fascia.

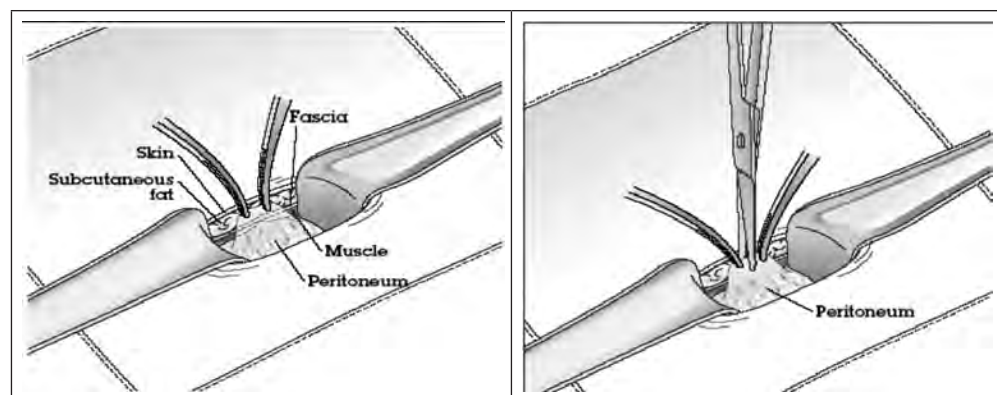


Fig. 10 a & b: Grasping and Opening the Peritoneum

- iv. Once the peritoneum has been elevated, to protect the underlying viscera and structures from injury during incision, check that the bowel, bladder or omentum has not been grasped inadvertently with the peritoneum by palpating the tissue between thumb and finger (Fig. 10 (b)).

Once this has been excluded, make a small opening high in the peritoneum with scissors.

Before incising the peritoneum, look at or feel a fold of the grasped tissue to confirm that it is the translucent peritoneum only and that abdominal contents are not adhering to it.

Remember: In some clients, particularly those who are obese, the pre-peritoneal fat is abundant. This can cause difficulties during opening the peritoneum. Dissect slowly without making unnecessary cuts and try to identify the peritoneum before cutting.

Once entry into the abdominal cavity is confirmed, the surgical assistant should gently place the retractors inside the abdomen to maximally expose the uterus and tubes (Fig. 11).

From this point until the completion of tubal ligation, the surgical assistant must keep the incision open with retractors and must adjust the retractors according to the surgeon's needs.

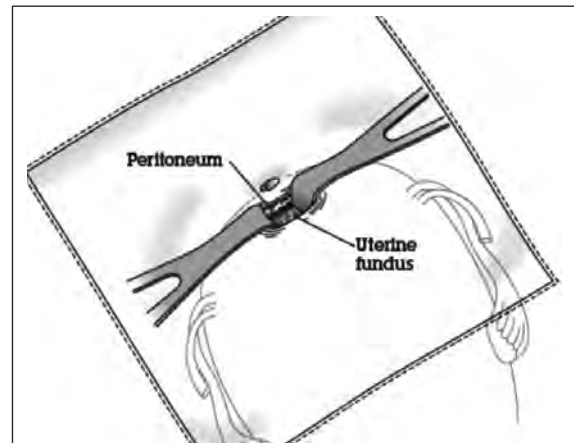


Fig. 11: Using the retractors to expose the uterus and tubes

8.1.1.7 Delivering the Fallopian Tubes

One of the advantages of sub-umbilical access to the fallopian tubes is that the pliable skin allows the surgical assistant to move the incision to the sides, so that the tubes can be accessed where they are located anatomically. Also, the uterus can be manipulated from the outside, allowing the cornual end to be moved to the incision, thus providing easy access and view of the tubes. Using gentle pressure on the abdomen, push the uterus toward the opposite side. With this the tube can be accessed easily while the surgical assistant positions the incision over the fallopian tube by gently moving and pressing down both retractors simultaneously (Fig. 12 (a) & (b)).

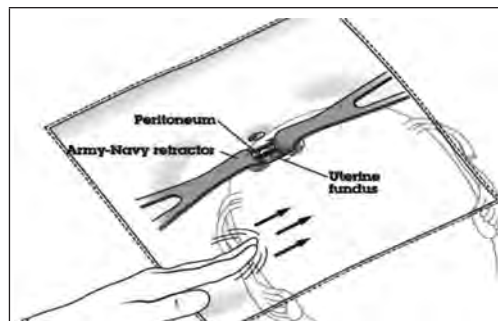


Fig. 12 (a): Pushing the uterus toward the opposite side & the tube being accessed

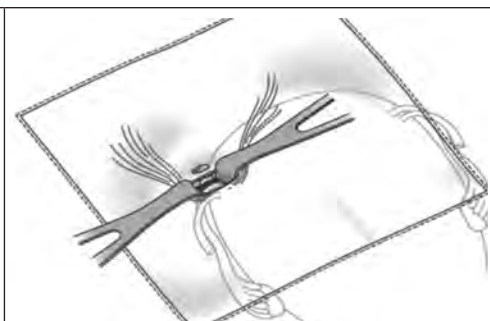


Fig. 12 (b): Moving the incision above over the tube & it being accessed easily

- View of the uterus and tubes may be obscured by the omentum or bowel. If this is the case, ask the client to take a deep breath while you push the bowels gently out of the way using the retractors.
- Since the peritoneum has nerve endings, minimize pulling and tugging so as to prevent pain and vasovagal reactions (e.g. nausea, vomiting and fainting).

Once the tube has been identified, grasp it gently with a Babcock forceps (Fig. 13).

Confirm the identity of the tube by following it to the fimbriated end (using the Babcock forceps with one hand and a non-toothed dissecting forceps with the other) and pulling the tube out gently until the fimbria can be seen (Fig. 14 (a) and (b)).

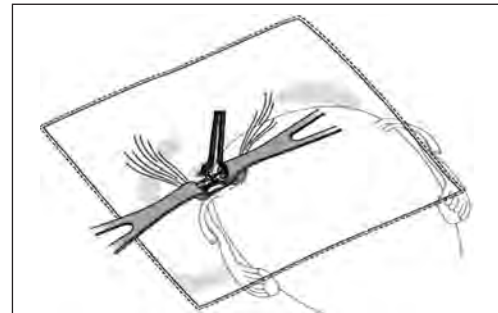


Fig. 13: Grasping and identifying the fallopian tubes

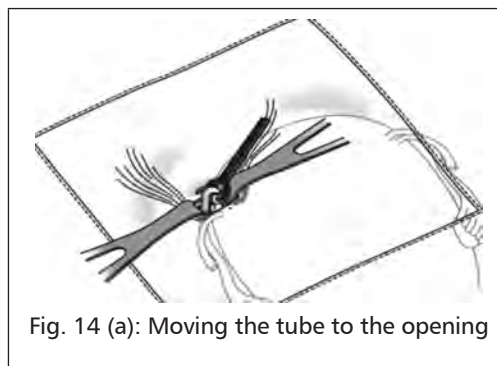


Fig. 14 (a): Moving the tube to the opening

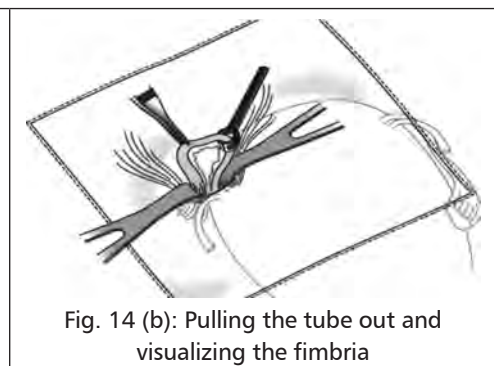


Fig. 14 (b): Pulling the tube out and visualizing the fimbria

Neglecting this important step may lead to ligation of other structures (such as the round ligament) instead of the fallopian tube, which will result in failure of the procedure.

At this point ligate the fallopian tube and excise a small portion of it on one side. Repeat the steps on the other side to ligate the other tube.

8.1.1.8 Excising the Fallopian Tubes

Ligature and excision of the tube using the modified Pomeroy technique is the most commonly used method for minilap tubectomy.

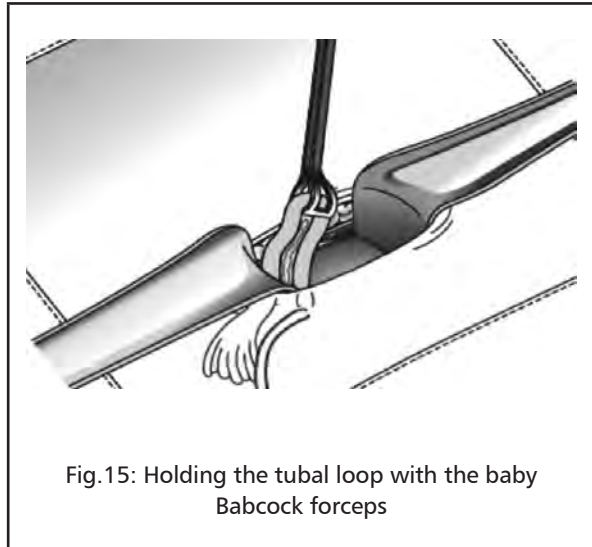
The basic principles of the modified Pomeroy technique are to:

1. Use a Babcock forceps to grasp and elevate a 2-cms loop of fallopian tube at its midsection (the isthmic portion), approximately 2 to 3 cm from the cornual portion of the tube.
2. Form a loop of the fallopian tube at an avascular area of the mesosalpinx.
3. Tie a knot using absorbable suture around the loop to occlude the lumen of the tube.
4. Excise a portion of the loop of the tube above the ligature to separate the two limbs of the loop so that the lumen is not connected.
5. Minimize tissue handling and destruction.

It is important that the tubal loop is large enough so that at least 1 cm of the tube can be excised but enough of the margin of the tube remains so that it does not slip out of the suture.

Position the Babcock forceps over an avascular portion of the mesosalpinx. Keeping the forceps in a vertical position, hold the tubal loop (Fig. 15).

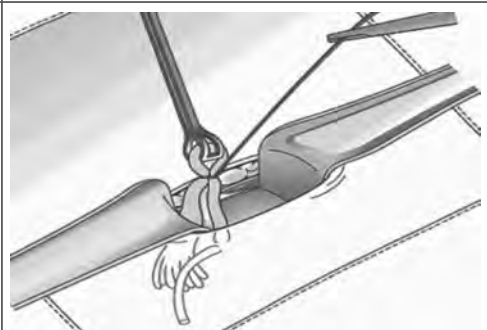
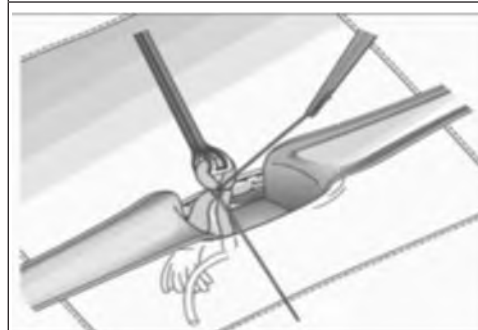
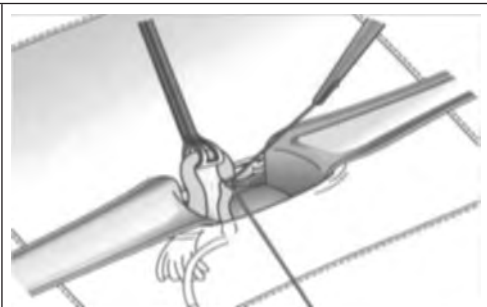
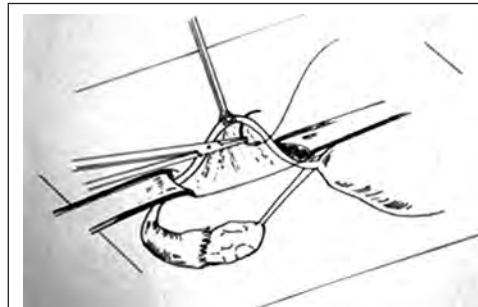
Transfix the tube using a non-tooth surgical dissecting forceps by holding the tube at its distal side and passing a needle with absorbable suture number 0 through the avascular section of the mesosalpinx, taking care to avoid blood vessels injury (Fig. 16 (a)).



Absorbable suture (chromic catgut) is recommended to allow the two cut ends of the tube to withdraw quickly from each other. This reduces the risk of failure as a result of spontaneous recanalization.

Place an anchor tie around the proximal side of the loop of fallopian tube using a square knot (Fig. 16 (b)). Tie the same suture on the other side of the looped tube using a square knot.

8.1.1.8.1 Steps of modified Pomeroy technique



8.1.1.8.2 Cutting the Fallopian Tube

- i. After tying the loop of the fallopian tube as shown in the figures above, use a hemostat to hold the suture knot. While holding the knot, cut off 1 cm of the loop of the fallopian tube above the knot, using the scissors, leaving at least 0.5 cm tubal stumps above the knot. Cut the proximal side first and then the distal side of the tube (Fig. 17 (a) & (b)).

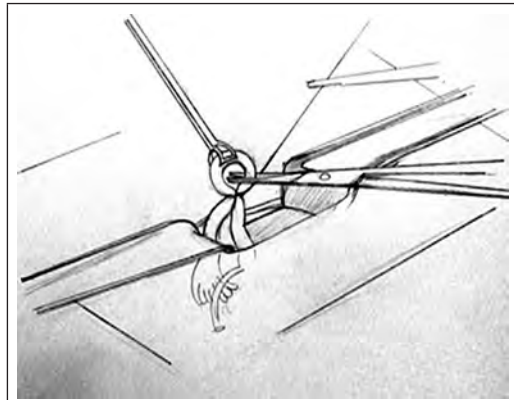


Fig. 17 (a): Cutting the proximal side of the tube

- ii. Check the stumps to ensure that the lumen of the tube in the two stumps is complete and separate from each other and is not connected. Ensuring this reduces the chances of failure of the procedure due to spontaneous recanalization by the stumps coming together later.

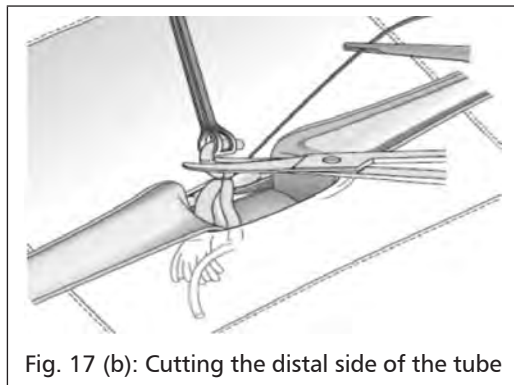


Fig. 17 (b): Cutting the distal side of the tube

- iii. Examine the stumps for bleeding because some blood vessels of the mesosalpinx may get caught in the ligature. Hemostasis must be assured before the tube is released and returned to the abdominal cavity (Fig. 18). Be sure to hold the tube gently and not pull it, as the pressure exerted could mask the bleeding. After examining the cut tubal stump to ensure that hemostasis has been achieved, cut the extra suture length and allow the tube to return into the abdomen by releasing the hemostat.

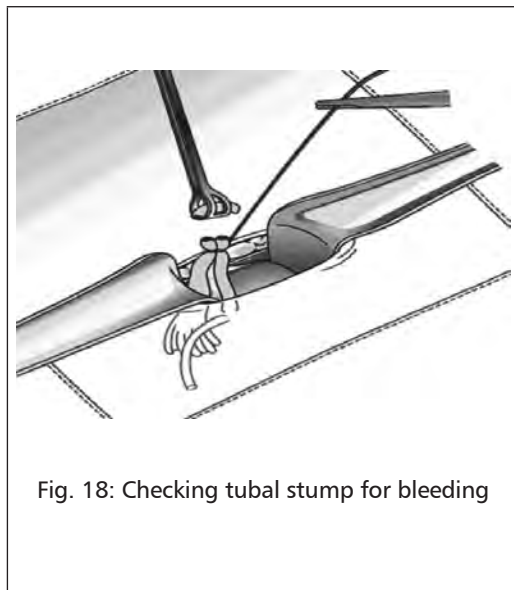


Fig. 18: Checking tubal stump for bleeding

Now access, expose and identify the second fallopian tube as done for the first tube described above and ligate & cut it by the same modified Pomeroy technique.

After both fallopian tubes have been occluded and put back to the abdomen, change the table to its initial horizontal position if the Trendelenburg position was used.

8.1.1.9 Closing the Abdomen

Before closing the abdomen, visually explore the surgical area to exclude the possibility of any injury or bleeding. The abdomen is closed in two layers - the anterior rectus sheath and the skin

Peritoneal closure is not necessary, as evidences has shown that the peritoneum heals by itself in 24 to 48 hours, without adhesions .

While grasping both sides of the anterior rectus sheath, starting at one end of the incision, close the anterior rectus sheath using a continuous (running stitch) suture with the same suture used for ligating the tubes (Fig.19). Two or three stitches may be needed, depending on the length of the incision and the extent of superficial bleeding or the need to control bleeding.

Close the skin with interrupted stitches, using either the same absorbable suture or non-absorbable suture number 0 (Fig. 20). Suture line and surrounding area should be cleaned and dressing applied when dry.

If non-absorbable suture is used to close the skin, client should return for stitch removal.

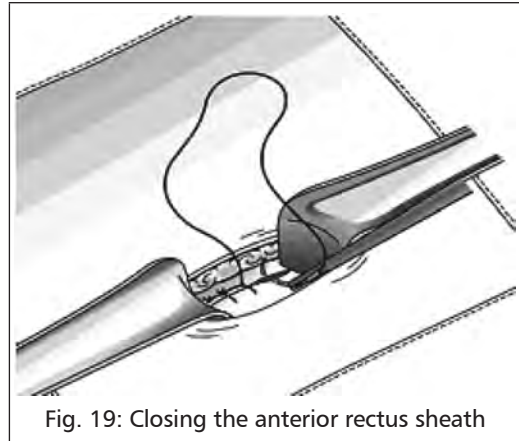


Fig. 19: Closing the anterior rectus sheath

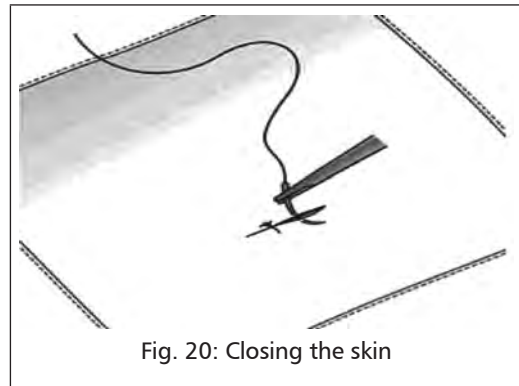


Fig. 20: Closing the skin

Put all the used unwashed instruments in 0.5% chlorine solution for 10 minutes for decontamination. Dispose off all the contaminated waste in the appropriate waste bins (Chapter 7).

8.1.2 Suprapubic Approach (Interval Minilap Tubectomy)

When the uterus is normal or close to normal in size, e.g. in clients any time during their menstrual cycle after ruling out pregnancy or after an uncomplicated first-trimester abortion or with medical termination of pregnancy (MTP), Minilap tubectomy can be performed concurrently provided the client fulfills the medical eligibility criteria. In these conditions the surgeon can approach the tubes from an incision above the pubic bone.

Tubectomy should be done after the next menstrual cycle if abortion was done by medical method.

8.1.2.1 Pre procedure assessment and Client Preparation.

Follow the same principles as described under post-partum sterilization (Section 8.1.1)

- i. A client requesting sterilization in the interval period should have been counselled and assessed before arriving at the facility for the procedure. Additional counselling and assessment of her interest in and suitability for sterilization should again be done at the facility, before the client is transferred from the OPD/ gynaecology ward to the surgical area for sterilization.

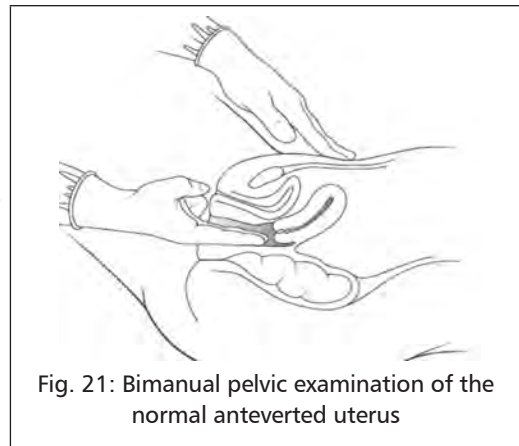


Fig. 21: Bimanual pelvic examination of the normal anteverted uterus

- ii. Another important consideration is the health and age of her living children. If the health of the children is not good or her desire for another child later due to any reason needs to be asked and excluded to prevent regret later since the client's desire for permanent contraception may change if her child dies or suffers from health problem.
- iii. Follow steps of section 8.1.1.1 under post partum sterilization.
- iv. Perform a gentle bimanual pelvic examination on the table before surgical procedure (Fig. 21).

8.1.2.2 Positioning for Surgery

Positioning the client for a suprapubic procedure should involve considerations of both client comfort and ease of access to the surgical area. The most common position used is the dorsal supine position (Fig. 22).

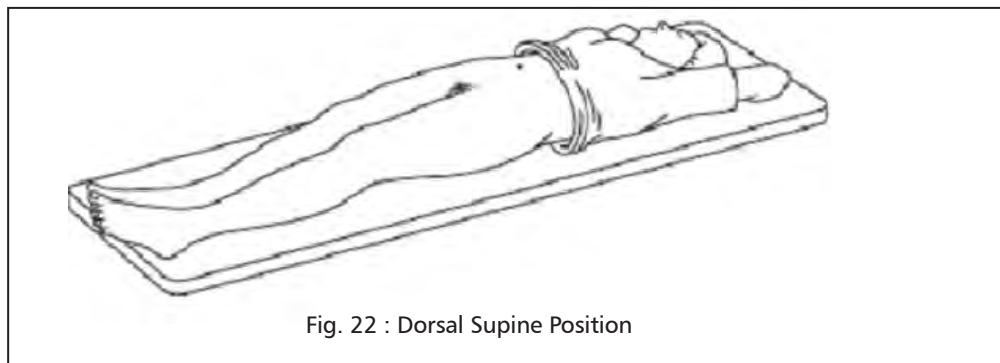


Fig. 22 : Dorsal Supine Position

8.1.2.3 Abdominal Preparation

Cleaning and draping the abdomen is done as described for sub-umbilical minilap tubectomy.

For suprapubic procedures, skin preparation should include the upper part of the pubis and thighs (Fig. 23).

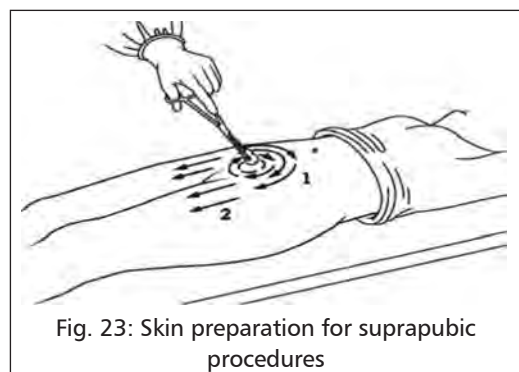
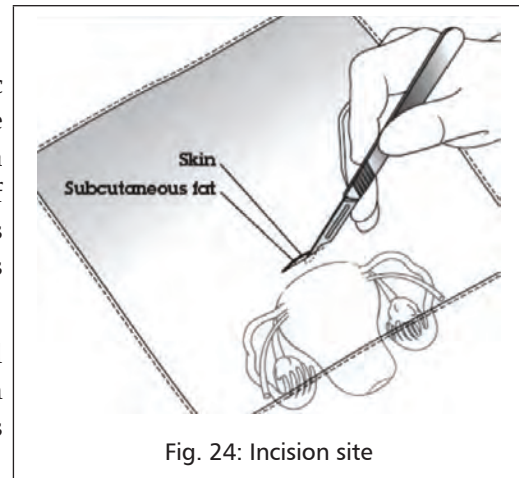


Fig. 23: Skin preparation for suprapubic procedures

8.1.2.4 Selecting Incision Site

The best area for the supra pubic incision is 2 to 3 cm (or 1 inch) above the border of the pubis. In this area an anatomical fold at the union of the pubis and the abdominal wall is generally thinner, which facilitates the opening of the abdomen (Fig. 24).

Although the incision can be vertical or transverse, the transverse incision is most commonly used and is described here.



The transverse incision is commonly used because:

- It heals more rapidly.
- It is associated with less pain during the healing process.
- Incidence of the post procedure wound opening is lower.
- The scar is less visible.

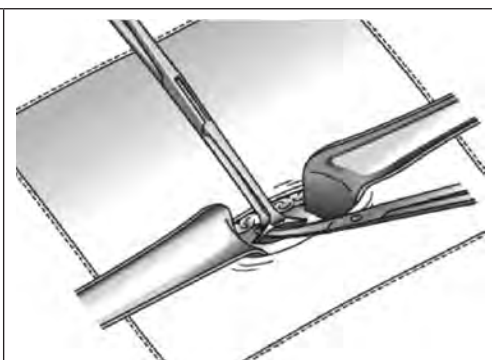
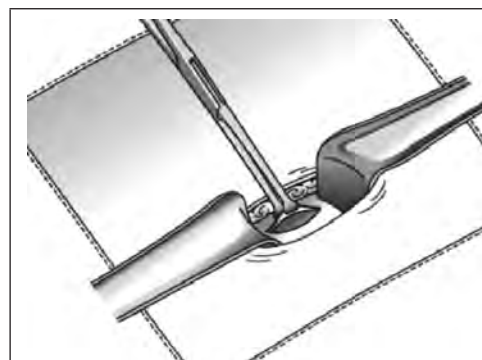
A vertical incision is indicated when there is an existing midline scar.

8.1.2.5 Local Anaesthesia Infiltration

Infiltrate the abdominal wall following the local anaesthesia infiltration technique described earlier in postpartum sterilization.

8.1.2.6 Abdominal Entry

After confirming the effectiveness of anaesthesia by pinching the skin with a toothed dissecting forceps, pull the skin taut to make an incision approximately 2 to 3 cm (maximum of 5 cm) long, centered 2-3 cms above the pubic symphysis. Using a forceps or the small blade of the retractor (always working in the midline) bluntly dissect the subcutaneous fat gently and precisely to minimize tissue trauma and bleeding (Fig. 25(a)).



Use of sharp dissection increases the risk for more bleeding. Thus, sharp dissection should be avoided.

Dissect subcutaneous tissue until the anterior rectus sheath is viewed and exposed (Fig. 25(a) and (b)). Incise the anterior rectus sheath transversely, using a scalpel at the center of the incision; Incise the full thickness of the anterior rectus sheath until the rectus muscle can be seen on both sides. With the Allis forceps, grasp the rectus sheath in the midline of the incision, at the inferior and superior portion and cut transversely with scissors (Fig. 26). Extend the opening of sheath on both sides so that it is slightly larger than or about the same length as the skin incision.

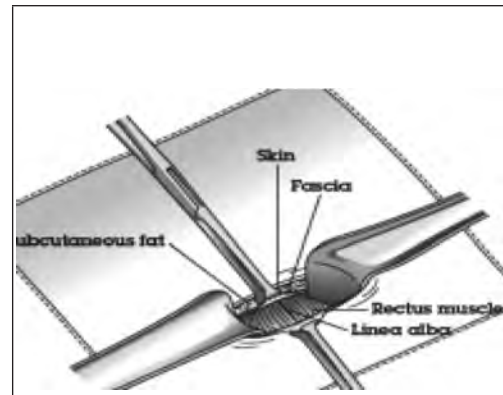


Fig. 26: Viewing the muscle layers

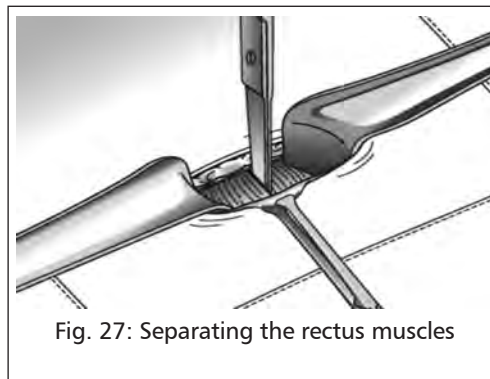


Fig. 27: Separating the rectus muscles

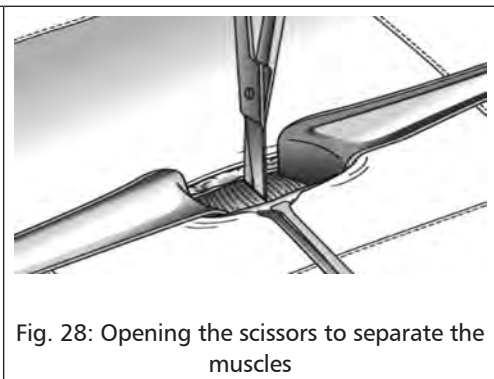


Fig. 28: Opening the scissors to separate the muscles

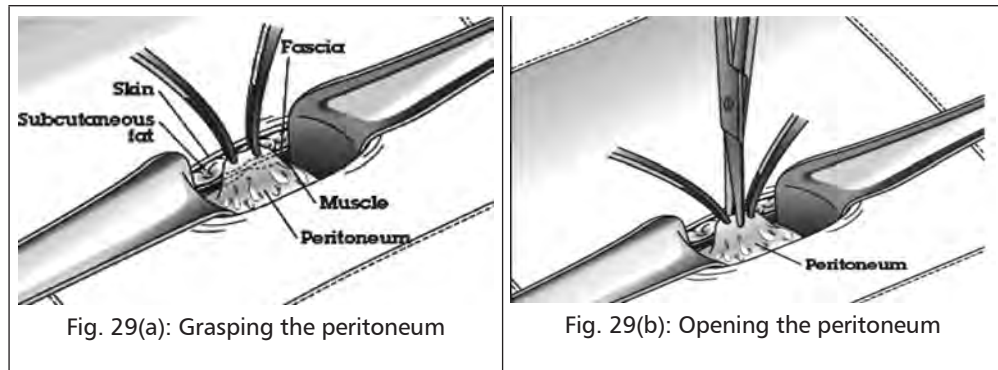
Have the surgical assistant place the retractors under the rectus sheath and adjust them to expose the linea alba (the midline raphe of the rectus muscle). Retractors should be pulled horizontally to keep the incision open (Fig. 27). At this time one of the Allis forceps can be removed.

Bluntly separate the rectus muscles vertically at the linea alba entering through the linea alba with a hemostat and bluntly dissect the preperitoneal fat needed to expose the peritoneum (Fig. 28).

Entry into the abdominal cavity is safer when the operating table is placed in the Trendelenburg position (with the head of the table tilted downward 20° or less). This position shifts the bowels out of the operative site thus minimizing the risk of injury.

To minimize the amount of time the client spends in this position, a member of the surgical team should place the client in this position just before incising the peritoneum and should return her to the horizontal position as soon as tubal occlusion is completed.

Identify the peritoneum and elevate it by grasping it at two points with hemostats. Avoid using toothed instruments to prevent injury to underlying structures.



Once the peritoneum has been elevated to protect the underlying viscera and structures from injury during incision, check that the bowel, bladder or omentum has not been grasped inadvertently with the peritoneum by palpating the tissue between thumb and finger.

If any difficulty is experienced in opening the peritoneum, it may be preferable to incise superiorly (away from the pubic bone) to avoid the bladder.

Stay directly under the incision in the midline.

The surgical assistant must keep the retractors horizontal (i.e. parallel to the abdomen) and must simultaneously pull them up. This ensures better visibility of the abdominal cavity and minimizes the possibility of trauma to the inner side of the abdominal wall.

8.1.2.7 Locating the Fallopian Tubes

Accessing and delivering the fallopian tubes requires adjustment of abdominal retractors by the assistant to push the bowel loops away so as to visualize the uterine fundus. This allows the surgeon to access the fallopian tubes without difficulty.

Since the fallopian tubes have a peritoneal layer that contains nerve endings, clients often feel pain when the fallopian tubes are grasped.

To prevent pain spray 1 to 2 ml of 1% lignocaine without adrenaline on each fallopian tube through the incision, which the surgical assistant is holding open with retractors. Wait 30 to 60 seconds for the anesthetic to take effect.

In case of difficulty one should elevate the uterus per-vagina using uterine elevator.

If the client is obese and the fundus cannot be reached easily extend the incision sideways 1 cm more.

8.1.2.8 Steps of Delivery of Fallopian Tubes

- i. Insert index finger/index and middle finger of one hand inside the incision and feel for the fundus of the uterus.
- ii. Slide the finger/s along the fundus laterally up to the cornu and then posteriorly and feel for the tube of one side.
- iii. Trace the tube laterally with finger/s, hook it, lift the tube and roll it between the fingers to confirm that it is the fallopian tube (the fallopian tube is soft and mobile unlike the round ligament which is firm and like a cord).

- iv. Holding the tube between the two fingers or hooking over one finger gently bring it out of the abdominal incision.
- v. Gently grasp the mid-portion of the tube with the Babcock's forceps.
- vi. Identify the fallopian tube by tracing the tube till the fimbrial end laterally.
- vii. Ligation is performed 2 to 3 cm from the cornu.

Alternatively one can use Uterine Elevator to manoeuvre the uterus by moving towards right or left and use Tubal Hook to lift the fallopian tube without putting finger inside the peritoneal cavity and bring that out by holding with Babcock tissue forceps. The tube is subsequently identified by checking the fimbrial end using either non-tooth surgical dissecting forceps or Babcock tissue forceps.

8.1.2.9 Excising the Fallopian Tubes and Closing the abdomen

The procedure and steps to be followed are already described under Postpartum sterilization and need to be followed for the supra-pubic approach also upto closing the skin incision, dressing the wound (Fig. 30).

Refer to Section 8.1.1.8 and 8.1.1.8.2 for details.

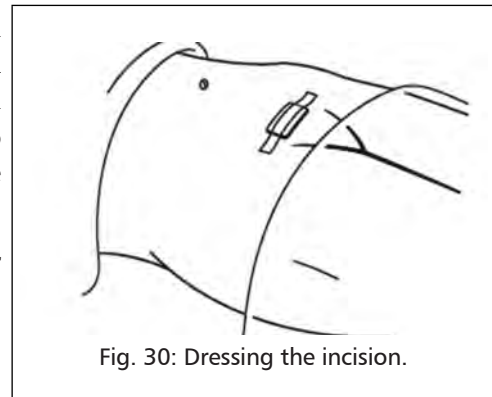


Fig. 30: Dressing the incision.

Confirm that the tube and not the round ligament has been ligated by identifying the lumen in the portion of the tube which has been removed.

The Minilap tubectomy operation takes an average of 20 to 30 minutes.

8.2 Post-Operative Steps

- i. Remove the uterine elevator/manipulator and vulsellum (if not done earlier) and place in 0.5% chlorine solution for decontamination.
- ii. Dispose off needle and syringe by placing in a puncture-proof container.
- iii. Place instruments in 0.5% chlorine solution for decontamination and soak for 10 minutes.
- iv. Dispose off waste materials according to infection prevention guidelines.
- v. Briefly immerse gloved hands in chlorine solution. If disposing off gloves, place in leak proof container or plastic bag. If reusing gloves, soak gloves in chlorine solution for 10 minutes.
- vi. Wash hands thoroughly with soap and water and dry with a clean cloth or air dry.
- vii. Ensure that the client is monitored at regular intervals and that vital signs are taken before wheeling the client out of OT.
- viii. Ensure that the client is safely transferred to the post-operative (recovery) area.
- ix. Determine that the client is ready for discharge after 4-6 hours. See details in chapter 10.

Surgical Procedure -Laparoscopic Tubal Occlusion

Laparoscopic tubal occlusion is performed by an instrument called laparoscope. This procedure is done during the 'interval' phase or after first trimester abortions after excluding abnormal bleeding and infection. Proper client screening for appropriateness of the method to her physical condition is essential.

9.1 Surgical Approaches

9.1.1 Client Assessment

Confirm that the client satisfies the Medical Eligibility Criteria for Laparoscopic Tubal Occlusion as outlined in Chapter 4. The client must meet the acceptable criteria (Category A under MEC) if surgery is to be carried out in an outpatient facility. The final decision to offer laparoscopic tubal occlusion to the client is the responsibility of the operating doctor who should conduct a final medical assessment immediately before surgery.

9.1.2 Preparation

All the instruments needed to perform laparoscopic tubal occlusion should be made available and in working condition. A list of equipment and instruments for laparoscopic tubal occlusion is given in Annexure 7. In addition, check that all instruments and other items have been sterilized or high-level disinfected.

9.1.3 Steps for Laparoscopic Tubal Occlusion

Before starting the procedure, ensure that the client has:

- i. Given informed, voluntary consent for the procedure and signed the consent form.
- ii. Emptied her bladder (voided).
- iii. Been provided with a brief overview of the procedure to be performed under local anaesthesia.
- iv. Been counselled that she may feel a little pain/pressure, pulling or cramping during some of the steps of the procedure.
- v. Been asked to inform the doctor if she feels any discomfort at any time.

9.1.3.1 Pre-Operative Steps

- i. Position the client flat on her back on the operating table and ensure that her bladder is empty.
- ii. Determine that sterile or high-level disinfected laparoscopic instruments, fiber-optic cable and insufflator tubing are present and working.
- iii. Ensure that emergency tray is present and all emergency equipment are in working order. Check that insufflator apparatus and light source units are working.
- iv. Ensure that vital signs of the client are observed and recorded.

- v. Give IV/ IM pre medication (initial or repeat if needed up to maximum dose based on client's weight), if needed.
- vi. Wash hands thoroughly with soap and water and air dry or dry them with a clean cloth.
- vii. Put new examination/sterile gloves on both hands.
- viii. Ensure that client is in a lithotomy position.
- ix. Perform a gentle bimanual pelvic examination to assess uterine size, determine position, mobility and shape of the uterus and whether there is any pelvic abnormality (Fig. 1).

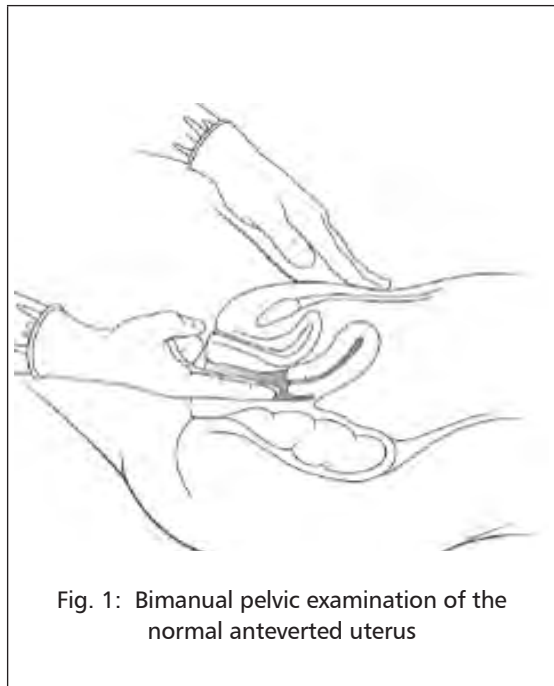


Fig. 1: Bimanual pelvic examination of the normal anteverted uterus

- x. Perform surgical scrub and put on sterile surgical gown and sterile disposable gloves on both hands.
- xi. Apply antiseptic solution two times to the incision area (Sub-umbilical). Use a sterile or high-level disinfected sponge forceps to hold a cotton or gauze swab soaked with antiseptic.
- xii. Begin by wiping at the incision site and move outward in a circular motion for 15 to 20 cm (6 to 8 inches or as for any abdominal procedure) and allow to air dry (about 2 minutes) before proceeding.
- xiii. Drape the client with a sterile surgical drape.
- xiv. Check functioning of Laparoscope (both lens & ring applicator), trocar assembly unit and also Veress needle.

9.1.4 Local Anaesthesia

- i. Raise a small skin wheal at the center of the incision site using 1% lignocaine in a 10 or 20 ml sterile or sterile syringe. The maximum dose should be 3 mg/kg body weight (Fig. 2).
- ii. Starting at the center of the incision line insert needle into skin and infiltrate 1 cc local anaesthesia solution then proceed in to fascia at a 45 degree angle with the needle slightly caudal to the incision line. Aspirate to be sure the needle is not in a blood vessel. Then withdraw the needle slowly while injecting 3-5 ml of lignocaine.

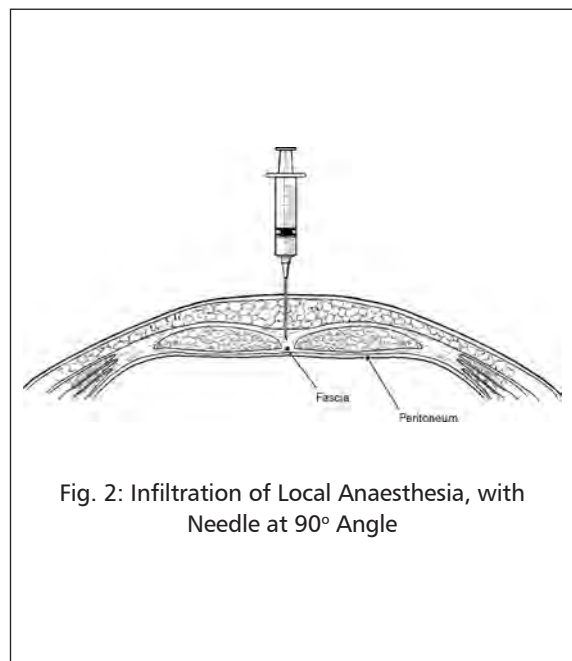


Fig. 2: Infiltration of Local Anaesthesia, with Needle at 90° Angle

- iii. Massage the skin to spread the anaesthetic within the tissues. Wait for 2-3 minutes and then test the incision site with the tissue forceps to test for adequacy of anaesthesia. If the client feels pain, wait 2 or 3 minutes more and retest the incision site and inject 2 ml of 1% lignocaine if necessary.

9.1.5 Creating Pneumoperitoneum

- i. Place client in a head down (Trendelenburg) position of not more than 20 degrees.
- ii. Make a small incision at the inferior umbilical margin (Fig. 3). The size of the skin incision should not be more than the diameter of the trocar.
- iii. Gently lift the infraumbilical part of abdominal wall using the thumb and the forefingers so as to lift the abdominal wall away from the intestines.

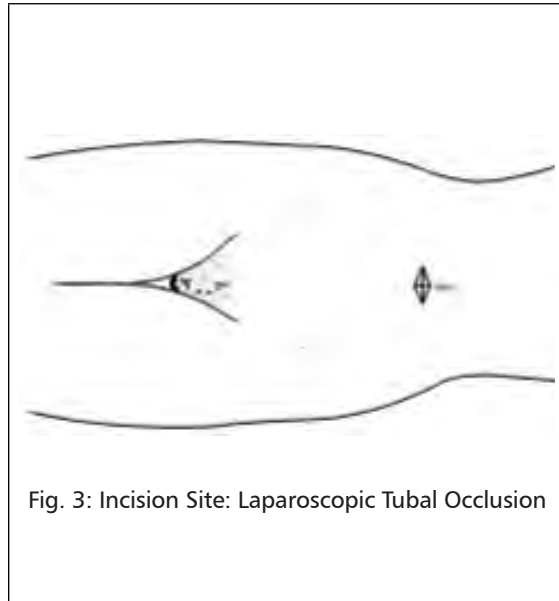


Fig. 3: Incision Site: Laparoscopic Tubal Occlusion

- iv. Grasp the shaft of the Veress needle and insert it at a 45 degree caudal angle to the abdominal wall (Fig 4). Two distinct 'gives' (feeling of release from a slight resistance) will be felt as the fascia is penetrated and the peritoneum is entered.
- v. Check for correct abdominal entry by placing a drop of the anaesthetic on the Veress needle Luer Lock opening and observing its ingress when the abdominal wall is lifted manually. (Alternatively, use the pressure gauge of the insufflator apparatus to check for negative intra-abdominal pressure).
- vi. Connect the sterile or high-level disinfected insufflator tubing to the Veress needle stop cock (Fig. 5). Ask the assistant to connect the other end to the insufflator unit.
- vii. Insufflation of abdomen should be done preferably with carbon dioxide. Slow insufflations with graded insufflator and gradual de-sufflation should be done. Use the high flow switch to introduce carbon dioxide at the rate of 1 litre per minute. Intra-abdominal pressure should not exceed 15 mm of mercury (in field situations where availability of carbon dioxide is an issue, air may be used).
- viii. Percuss the hypogastric area and listen for a drum-like sound, which will indicate pneumoperitoneum.

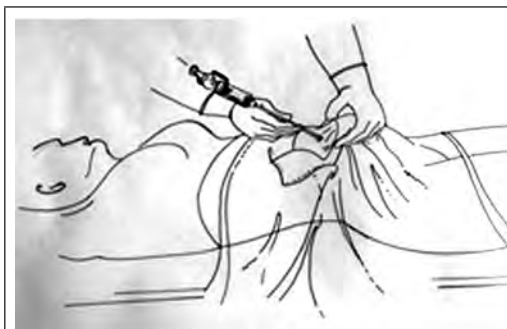


Fig. 4: Insertion of Veress needle

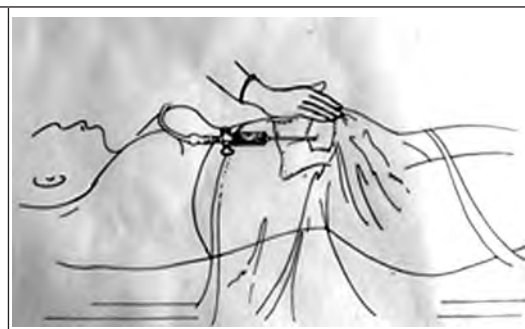


Fig. 5: Creating pneumoperitoneum

- ix. Remove the Veress needle after insufflating 1.5 to 2.0 litres of carbon dioxide.
- x. Tell assistant to load Falope rings on the ring applicator of the Laparoscope.

Alternatively pneumoperitoneum can be created by directly introducing the trocar, if the surgeon is experienced and confident.

See Annexure 17 for details of Laparoscope.

9.1.6 Falope Ring Loading

- i. Lubricate falope ring with sterile water or remaining local anaesthetic but they should never be dipped in spirit or alcohol. Place the falope ring dilator onto the inner tube of the Laparoscope.
- ii. Firmly hold the Laparoscope at the middle area. Shift the two ring switch to position no.1 when applying the first ring (position no. 2 when loading the second ring). Place the end of the Falope ring guide against the tip of the dilator and in a steady motion, slowly push the band along the dilator until it rests on the inner tube. Remove guide and dilator.

Repeat the first two steps to load the second ring. Remember to move the switch to the No. 2 position. (Refer to Annexure 17 for falope ring loading technique).

Do not leave the Falope rings into the ring dilator for more than 5 minutes.

9.1.7 Abdominal Entry

- i. Recheck the trumpet valve and rubber seal of the trocar sleeve to ensure air tightness. Assemble the trocar unit by inserting the obturator into the trocar sleeve.
- ii. Manually grasp and raise the anterior abdominal wall directly beneath the umbilicus.
- iii. Hold the fully assembled trocar on the palm of the hand, making sure that the thenar eminence is resting on the superior end of the obturator.
- iv. Direct the tip of the obturator to an imaginary point where the pouch of Douglas is located at an angle of 60 to 70 degree. Apply downward and twisting force to traverse the fascia and peritoneum directed towards the pelvic cavity. Stop after the second "give" is felt (Fig. 6).
- v. Slightly retract obturator and advance trocar sleeve 1 to 2 cm into the abdominal cavity. Completely remove obturator.
- vi. Connect insufflator tubing to the trocar stop cock and open. Insufflate air as needed.
- vii. Connect the fiber-optic light cable to the Laparoscope and ask the assistant to switch on the light source.
- viii. Hold trocar trumpet valve mechanism between middle finger and thenar eminence of the hand in palms down position.
- ix. Hold the hand grip assembly of the Laparoscope using the thumb, middle and ring fingers of the hand. Allow the index finger to remain free.
- x. Insert the tip of the Laparoscope into the trocar sleeve before opening the trumpet valve.
- xi. Insert the Laparoscope slowly under direct vision. Maneuver the Laparoscope-trocar unit toward the pelvic cavity (Fig. 7).

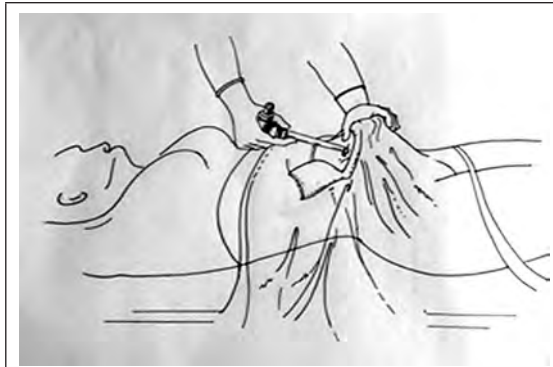


Fig. 6: Inserting Trocher with Cannula in Abdomen

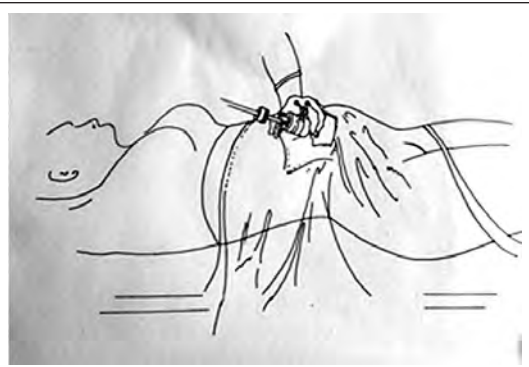


Fig. 7: Inserting Laparoscope inside Trochar

- xii. Inspect and identify pelvic cavity structures.
- xiii. In case of difficulty in viewing of pelvic structures elevate the uterus per vagina preferably using the uterine elevator and by depressing handle of the uterine elevator/ manipulator in a downward direction.

9.1.8 Laparoscope Guided Tubal Occlusion

- i. Locate and verify the fallopian tube by visually identifying anatomical landmarks such as the cornu and fimbrial end.
- ii. Extend forceps tongs fully by pushing the trigger operating slide away from the hand grip.
- iii. Rotate the prong in order to position it at right angle to the axis of fallopian tube, ensuring that the slightly longer limb of the prong is below the tube. Also reconfirm that correct structure has been picked up (Fig. 8 and 9(a)).

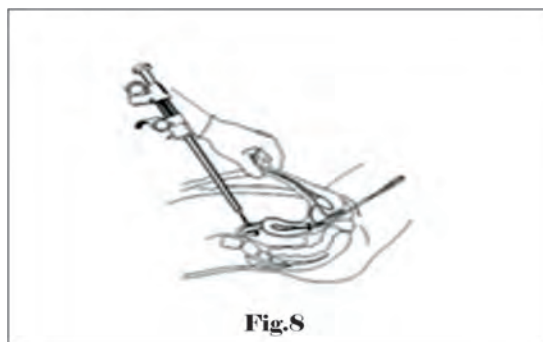


Fig.8

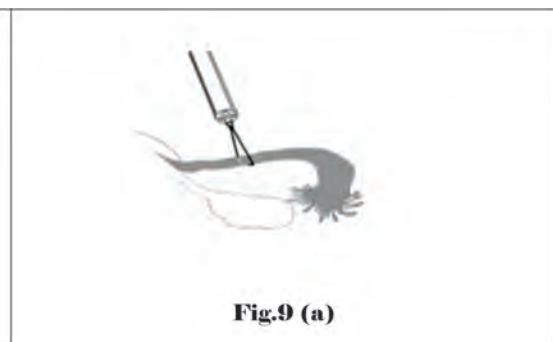
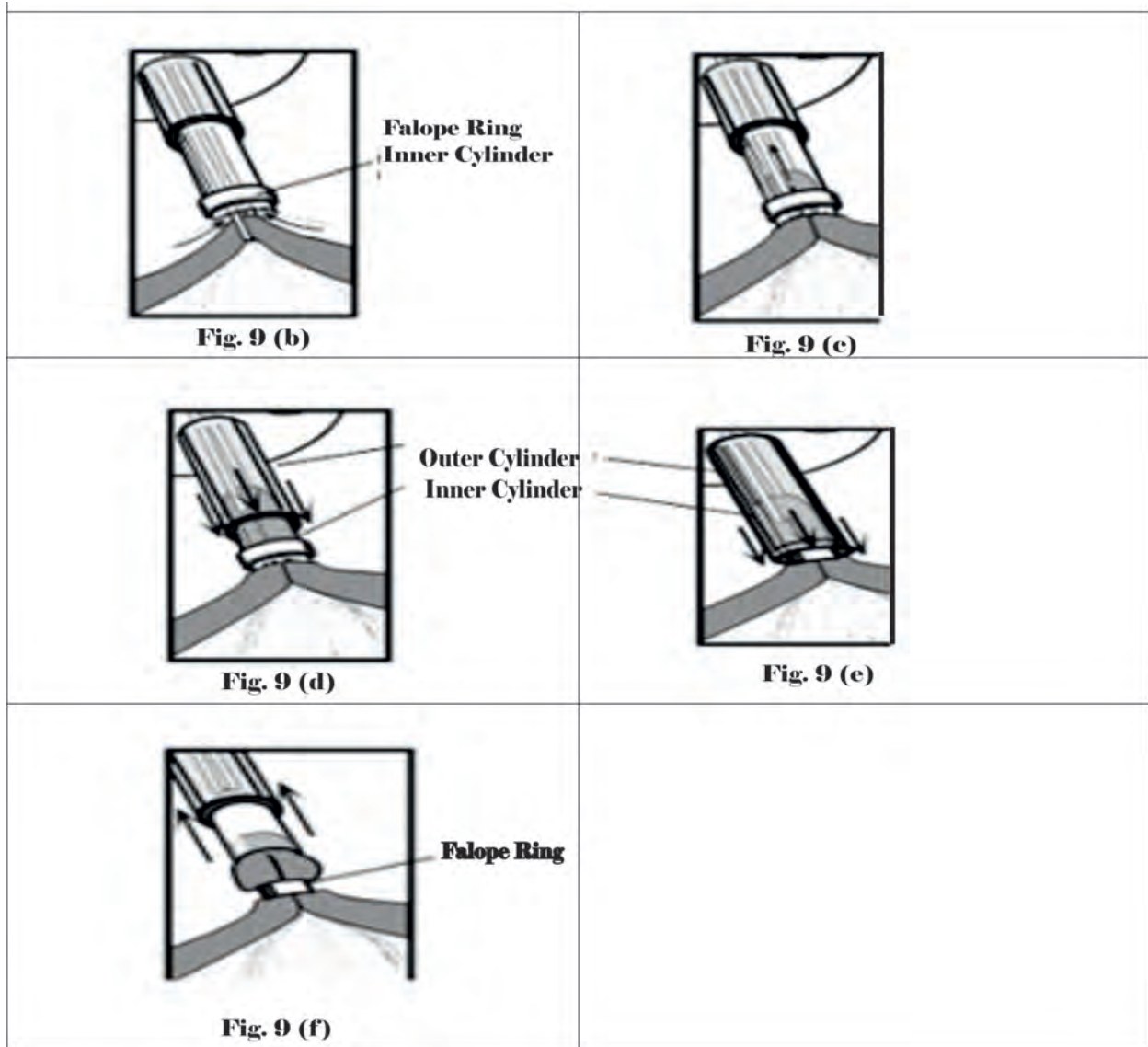
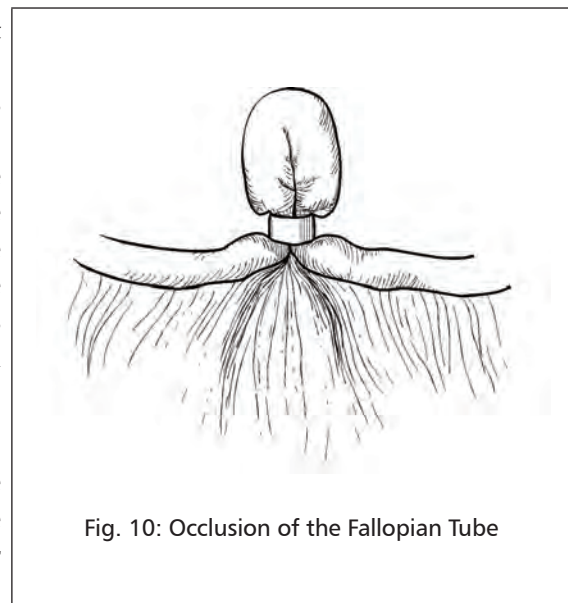


Fig.9 (a)

- iv. Place the posterior limb of the prong under the inferior aspect of the tube about 4 cm away from the cornu. Slightly lift it toward the anterior abdominal wall to allow excess mesosalpinx to fall off. Slowly retract the tongs by pulling the trigger operating slide toward the hand grip. Move the Laparoscope forward during tong retraction to reduce risk of lacerating or injuring the tube. Continue retracting until spring tension is felt.



- v. Using the index finger, check that the ring adaptor is in position no.1 (Fig. 9(a) to 9(e)) without taking eyes off from the laparoscope eyepiece. Apply additional pressure to the operating slide to overcome the spring tension and to release the Falope ring. Slowly push away the operating slide to extend the forceps tongs and release the occluded fallopian tube.
- vi. Inspect for adequacy of occlusion, i.e. a 2 cm loop of tube above the Falope ring showing the acute angle in mesosalpinx (Fig. 10 & 11) and for any active bleeding.



Completely retract forceps tongs prior to inspection.

Always retract the tongs of the Ring Applicator into its sleeve after releasing the tubal loop.

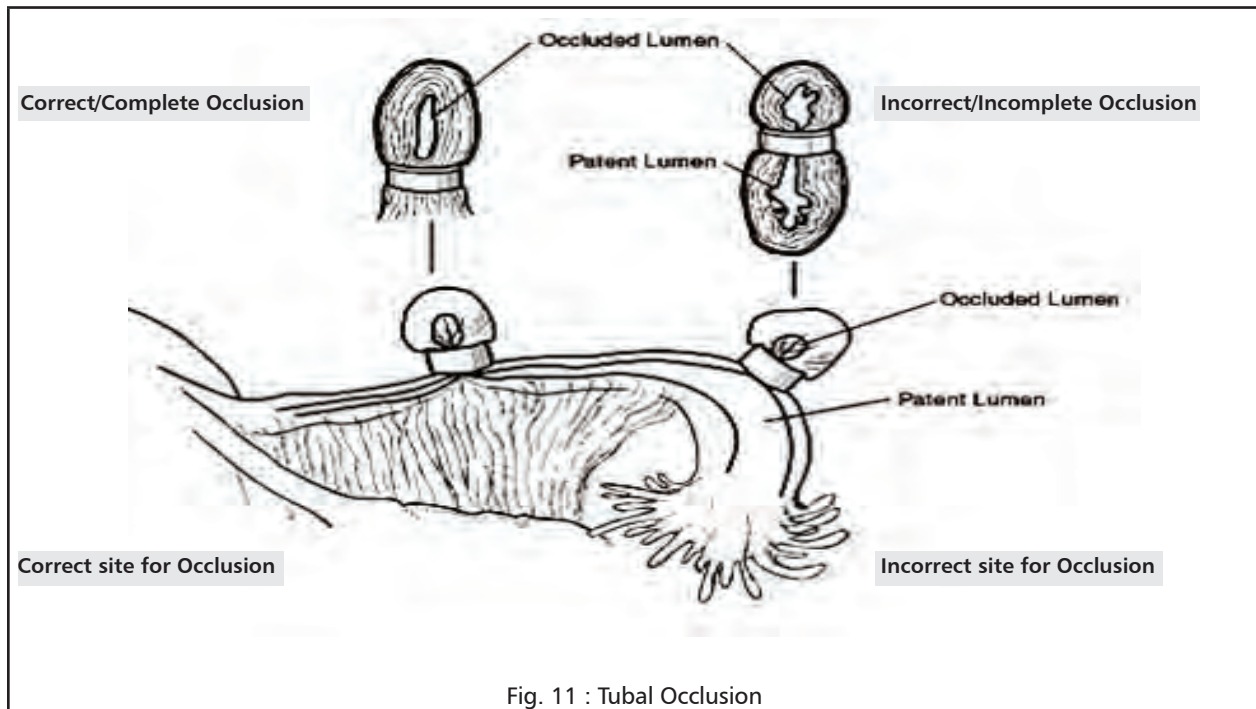


Fig. 11 : Tubal Occlusion

- vii. Locate and verify the other tube.
- viii. Place two ring adaptor in no.2 position. Repeat steps vi to ix to occlude the other tube.
- ix. Inspect pelvic cavity for bleeding and other organ injuries. Keep tongs retractor after occlusion of the tubes.
- x. Bring the operating table from Trendelenburg position to horizontal position.
- xi. Remove Laparoscope from the abdominal cavity under direct vision and disconnect external light source. Keep open the trocar trumpet valve to enable intra-abdominal gas escape slowly.
- xii. Replace the obturator inside the trochar halfway and remove both of them together from the abdominal cavity.
- xiii. Close incision with a single, simple stitch using absorbable or non-absorbable suture material.
- xiv. Clean the wound and surrounding area and apply a small dressing.

9.2 Post-Operative Steps

The post-procedure steps will be same as is given in section 8.2 of Chapter 8 (Minilap tubectomy)

Post-Operative Recovery, Discharge and Follow-up

10.1 Background

Monitoring the client after surgery is a very important function because it is during this period that any effects of surgical trauma or other post-operative complications become apparent. Although nurses or other staff members will carry out the tasks related to post-operative recovery and discharge, the operating surgeon is ultimately responsible for the quality of postoperative care.

Before discharge, a staff member should give the client post-operative instructions orally and in writing. The client should be asked to repeat these instructions to ensure that she has understood them and she should be given a follow-up appointment. The operating surgeon or medical officer assesses that she is ready for discharge.

10.2 Post-Operative Care

In the post-operative period, the client should be kept under observation by nurse/doctor. Following are the tasks to be carried out in the post-operative period:

- Receive the client from the operating theatre; review the client record.
- Make the client as comfortable as possible (handle the woman gently when moving her).
- Make sure that an over sedated client is never left unattended.
- Monitor the client's vital signs - check blood pressure, respiration and pulse every 15 minutes for one hour following surgery or till the patient is stable and awake. Thereafter, check vitals every one hour until four hours after surgery. Record vital signs in the client record each time they are checked.
- Check the surgical dressing for oozing or bleeding.
- For 'interval' cases, check for vaginal bleeding other than menstruation. If the client is bleeding, the surgeon should check for possible injury to the cervix that may have been caused by the vulsellum
- Administer drugs or treatment for symptoms according to the doctor's orders.
- Provide water, tea and fruit juices when the client feels comfortable.
- Complete the client record form.

10.2.1 Determining When the Client is Ready for Discharge

10.2.1.1 The Client may be Discharged when the following Conditions are met

- After at least 4 hours of procedure, when the vital signs are stable and the client is fully awake, has passed urine and can talk, drink and walk.
- The client has been seen and evaluated by the health care provider. Whenever necessary the client should be kept overnight at the facility.
- The client is accompanied by a responsible adult, while returning home.
- Analgesics, antibiotics and other medicines may be provided and/or prescribed as required.

- After sedation has worn off and before discharge, a trained staff member should repeat the postoperative instructions to the client or designated accompanying person. A written copy of the postoperative instructions should also be provided.

The following are indications that show a client is not ready for discharge and need to be kept overnight at the health care facility:

- i. She is unable to retain fluids (vomiting).
- ii. She is not ready to ambulate (unsteady when standing).
- iii. She shows signs of possible abdominal bleeding.
- iv. She shows signs of hypovolemia. She is unable to void or is dizzy or has an increase in pulse rate when moving from lying down to a sitting up or standing position. (An increase in pulse rate when moving from a lying to sitting position with legs dangling is a more sensitive indicator of hypovolemia than is low blood pressure).
- v. She shows incomplete or late recovery from anaesthesia
- vi. A responsible adult is not available to accompany or transport her home.
- vii. When it's too late in the evening to leave for home.

WARNING SIGNS FOLLOWING FEMALE STERILIZATION:

Client should return to the clinic or contact the clinic or doctor immediately if she develops any of the following:

- Dizziness with fainting
- Persistent or increasing abdominal pain
- Bleeding or fluid oozing from the incision
- Uterine cramps
- Incision discomfort
- Abdominal discomfort
- Light vaginal bleeding
- Pain in left shoulder
- Unable to pass urine

10.2.1.2 At the time of Discharge

Both written and verbal post-operative instructions must be provided.

The client should:

- i. Rest for the remainder of the day and resume light work after 48 hours.
- ii. Should avoid heavy weight lifting or putting tension on the incision for 1 week.
- iii. Be able to return to full activities within 1 week after surgery.
- iv. Use medications as instructed.
- v. Take antibiotics only if advised.
- vi. Resume normal diet as soon as possible.

- vii. Keep the incision area clean and dry.
- viii. Not disturb or open the dressing.
- ix. Bathe after 24 hours following the surgery but if the dressing becomes wet, it should be changed so that the incision area is kept dry until the stitches are removed.
- x. Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding or pus discharge from the incision, not passed urine, not passed flatus and feels bloating of abdomen.
- xi. Return to the clinic, if there is any missed period/suspected pregnancy within two weeks of missed period for confirmation of pregnancy.
- xii. Be instructed to go for routine and emergency follow-up.
- xiii. Establish contact with health worker within 48 hours.
- xiv. Return for a follow-up visit on the 7th day of surgery or as early as possible after 7 days.
- xv. Have 2nd follow-up after 1 month or if menses do not return.

In case of interval sterilization (Minilap and Laparoscopic) client may have sex one week after sterilization or whenever she feels comfortable thereafter.

In case of post-partum sterilization (after caesarian or normal delivery) client may have sex two weeks after sterilization or whenever she feels comfortable.

10.2.3 Before Discharging the Client

The staff should assure the following:

- i. Client understands the signs of potential problems (warning signs).
- ii. Client understands that she should return to the clinic immediately or seek emergency care if a problem develops.
- iii. Client has heard and repeated the post-operative instructions.
- iv. Client has received any medications ordered.
- v. Client has received a follow-up appointment.
- vi. Client has a responsible adult to accompany her home.

10.3 Follow-up

The first follow up contact should be established with health worker within 48 hours of discharge.

The next follow-up visit should preferably occur on the seventh day after surgery (or as early as possible after 7 days) and should include an examination of the operative site, suture removal (if nonabsorbent sutures were used) and any other relevant examination as indicated.

Subsequent follow-up visit should be made after either one month or the next menstrual period, whichever is earlier. During this follow-up visit the staff assesses the client to determine if she has any side effects or complications or dissatisfaction related to the surgery. The client is treated or referred as indicated.

10.3.1 The Follow-Up Visit Should Include the Following Tasks

- Check the medical record or referral form, if available, for background information on the client and the surgical procedure.
- Ask the client if she has experienced any problems or had any complaints since the surgery. Specifically, ask if the woman has experienced any of the following:
 - a. vaginal discharge or bleeding
 - b. wound discharge or bleeding
 - c. fever
 - d. pain or any other problem
- Examine the operative site to assess healing and the absence of infection.
- Clean the operative site.
- Remove non-absorbable sutures, if used.
- Treat or refer for any complications indicated by the examination.
- Remind the client to return to the facility if she misses a menstrual period or shows other signs of pregnancy.
- Document the follow-up visit in the client's medical record, including complaints, diagnosis and treatment.

10.3.2 Emergency Follow-Up

Clients making an emergency follow-up visit should receive immediate attention. Staff should be alert to the possibility of internal bleeding, bowel injury or infection. If the woman had surgery at another health facility, the medical records may not be available. The staff member conducting the interview should obtain chronological information covering all events since the day of surgery. Complications and treatment should be reported to the facility where the tubectomy was performed.

10.3.2.1 The Emergency Visit should Include the Following Tasks

- Examine the client immediately. Check all areas related to her complaint.
- Read the medical record, if available.
- Decide on the treatment for problems that can be handled on an outpatient basis.
- Arrange for a higher level of treatment for potentially serious complications.
- Note on the client record all problems and actions taken.
- Inform the facility where the female sterilization was performed about the emergency follow-up visit (if applicable).

10.4 Certificate of Sterilization (Annexure 4)

Certificate of sterilization should be issued one month after the surgery or, after the next menstrual period by the medical officer of the facility.

If the client does not have her periods even after one month of surgery, rule out pregnancy before issuing sterilization certificate.

For payment of compensation for undergoing sterilization operation, discharge slip/card will be considered a valid proof for undergoing sterilization operation.

Complications & Management

11.1 Complications

Overall Female Sterilization (minilap tubectomy and laparoscopic tubal occlusion) are safe procedures and few women experience complications. It occurs in less than 2 % of all cases and serious complications are rare. If complications are immediately and accurately diagnosed and effectively treated the morbidity rate is low.

Complications can occur during the procedure (Intra-operative) or following the procedure (Post operative)

The following steps should be taken when a complication arises during the procedure

- Adequate monitoring of vital signs
- Identify the problem immediately.
- Take prompt action based on the nature of the problem.
- Suspend the surgery till the client is stable
- Consider hospitalizing the client for observation.

11.1.1 Intra-Operative Complications and Management

S. No.	Condition	Management
1.	Vaso-vagal attack	<ul style="list-style-type: none"> • Make the OT table horizontal and raise the leg end and lower the head end • Give oxygen. • Administer atropine (0.6 mg) IV if there is bradycardia (pulse below 60 per min). Repeat if, the baseline pulse rate is not achieved within 1 to 2 minutes
2.	Respiratory depression or cardiac arrest	Keep the airway open; assist breathing using manual resuscitation equipment with oxygen; assess the circulation by monitoring pulse, blood pressure and respiration; and other supportive therapy to be given as indicated.
3.	Cardiac arrest	On confirming cardiac arrest, give an immediate chest thump and begin external cardiac massage; assist breathing of the patient as described in Annexure 8 ; cannulate a vein and give appropriate resuscitative drugs; apply external counter-shock if an electrical defibrillator is available
4.	Convulsions and toxic reactions to local anaesthesia	Maintain airway and administer 100% oxygen. If convulsions still persist, administer injection Midazolam 1-2 mg IV slowly. If Midazolam is not available, injection diazepam 5-10 mg IV can be given. Administration of IV fluid is not generally required but may be given, if necessary. Surgery should be stopped and the patient is allowed to recover. Further surgery should be performed at a centre with full range of services.

S. No.	Condition	Management
5.	Gas embolism	(When gas gets introduced into vascular system during insufflation of abdomen or needle inserted into vessel). Promptly turn client on her left side to keep gas on right side of heart; aspirate gas from the right atrium and ventricle with a central venous catheter or a direct intra cardiac needle.
6.	Uterine perforation	(May occur due to introduction of uterine elevator from below). Repair immediately if there is bleeding; otherwise, these patients need to have further hospital observation to ensure they are stable.
7.	Bleeding from the mesosalpinx	If during Minilap procedure – Tie the bleeder with 2-0 chromic catgut. If during Laparoscopic procedure – Treat through the laparoscope with cautery or ring/clip application. If the bleeder cannot be controlled immediately perform laparotomy.
8.	Injury to urinary bladder	Close in two layers and put self retaining catheter in the bladder for 7 days or as long as necessary. If surgeon is available, ask for help.
9.	Injury to intra-abdominal viscera (i.e. small or large bowel) and blood vessels	Repair immediately and maintain IV line. If the operating surgeon is not confident of repairing, he/she must ask for help from a competent surgeon.
10.	Subcutaneous emphysema	(May occur when gas gets introduced into abdominal subcutaneous tissue during insufflation when trocar/Veress needle tip is above the peritoneum). Stop insufflation and remove Veress needle/trocar. Allow air to escape from the incision by gently pressing the surrounding skin.

11.1.2 Post Operative Complications and Management

S. No.	Condition	Management
1.	Wound sepsis	Small stitch abscess is to be treated with drainage and dressings. However, severe sepsis needs opening of the incision and drainage of pus. Further treatment will be with dressing, antibiotics and analgesics.
2.	Hematoma in the abdominal wall	A small non-expanding, non-infected hematoma will resolve with no therapy, while a large one, particularly if infected, may need drainage and treatment with antibiotics.
3.	Intestinal obstruction, paralytic ileus and peritonitis	The client should be hospitalized if she is not already in hospital. Keep the patient on nil orally, put nasogastric suction, IV fluids and give antibiotics and analgesics, as indicated. Refer to higher centre, if required.
4.	Tetanus	A rare complication. If tetanus is detected, the patient must be transferred to a proper centre for treatment immediately.
5.	Incisional hernia	A rare complication that needs surgical treatment

11.1.3 Conditions following Female Sterilization (Not Attributable to Sterilization)

S. No.	Condition	Management
1.	Menstrual irregularities (for example menorrhagia, scanty period)	Sometimes occur but these are not complications of sterilization. Reassurance and treatment according to the cause is required in most cases.
2.	Chronic pelvic inflammatory disease	It usually presents itself as pelvic pain and requires treatment with bed rest, antibiotics and analgesics. However, one should keep in mind ectopic pregnancy and should be ruled out.
3.	Psychological problems (for example depression)	Discussion of problem, clarification of the role of sterilization and answering questions are important.
4.	Failure of the operation, leading to pregnancy	The client should be advised to report to the facility immediately after missed periods. The client should be offered MTP or be medically supported throughout the pregnancy. She should be offered repeat surgery, as indicated. Ectopic pregnancy must be ruled out as tubectomy predisposes to this condition.

11.1.4 Unforeseen Situations Encountered during Female Sterilization

- 1. Tubo ovarian masses:** These may cause difficulty in mobilizing the tubes and if dissection is attempted, can result in excessive bleeding.
- 2. Dense adhesions due to previous surgeries:** If tubes are embedded in thick adhesions, they are best left alone as dissection of adhesions can cause haemorrhage or post operative infections.
- 3. PID or Pelvic tuberculosis:** This may cause a plastered pelvis or frozen pelvis with inaccessible tubes.
- 4. Highly vascular tubes:** With large vascular or venous formations, it may be difficult to get an avascular portion of the tube and there is more likelihood of haemorrhage.
- 5. Congenital absence of tubes:** This is rare. By tracing over the fundus, absence of tubes can be detected. Counselling of client is important and post operative ultrasound and/or hysterosalpingogram may be advised for confirmation.
- 6. Tubal pathology:** Cases with hydrosalpinx or pyosalpinx, edematous tubes, haemorrhagic corpus luteum, ectopic pregnancy or malignancy should be documented and referred to a higher centre.
- 7. Malignancy:** Malignancy of tubes, ovaries and uterus if found, should be documented. Tubectomy can be done if feasible but referral to a proper centre is mandatory.
- 8. Unsuspected pregnancy:** Patient should be counseled about the presence of the unsuspected pregnancy and what her options are. Separate consent should be obtained for MTP. Pregnancy test may be done and, if possible, an ultrasound examination is also recommended. If she is willing, tubectomy can be done but proper documentation and follow up should be carried out.

Failure of Female Sterilization

12.1 Effectiveness of Minilap Tubectomy and Laparoscopic Tubal Occlusion

Minilap tubectomy and laparoscopic tubal occlusion carry a small risk of failure.

- Less than 1 pregnancy per 100 women over the first year after having the sterilization procedure (5 per 1,000).

This means that 995 of every 1,000 women relying on female sterilization will not become pregnant.

- A small risk of pregnancy remains

Over the 1 year of use and until the woman reaches menopause.

Over 10 years of use: About 2 pregnancies per 100 women (18 to 19 per 1,000 women).

- Effectiveness varies slightly depending on how the tubes are blocked but pregnancy rates are low with all techniques. One of the most effective techniques is cutting and tying the cut ends of the fallopian tubes after childbirth (postpartum tubal ligation).
- Failure, may be due to abnormalities of the fallopian tubes; procedural errors and reopening of the tube (recanalization) during the healing process.
- The failure may also be because of occlusion or ligation of tube, only on one side.

In cases where the surgeon is unable to identify the tube on one side and thereby could not occlude/ligate it, he/she should document it on the case sheet and inform the client accordingly that the sterilization procedure has not been successful. This documentation on the case sheet should also be countersigned by the client or their thumb impression taken (if illiterate). In such cases sterilization certificate should not be issued even if she resumes her menstrual cycle.

Such cases where sterilization certificate has not been issued are not eligible for compensation for 'failure' under FPIS.

The presence of early, undetected pregnancy at the time of the procedure may be perceived as a failure and must be ruled out carefully. If client still insists, tubectomy can be performed wherein she must be explained that the procedure may not be able to prevent the present pregnancy if existing but can only prevent future pregnancies if any. Such cases should be properly documented in the case sheet by the surgeon and should be countersigned by the client or her thumb impression taken (if illiterate). Sterilization certificate can be issued specifying its validity for any subsequent pregnancy and not the current suspected pregnancy. **Such cases where the client is subsequently found to be pregnant on examination are not eligible for compensation for 'failure' under FPIS.**

Tubectomy and tubal occlusion does not increase the incidence of ectopic pregnancy. However, if a woman does become pregnant after tubectomy, she is more likely to have an ectopic pregnancy (Pollack 1993). All women who have undergone minilap tubectomy and present with symptoms of pregnancy, should be carefully evaluated for ectopic pregnancy.

The failure of sterilization may be due to some technical deficiency in the surgical procedure such as mistaken fallopian tubes with round ligament, not putting Falope rings during laparoscopic tubal occlusion on the full loop of the tubes leading to partial occlusion, slipping off of the ring after applying or the rings give away (break) after putting on the tubes. Also there is an element of spontaneous recanalization of the blocked or excised fallopian tube leading to partial or full patency and subsequently leads to pregnancy & failure.

In case of missed menstrual period, the clients are advised to report to the health care facility within 2 weeks for confirmation about the failure of her sterilization procedure. She should be offered MTP and repeat sterilization procedure or be medically supported throughout the pregnancy if she so wishes. Ectopic pregnancy must be ruled out as female sterilization predisposes to this condition.

Reversal of Female Sterilization

The wide spread use of female sterilization particularly those opting for it at a young age has led to an increasing number of requests for reversal procedures. Most women and their partners are satisfied with the procedure but life's circumstances and outlook can change which may need reversal of female sterilization. However, women considering sterilization procedure for limiting their family should not think it as reversible.

The reasons that women seek tubectomy reversals include – (i) wanting a family with a new partner following a relationship breakdown/divorce/death of partner (ii) wanting children following unexpected death of a child; and (iii) after a long-standing sterilization, couple changing their mind some time later often by situations such as improved finances or existing children approaching the age of school or leaving home etc.

Differences of opinion regarding the most successful method of sterilization reversal have existed for several years and the centre of controversy was whether Microsurgical tubal recanalization procedure yielded better results in terms of technical success, cost of procedure and ultimate outcome in pregnancy than IVF techniques. However, the female sterilization reversal is a major surgical procedure involving end to end anastomosis of the ligated/occluded fallopian tube(s) i.e. Tuboplasty.

The outcome of microsurgical tubal recanalization depends on the type of sterilization procedure, available tubal length & condition of the remaining tube, technique & site of anastomosis, competency of the surgeon etc. The microsurgical technique demands good 'hand eye coordination' and therefore requires proper training for skill acquisition and competency. However, the success of tuboplasty cannot be guaranteed.



SECTION - II
TRAININGS IN FEMALE
STERILIZATION

Training for Female Sterilization

14.1 Training Needs Assessment

An important element of quality of care is dependent on the knowledge, skill and attitude of health care providers during their service delivery. Therefore, there is a need to develop properly trained cadre of health service providers in public and accredited private/NGO sector facilities. A situational analysis of the current status of service providers at the different level of health facilities in the district will help to identify the gaps and performances. This will help to determine and plan the most appropriate interventions such as Refresher Training, Induction Skill Training and Training of Trainers, so that a cadre of competent service providers can be developed by training MBBS doctors, Gynaecologist, Surgeons, Staff Nurses and OT Assistant on female sterilization.

The Program Managers need to coordinate with the District Chief Medical Officer to identify the gap in the availability of service providers required for providing regular sterilization services in all hospitals, CHCs and PHCs at respective district. Based upon the need of the districts the doctors/ nurses/ OT Assistants can be trained either in Minilap Tubectomy or Laparoscopic Tubal Occlusion technique. The training load can be calculated using the following RAG analysis.

Calculation of the Training Load

Technique of female sterilization	DH/SDH			CHC/BPHC			PHCs		
	R	A	G	R	A	G	R	A	G
Minilap									
Laparoscopy									

R- Required; A- Available; G – Gap

The same tool can be used for all categories of providers namely, doctors, nurses and OT assistants.

14.2 General Aspects of Training

14.2.1 Criteria for Designation of 'Training Centres'

- A functional service delivery site with all necessary infrastructure, equipment and supplies, providing sterilization services (minilap/laparoscopic sterilization).
- Have high client load of female sterilization at an average of 600 sterilization (laparoscopic and / or minilap abdominal tubectomy) cases per year (an average of 50 cases per month) to enable demonstration by trainers and supervised performance on clients by the trainee.
- Offering full range of family planning counselling and services.
- Availability of at least two trained providers in Minilap and Laparoscopic sterilization for the respective training site.
- Have training room close to the OT for at least 10 persons (trainers, trainees and observers/state visitors) with chairs, tables, light source, fans/AC, audio-visual facility and alternate source of power.

Identification and designation of these training centres at State and District level will be the responsibility of SQAC/ Director Family Welfare and DQAC/ CMO whichever is applicable.

14.2.2 Criteria for Designation of 'Trainers'

Trained service providers (MBBS and above) with competency/proficiency in the skills of counselling and technique of female sterilization procedures and have experiences in such service for at least three years, in a static center which performs an average of 600 sterilization cases per year (an average of 50 cases per month) and also willing to become a trainer and spare time to conduct training and follow-up visits for on-site support/hand-holding, if required, can be designated as a trainer by SQAC/Director Family Welfare at State level and by DQAC/CMO at District level.

14.2.3 Criteria for Selection of 'Trainee'

The eligibility criterion for selection of a trainee is detailed as follows

Sterilization	Training	Basic Qualification Requirement of Service Provider
Female	Minilap sterilization	<ul style="list-style-type: none"> • Specialists in surgical fields other than ObGyn • MBBS
	Laparoscopic sterilization	<ul style="list-style-type: none"> • DGO, MD/MS in ObGyn • Specialists in other surgical fields • MBBS performing Minilap sterilization

Selection of the trainee should be done by the CMO/District Training Coordinator from the facilities where:

- There is need for the service
- The trainee has basic knowledge to master the specific training objectives
- The trainee is interested to seek training to become a service provider.

14.2.4 Equipment and Supply for Training sites

- At least Two anatomical pelvic simulation models with attachments for classroom demonstration of the Minilap procedure and practice by learners using the respective skills checklist.
- Minilap Sterilization kits - two for classroom and at least five in the OT.
- Laparoscopic Sterilization kits- one for classroom and at least two in the OT .
- Teaching aids such as Laptop, LCD projector and Screen, extension board, power backup, CDs of presentations and Videos, flip charts, flip chart stand, coloured markers etc.
- Training material (Reference Manual for Female Sterilization – GoI, 2014, Standards and Quality Assurance in Sterilization Services – GoI, 2014, copies of pre/post course tests, curricula, attendance sheets/registers, flip charts, coloured markers, double sided tape, banner, certificates, paper clips, counseling flipbook, consent form).
- Funds for Training as per GOI guidelines.

14.2.5 Objectives of Training

- i. To update the participants with the knowledge and develop skills needed to perform the procedure.
- ii. To develop the skills for managing surgical complications and routine follow up care.
- iii. To develop communication and counselling skills.
- iv. To develop managerial skills for provision of quality services

14.2.6 Number of Trainees per Batch

Minilap	Laparoscopic
Upto 4 Doctors (MBBS/ Surgeon) in a batch according to the case load in the Training Centre.	Upto 4 teams (each team consisting of either an MBBS doctor trained in Minilap or Surgeon or Gynaecologist, Staff Nurse and an OT Assistant) as per the case load in the Training Centre.

14.2.7 Duration of Training

Training of Trainers	: 03 working days
Refresher Training	: 03 working days
Induction Skill Training	: 12 working days

14.2.8 Training Design

The whole Clinical Training on female Sterilization is to be competency based, that require knowledge, attitudes and skills, using sufficient time and appropriate training methods. The emphasis during Female sterilization training is on performing i.e. demonstration, anatomical pelvic simulation model practice and supervised surgical practice. Though there are some theoretical sessions, those need not always be covered using a lecture technique; more participatory methods such as questioning, role plays, case studies, observation and discussion should preferably be used.

14.2.9 Conducting Clinical Training (Coaching)

14.2.9.1 Skill Acquisition

The technique of developing the clinical skill is known as coaching. It is done on a one to one basis and involves the following stages.

- Explanation and demonstration of the clinical skill by the trainer, step by step.
- Practice by the participant under the supervision of the trainer, first on models and then with clients. More than 70% of the time to be given for practice.
- Evaluation of the participant's skill competency by the trainer.

14.2.9.2 Feedback Session

- Feedback given to the trainees during coaching on client is important to motivate them to become competent in the skills without compromising client's rights.
- Feedback should be timely, specific, descriptive, constructive, non judgmental and given in a polite manner.

- Often a look or hand gesture can be as effective as words and less worrisome to the client.
- Simple suggestions to facilitate the procedure can be made in a quiet, direct manner. Be prepared to calmly step in and take over the critical procedure if needed.

14.2.10 Measuring Competency

Competency is the ability to master a set of knowledge, skills and attitudes obtained during training and transfer them to the care of clients in the clinical practice setting. Trainer should observe and rate the performance for each step of the procedure as per the checklist (Annexure 10,11).

14.2.11 Performance Measurement

Evaluation of the training involves monitoring of the trained personnel after they are back on their jobs, to assess the improvement in performance. This requires follow up visits to the job sites of the trainees. Ideally, the trainer who provided the skill training should visit the job sites within 2 to 3 months of training.

14.3 Important Tips for the Trainers

- Familiarize with the content of each Chapter in the Section -1 and Annexures in the 'Reference Manual for Female Sterilization (2014)', as also Standards & Quality Assurance in Sterilization services (2014), Knowledge Assessment questionnaires and Skill Assessment Check Lists of female sterilization technique, IP practice etc.
- Advance preparation is the key to a successful session. Use the guides to prepare thoroughly in advance.
- As far as possible trainers need to work together as a team subtly supporting each other in every session. This will also set the tone for teamwork among the participants in their assignments.
- Every day ends with a wrap-up session and is followed by a re-cap session the next day to provide continuity in the training.
- The seating arrangement should be informal, preferably in a semi circle without any dias for the trainers. Training is most effective when trainers adopt a warm and friendly attitude towards the participants and take care not to ridicule any trainee.

Thorough discussions and the use of leading questions draw from participants the information that you are trying to impart and where necessary, fill in the gaps. That way trainees will find it easier to assimilate the knowledge and experiences.

14.4 Skill Practice on Model

14.4.1 Purpose and Objectives

The practice on model emphasizes surgical skills development through repetitive actions of various steps. The practice is to be done on the anatomical pelvic simulation model using check lists of all the steps of Minilap Tubectomy or Laparoscopic Tubal Occlusion. Upon completion of this module, trainees should be able to:

- i. Describe all the tasks included in providing Minilap Tubectomy or Laparoscopic Tubal Occlusion clinical services.
- ii. Competently perform all the steps of the Minilap Tubectomy or Laparoscopic Tubal Occlusion surgical procedure on a anatomical pelvic simulation model.

14.4.2 Demonstration and Practice on Model

- i. Talk through the steps preceding those that can be performed on a model using the Minilap Tubectomy or Laparoscopic Tubal Occlusion Clinical Skills Checklist (Annexure 13, 14, 15).
- ii. Trainer to demonstrate each of the steps on the model that participants will practise after the demonstration. Make sure that each trainee can clearly see this demonstration.
- iii. Explain each step of the demonstration on the anatomical pelvic simulation model as it is performed. Perform each step of the procedure slowly so that trainees can see the movements clearly. Have them refer to the appropriate figures/photos in the Reference Manual's relevant section, as each step is performed.
- iv. Show trainees the technique of occluding the fallopian tubes by demonstrating how to tie a surgical knot on the tubes in the model. Allow/help them to perform the procedure for both the right and the left tubes during their practice sessions. Make sure they demonstrate the correct technique of tying a surgical knot.
- v. Repeat the demonstration but have all trainees perform each step on the anatomical pelvic simulation model along with the trainer. This will give participants immediate feedback and will help them remember the many steps of the procedure. Encourage them to ask questions and continue practice on their own.
- vi. After the demonstration instruct trainees to practise the Minilap Tubectomy or Laparoscopic Tubal Occlusion techniques on anatomical pelvic simulation model. Explain that they should refer to the relevant sections/ diagrams of the Reference Manual as also skill check list during their practice session. During this supervised practice time spend time assisting each participant with the technique.

Practice Hints

Work on the anatomical pelvic simulation model delicately and respectfully as if you are performing a procedure on a live client.

The model should be so placed that its position resembles that of the client on the operation table.

Remember that the skin of the anatomical pelvic simulation model is tougher and less flexible than actual abdominal skin. Trainees will be unable to get an accurate soft-tissue feel.

The anatomical pelvic simulation model is also useful for practising the part of the procedure where the tubes are delivered.

When practising occlusion, it will provide opportunity to practise the tying technique.

Practise tying knots on the tube (but do not cut the tube).

14.5 Supervised Clinical and Surgical Practice

Upon completion of skill practice on model, the trainees will be allowed observation, assist and supervised clinical practice of each skill (counselling, clinical assessment & surgical steps) on the clients.

During demonstration of actual Minilap Tubectomy / Laparoscopic Tubal Occlusion technique/ procedure, one of the trainees should assist in the procedure as it provides him/her maximum exposure in gaining experience especially in relation to acquiring skills. While demonstrating, the trainer should provide a running commentary or talk through the steps as the rest of trainees observe the procedure. They may also use the relevant Clinical Skill Checklist as their guide while observing the procedure (Annexure 13, 14, 15). Discussion of the other topics related with performing the actual procedure follows immediately, emphasizing on client support and infection prevention.

In addition trainers will demonstrate the pre and post - procedure processes, administration of local anesthesia, opening and entering abdomen, locating and delivery of fallopian tubes and technique of tubal ligation/occlusion and closure of abdomen. Also emphasis is to be given on-

- Gentle tissue handling to reduce pain and the possibility of complications
- Control of bleeding from vessels in the rectus sheath
- Correct method of tubal ligation / occlusion
- Supporting and conversing with the client during surgery

14.5.1 Supervised Surgical Performance

After trainee's skills have been evaluated as satisfactory on the anatomical pelvic simulation model and following their observation and assisting on at least five sterilization procedures, they will be encouraged to perform the procedure under the trainer's supervision with the trainer assisting him. If the performance is satisfactory trainee may do solo procedure with another trainee as assistant.

During supervised surgical performance, provide each trainee with the support needed to perform a safe, effective female sterilization procedure. When guiding or correcting a trainee, do so in a manner that will not increase the client's anxiety. At times during the procedure, trainer might need to assist by placing the hands on the trainee's hand, helping to hold instruments correctly. It may be a good idea for trainees who are observing the procedure to touch the instruments while they are in position so they will be able to understand the amount of pressure that is used. If a trainee's performance is not adequate, be prepared to take over the procedure. If this happens, instruct the trainee to assist or to observe.

Surgical training requires a great deal of patience. Some trainees may take some time in learning to perform a Minilap tubectomy/ Laparoscopic tubal occlusion procedure. New techniques are hard to learn and trainees will require repetitive practice on the anatomical pelvic simulation model and on clients. Trainees should also review the video and the figures and photos in the Reference Manual for Female Sterilization (2014). Be supportive to trainees and acknowledge their accomplishments.

Immediately after surgical practice, review the case with the trainee who performed the procedure and the trainees 'observing the procedure. Give the trainee feedback on his or her performance and answer any questions.

During supervised surgical performance, if a complication arises during surgery, the trainer should take charge of managing the situation and complete the surgery.

14.6 Evaluation of Clinical and Surgical Skills

14.6.1 Follow-up

Learning about female sterilization by Minilap and Laparoscopic technique does not end at the end of the course. At the completion of the course, most trainees will have gained skill in a new technique; with practice they will gain competency in the technique over the next few months and gradually proficiency. The follow-up should be conducted within 2 to 3 months by District Training Coordinator or CMO.

14.6.2 Certification

Certification of the trainee will depend on the trainee's skill and ability to perform female Sterilization by Minilap tubectomy and/or Laparoscopic tubal occlusion, which indicates that the trainee has demonstrated the competency needed to perform the procedure independently. Once the Trainer is fully satisfied about the trainee's skill acquisition and competency to perform the procedure independently, the Hospital that conducts the training shall issue a Certificate of Training to be signed by the Trainer and In-Charge of the hospital (CMO/CMHO /CS/MS/Equivalent).

Each trainee must observe/assist at least five sterilization procedures (minilap/laparoscopic sterilization) and perform at least five independently to be certified as service provider for that method.

Although the minimum number of cases to assist & perform has been specified, trainee may not still be competent and confident to perform independently and require some more clinical practice than others. Trainer should evaluate the clinical performances of trainee as satisfactory using the score sheet for the specific method.

If the client caseload is not sufficient for all trainees to receive enough surgical practice, make arrangements for follow-up training. Trainer may choose to invite participants back individually or as a group or may choose to visit their facilities to provide training, follow-up and certification.

14.7 Curriculum and Schedule of Training

14.7.1 Training of Trainers (3 Days)

Day	Session 1 (9 AM to 11 AM)	Session 2 (11 AM to 1:30 PM)	1.30 – 2.00 PM	Session 3 (2 to 4 PM)
Day 1	<ul style="list-style-type: none"> Welcome, introduction Participants' expectations, group norms Objectives & course materials Pre course knowledge assessment Key concepts in clinical training: <ul style="list-style-type: none"> Adult learning principles & humanistic approach to clinical training 	<ul style="list-style-type: none"> Overview of training techniques: Communication skills Facilitation, demonstration and Coaching skills Eligibility criteria & client assessment. 	Working Lunch	<ul style="list-style-type: none"> Instructions for teach back sessions by participants. Teach back by participants <ul style="list-style-type: none"> Pre-procedure steps Post-operative recovery, discharge and follow-up <p>Review of the day</p>
Day 2	<ul style="list-style-type: none"> Demonstration of surgical steps by trainer using checklist followed by practice by participants Interactive session with participants on Analgesia and Anaesthesia 	<ul style="list-style-type: none"> Interactive session with participants on Infection Prevention practices Video film on infection prevention, Minilap sterilization (If available) Observe / assist / perform cases under supervision in OT 	Working Lunch	<ul style="list-style-type: none"> Orientation on Reference Manual for Female Sterilization, Quality Assurance in Sterilization services and National Family Planning Indemnity scheme by Master Trainer Female Sterilization in Mobile outreach services <p>Review of the day</p>
Day 3	<ul style="list-style-type: none"> Presentations by Participants Complications & their Management. Failure & Reversal of Female Sterilization. 	<ul style="list-style-type: none"> Interactive discussion on Medicolegal issues Observe / assist / perform cases under supervision cases in OT / Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> Certification Course knowledge assessment & Review. Course Evaluation & feed back <p>Course closure</p>

14.7.2 Refresher Training Course for Minilap Tubectomy and Laparoscopic Tubal Occlusion
(3 Days)

Day	Session 1 (9 AM to 11 AM)	Session 2 (11 AM to 1:30 PM)	1.30 – 2.00 PM	Session 3 (2 to 4 PM)
Day 1	<ul style="list-style-type: none"> Welcome & Introduction Participants' expectations, Group Norms Objectives & Course Materials Pre course Knowledge Assessment Overview of FP methods and Female sterilization Counselling & Informed Consent 	<ul style="list-style-type: none"> Eligibility criteria & Client assessment Pre-procedure steps Analgesia & Anaesthesia Surgical steps using checklist Observe / assist / perform cases under supervision in OT / Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> Post-operative recovery, discharge and follow-up Video film on Infection Prevention, Minilap Sterilization(If available). <p>Review of the day</p>
Day 2	<ul style="list-style-type: none"> Infection Prevention. Female Sterilization in Mobile outreach services 	<ul style="list-style-type: none"> Observe / assist / perform cases under supervision in OT / Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> Orientation on Reference Manual for Female Sterilization, Quality Assurance in Sterilization Services and National Family Planning Indemnity scheme by Trainer <p>Review of the day</p>
Day 3	<ul style="list-style-type: none"> Complications & their Management. Failure & Reversal of Female Sterilization. Medico-legal issues 	<ul style="list-style-type: none"> Observe / assist / perform cases under supervision in OT / Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> Certification Course knowledge assessment & Review. Course Evaluation & feed back <p>Course closure</p>

14.7.3 Schedule of Skill Training Course for Minilap Tubectomy and Laparoscopic Tubal Occlusion (12 Days)

Day	Session 1 (9 AM to 11 AM)	Session 2 (11 AM to 1:30 PM)	1.30 – 2.00 PM	Session 3 (2 to 4 PM)
Day 1	<ul style="list-style-type: none"> • Welcome & Introduction • Participants expectations, Group Norms • Objectives & Course Materials • Pre course Knowledge Assessment • Overview of family planning services & health benefits of Family Planning 	<ul style="list-style-type: none"> • FP methods and choices • Overview of Female sterilization in India • Walk-in-tour of the OT and around • Anatomy & Physiology of Female Reproductive system 	Working Lunch	<ul style="list-style-type: none"> • Counselling & informed consent • Role Play <p>Review of the day</p>
Day 2	<ul style="list-style-type: none"> • Review of MEC, Clinical assessment and selection of clients • Pre and Post procedure counselling 	<ul style="list-style-type: none"> • Exposure to Minilap Instruments & Equipment (<i>For Minilap Tubectomy Training</i>) • Exposure to Laparoscopic Instruments & Equipment (<i>For Laparoscopic Tubal Occlusion Training</i>) • Introduction of Anatomical Pelvic Simulation model • Demonstration of steps on model by trainer. • Observe cases in OT / Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Infection Prevention practices in Female Sterilization <p>Review of the day</p>

Day	Session 1 (9 AM to 11 AM)	Session 2 (11 AM to 1:30 PM)	1.30 – 2.00 PM	Session 3 (2 to 4 PM)
Day 3	<ul style="list-style-type: none"> • Methods of Female Sterilizations • Steps of Minilap Tubectomy <i>(For Minilap Tubectomy Training)</i> • Steps of Laparoscopic Tubal Occlusion <i>(For Laparoscopic Tubal Occlusion Training)</i> • Video (If available) • Explanation of various Checklists/ learning guides 	<ul style="list-style-type: none"> • Observe cases in OT / Practise on model using checklist • Processing of instrument and linens 	Working Lunch	<ul style="list-style-type: none"> • Early recognition and management of immediate & intraoperative complications. • Post operative care. <p>Review of the day</p>
Day 4	<ul style="list-style-type: none"> • Premedication, Anaesthesia & Analgesia • Practise on model 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Side effect, Late complication and their management <p>Review of the day</p>
Day 5	<ul style="list-style-type: none"> • Discharge and follow –up • Follow up and certification • Emergency preparedness and Management 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Challenges faced during operative procedure and possible solutions <p>Review of the day</p>
Day 6	<ul style="list-style-type: none"> • Orientation on Reference manual on Female Sterilization Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Mid course assessment • Open forum <p>Review of the week</p>
Day 7	<ul style="list-style-type: none"> • Medicolegal aspects of female sterilization • Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Record keeping • Consent form, • Case record & registers • Follow up records <p>Review of the day</p>

Day	Session 1 (9 AM to 11 AM)	Session 2 (11 AM to 1:30 PM)	1.30 – 2.00 PM	Session 3 (2 to 4 PM)
Day 8	<ul style="list-style-type: none"> • Review of female sterilization failure and recanalization • Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Orientation on Quality Assurance in Sterilization Services and National Family Planning Indemnity Scheme <p>Review of the day</p>
Day 9	<ul style="list-style-type: none"> • Sterilization in mobile out reach services • Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Counselling- postpartum clients <p>Review of the day</p>
Day 10	<ul style="list-style-type: none"> • Review of skills tracking sheet. • Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Community awareness on sterilization <p>Review of the day</p>
Day 11	<ul style="list-style-type: none"> • Review of training and preparation of action plan for their own facilities for strengthening sterilization services • Assist / Perform cases in OT • Practise on model using checklist 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using check list 	Working Lunch	<ul style="list-style-type: none"> • Evaluation of participants on models using checklists <p>Review of the day</p>
Day 12	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practice on model using checklist • FAQ and open forum 	<ul style="list-style-type: none"> • Assist / Perform cases in OT • Practise on model using checklist 	Working Lunch	<ul style="list-style-type: none"> • Course knowledge assessment- Review & discussion • Course Evaluation & feed back • Review of skills tracking sheet • Certification <p>Course Closure</p>

The background is a solid teal color. It features a pattern of small, light-teal dots arranged in a grid. Overlaid on this are several larger, semi-transparent teal shapes: a circle in the top right, a diamond in the center, and another circle in the bottom left. The text is centered in the middle of the page.

SECTION - III
ANNEXURES

Application cum Consent Form for Sterilization Operation

An informed consent is to be taken from all clients of sterilization before the performance of the surgery as per the consent form placed below

Name of Health Facility:.....

Client Hospital Registration Number:

Date:/...../20.....

1. Name of the Client: Shri/Smt.

2. Name of Husband/Wife: Shri/Smt.

3. Address

4. Contact No:

5. Names of all living, unmarried dependent Children

i)Age.....

ii.....Age.....

iii.....Age.....

iv..... Age.....

6. Father's Name of beneficiary: Shri.....

7. Address:

8. Religion/Nationality:

9. Caste- SC/ST/General.....

10. Status- APL/BPL

11. Educational Qualifications

12. Business/Occupation:

13. Operating Centre:

I, Smt/Shri (client) hereby give consent for my sterilization operation. I am ever married. My age isyears and my husband/wife's age is years. I have ...(Nos.) male and (Nos.) female living children. The age of my youngest living child is years.

- a) I have decided to undergo the sterilization / re-sterilization operation on my own without any outside pressure, inducement or force. I declare that I / my spouse have/has not been sterilized previously (**not applicable in case of re-sterilization**).
- b) I am aware that other methods of contraception are available to me. I know that for all practical purposes this operation is permanent and I also know that there are still some chances of failure of the operation for which the operating doctor and health facility will not be held responsible by me or by my relatives or any other person whomsoever.
- c) I am aware that I am undergoing an operation, which carries an element of risk.
- d) The eligibility criteria for the operation have been explained to me and I affirm that I am eligible to undergo the operation according to the criteria.
- e) I agree to undergo the operation under any type of anaesthesia, which the doctor/health facility thinks suitable for me and to be given other medicines as considered appropriate by the doctor/health facility concerned. I also give consent for any additional life-saving procedure, if required.
- f) I agree to come for follow-up visits to the Hospital/Institution/Doctor/health facility as instructed, failing which I shall be responsible for the consequences, if any.
- g) If, after the sterilization operation, I experience a missed menstrual cycle, then I shall report within two weeks of the missed menstrual cycle to the doctor/health facility and may avail of the facility to get an MTP done free of cost. I shall be responsible for the consequences, if any.
- h) I understand that Vasectomy does not result in immediate sterilization. *I agree to come for semen examination **3 months after the operation** to confirm the success of sterilization surgery (Azoospermia) failing which I shall be responsible for the consequences, if any. (* **Applicable for male sterilization cases**).
- i) **In case of complications, failures and the unlikely event of death attributable to sterilization, I/ my spouse and dependent unmarried children will accept the compensation as per the existing provisions of the Government of India "Family Planning Indemnity Scheme" as full and final settlement and will not be entitled to claim any other compensation including compensation for upbringing of the child, if any, born on account of failure of sterilization, over and above the one offered, from any court of law in this regard.**

I have read the above information or the above information has been read out and explained to me in my own language and that this form has the authority of a legal document.

I am aware that I have the option of deciding against the sterilization procedure at any time without sacrificing my rights to other reproductive health services.

Date:

Signature or Thumb Impression of the Client

Name of client:

Signature of Witness (Clients side):

Full Name:

Full Address.....

I am aware that client is ever married and has 1 living child over one year of age.

Signature of ASHA/ Counsellor/Motivator:.....

Full Name:

Full Address:.....

I certify that I have satisfied myself that -

- a. Shri/Smt.....is within the eligible age-group and is medically fit for the sterilization operation.
- b. I have explained all clauses to the client and that this form has the authority of a legal document.
- c. I have filled the Medical record–cum-checklist and followed the standards for sterilization procedures laid down by the Government of India.

Signature of Operating Doctor

Signature of Medical Officer in-charge of the Facility

(Name of Operating Doctor)

(Name of Medical Officer in-charge of the Facility)

Date:

Date:.....

Seal:

Seal:

DENIAL OF STERILIZATION

I certify that Shri/Smt.....is not a suitable client for sterilization/re sterilization for the following reasons:

- 1.
- 2.

He/ She has been advised the following alternative methods of contraception.

- 1.
- 2.

Signature of the Doctor making the decision

Date:

Name and full Address:

Medical Record & Check List for Sterilization

A checklist is to be filled by the doctor before conducting sterilization procedure for ensuring the eligibility and fitness of the client for sterilization.

(To be filled before commencing the operation)

Name of Health Facility:

Beneficiary Registration No.

Date.....

A. Eligibility Checklist

Client is within eligible age	Yes..... No.....
Client is ever married	Yes..... No.....
Client has at least one child over one year of age	Yes..... No.....
Lab investigations (Hb, urine) undertaken are within normal limits (7.0 gm/dl or more)	Yes..... No.....
Medical status as per clinical observation is within normal limits	Yes..... No.....
Mental status as per clinical observation is normal	Yes..... No.....
Local examination done is normal	Yes..... No.....
Informed consent given by the client	Yes..... No.....
Explained to the client that consent form has authority of a legal document	Yes..... No.....
Abdominal/pelvic examination has been done in the female and is Within Normal Limits	Yes..... No.....
Infection prevention practices as per laid down standards	Yes..... No.....

B. Menstrual History (for female clients)

Cycle Days	
Length	
Regularity	Regular..... Irregular.....
Date of LMP (DD/MM/YYYY)/...../.....

C. Obstetric History (for female clients)

Number of Spontaneous Abortions	
Number of Induced Abortions	
Currently Lactating	Yes..... No.....
Amenorrhic	Yes..... No.....
Whether Pregnant	Yes..... No..... If Yes (no. of weeks pregnancy).....
No. of Living Children	Total No.....
Last Child birth (Date/Month/Year)/...../.....

D. Contraceptive History

Have you or your spouse ever used contraception?	Yes..... No.....
Are you or your spouse currently using any contraception or have you or your spouse used any contraception during the last six months? (✓) Tick the option	<ul style="list-style-type: none"> • None..... • IUCD..... • Condoms..... • Oral Pills..... • Any Other (specify).....

E. Medical History

Recent medical Illness	Yes..... No.....
Previous Surgery	Yes..... No.....
Allergies to medication	Yes..... No.....
Bleeding Disorder	Yes..... No.....
Anemia	Yes..... No.....
Diabetes	Yes..... No.....
Jaundice or liver disorder	Yes..... No.....
RTI/STI/PID	Yes..... No.....
Convulsive disorder	Yes..... No.....
Tuberculosis	Yes..... No.....
Malaria	Yes..... No.....
Asthma	Yes..... No.....
Heart Disease	Yes..... No.....
Hypertension	Yes..... No.....
Mental Illness	Yes..... No.....
Sexual Problems	Yes..... No.....
Prostatitis (Male sterilization)	Yes..... No.....
Epididymitis (Male Sterilization)	Yes..... No.....
H/O Blood Transfusion	Yes..... No.....
Gynecological problems (Female Sterilization)	Yes..... No.....
Currently on medication (if yes specify)	Yes..... No.....

Comments

.....

.....

F. Physical Examination

BP.....Pulse.....Temperature.....

Lungs	Normal..... Abnormal.....
Heart	Normal..... Abnormal.....
Abdomen	Normal..... Abnormal.....

G. Local Examination (Strike out whichever is not applicable)

1. Male Sterilization

Skin of Scrotum	Normal..... Abnormal.....
Testis	Normal.....Abnormal.....
Epididymis	Normal.....Abnormal.....
Hydrocele	Yes.....No.....
Varicocele	Yes.....No.....
Hernia	Yes.....No.....
Vas Deferens	Normal.....Abnormal.....
Both Vas Palpable	Yes.....No.....

2. Female Sterilization

External Genitalia	Normal.....Abnormal.....
PS Examination	Normal.....Abnormal.....
PV Examination	Normal.....Abnormal.....
Uterus Position	A/V.....R/V..... Mid position.....Not determined.....
Uterus size	Normal.....Abnormal Size.....
Uterus Mobility	Yes.....No (Restricted or Fixed)
Cervical Erosion	Yes.....No.....
Adnexa	Normal.....Abnormal.....

Comments

.....

H. Laboratory Investigations

Hemoglobin levelGms%
Urine: Albumin	Yes..... No
Urine- Sugar	Present..... Absent
Urine test for Pregnancy	Positive: Negative
Any Other (specify)

Name:

Signature of the Examining Doctor

Date:

HOSPITAL SEAL

I. Preoperative Preparation

Fasting	Yes..... duration.....hours No.....
Passed urine	Yes/No.....
Any other (specify)	

J. Anaesthesia/Analgesia

Type of anaesthesia given (✓) Tick the option	<ul style="list-style-type: none"> • Local only • Local and analgesia • General, no intubation • General, intubation • Any other (specify)
Time
Drug name
Dosage
Route

Signature of anaesthetist in case of regional or general anaesthesia

K. Surgical Approach (Strike out whichever is not Applicable)

Male sterilization

Local anaesthesia	Lignocaine 2%.....cc Other
Technique	Conventional.....NSV
Type of incision Conventional NSV	Single vertical..... Double vertical..... Single puncture
Material for occlusion of vas	2-0 Silk.....2-0 Catgut.....
Fascial interposition	Yes No..... If no, give reasons.
Length of vas resected Cm
Suture of silk for conventional vasectomy	Silk.....Other
Surgical notes	
Any other surgery done at time of sterilization?	Yes No..... If yes give details.....
Specify details of complications and management	

Name:

Signature of the operating surgeon

Date:

Female sterilization

Local anaesthesia	Lignocaine % Other
Timing of procedure (✓) Tick the option used	<ul style="list-style-type: none"> • 24 hours—7 days post-partum • Interval (42 days or more after delivery or abortion) • With abortion, induced or spontaneous <ul style="list-style-type: none"> * Less than 12 weeks * More than 12 weeks * Any other (specify)
Technique (✓) Tick the option used	<ul style="list-style-type: none"> • Minilap <ul style="list-style-type: none"> * With C section * With other surgery • Laparoscopy <ul style="list-style-type: none"> * SPL/DPL
Method of occlusion of fallopian tubes (✓) Tick the option used	<ul style="list-style-type: none"> • Modified Pomeroy Laparoscopy: <ul style="list-style-type: none"> * Ring * Clip
Details of gas insufflation Pneumoperitoneum created (CO ₂ /Air)	YesNo.....
Insufflator used	YesNo.....
Specify details of complications and management	

Name:

Signature of the operating surgeon

Date:

L. Vital Signs: Monitoring Chart (For Female Sterilization)

*Sedation: 0—Alert 1—Drowsy 2—Sleeping/arousable 3—Not arousable

Event	Time	Sedation*	Pulse	B l o o d Pressure	Respiratory Rate	Bleeding	Comments (Treatment)
Preoperative (every 15 in after premedication)							
Intra-operative (continuous)							
Post-operative 1. Every 15 min for first hour and longer if the patient is not stable/awake	15 min 30 min 45 min						
2. Every 1 hour until 4 hours after surgery	1hr 2hrs 3hrs 4hrs						

Name:.....

Signature of the attending staff nurse

M. Post-Operative Information

Passed urine	Yes	No.....
Abdominal distension	Yes	No.....
Patient feeling well	Yes	No.....
If no, please specify		

N. Instructions For Discharge

Male sterilization client observed for half an hour after surgery YesNo

Female sterilization client observed for four hours after surgery YesNo

Post-operative instructions given verbally YesNo

Post-operative instructions given in writing YesNo

Patient counselled for postoperative instructions YesNo

Comments.....

Name:

Signature of the discharging doctor

Post Operative Instruction Card

Name and type of hospital/facility	
Client's name	
Father's name	
Husband's name/Wife's Name	
Address	
Contact number (if available)	
Date of operation	/ / (D/M/Y)
Type of operation	Minilap/Post-partum/Laparoscopic (SP/DP)/ Conventional Vasectomy/NSV

1. Follow-up:
 - a) After 48 hours, first contact is established
 - b) On the 7th day for stitch removal
 - c) **Female Sterilization:** After one month or after first menstrual period, whichever is earlier
Male Sterilization: After 3 months, for semen examination for sperm count
 - d) In an emergency, as and when required to the nearest health facility
2. Medication as prescribed:
3. Return home and rest for the remainder of the day.
4. **Female Sterilization:** - Resume only light work after 48 hours and gradually return to full activity in two weeks following surgery.
5. **Male Sterilization:** - Scrotal support or snug undergarment for 48 hours.
- Resume normal work after 48 hours and return to full activity, including cycling, after one week following surgery.
6. Resume normal diet as soon as possible.
7. Keep the incision area clean and dry. Do not disturb or open the dressing.
8. Bathe after 24 hours following the surgery. If the dressing becomes wet, it should be changed so that the incision area is kept dry until the stitches are removed.
9. **Sexual intercourse:**
Vasectomy/ Tubectomy does not interfere with sexual pleasure, ability or performance.
Female Sterilization: - In the case of interval sterilization (Minilap and Laparoscopic), the client may have intercourse one week after surgery or whenever she feels comfortable thereafter.
- In the case of post partum sterilization (after caesarian or normal delivery), the client may have intercourse two week after surgery or whenever she feels comfortable.
Male Sterilization: - The client may have intercourse whenever he is comfortable after the surgery but must ensure use of condom if his wife/partner is not using contraception.
10. Report to the doctor or clinic if there is excessive pain, fainting, fever, bleeding or pus discharge from the incision or if the client has not passed urine, not passed flatus and experiences bloating of the abdomen.
11. Contact health personnel or a doctor in case of any doubt.

12. **Female Sterilization:** Return to the facility if, there is any missed period/no periods, with in 2 weeks to rule out pregnancy.
13. **Male Sterilization:** Return to the facility after three months for semen examination to see if azoospermia has been achieved. If semen still shows sperm return to facility every month till 6 months.

Follow-up report

Follow up	Time after surgery	Date of follow-up	Complications, if any	Action Taken
1st	48 hours			
2nd	7th day			
3rd	1 month after surgery or after the first menstrual period, whichever is earlier (Female Sterilization)			
	After 3 months for semen examination (Male Sterilization)			
Emergency				

Comment.....

Result of Semen Examination:.....

Name:

Designation:.....

Signature of the person filling out the report

Sterilization Certificate

Hospital Registration No. (IPD/OPD) _____

1. This is to certify that Smt/ Shri..... S/O; W/O Shri
 working as residing at
 has undergone Minilap Tubectomy – (Interval/Post-Partum/Post Abortion/Concurrent
 with other procedures)//Laparoscopic Tubal Occlusion (Interval/Post Abortion/Concurrent with
 other surgeries)/Vasectomy in this facility/hospital
 (Name of facility/Hospital) on by Dr.....

For Female Sterilization:

2. She has resumed her menstrual Cycle (LMP____) or she has not resumed her menses within the month of sterilization but pregnancy test is negative.

For Male Sterilization:

3. His semen examination undertaken on (Date)_____ revealed no sperm (azoospermia)

*Strike out whichever is not applicable

She/ He is therefore certified to be sterile

Signature of Medical Officer I/c

Name.....

Date Seal

Note : Client should acknowledge 'received' on the duplicate copy before receiving the original copy. The duplicate to be maintained as a record in the facility as per state norms.

Physical Requirements for Sterilization

Sr. No	Item	Requirements
1	Facilities	<ul style="list-style-type: none"> Well-ventilated, fly-proof room with concrete/tiled floor, which can be cleaned thoroughly Running water supply through tap or bucket with tap Electricity supply with a standby generator and other light source
2	Space Required	<ul style="list-style-type: none"> Reception area Waiting area Counselling area which offers privacy and ensures avoidance of any interruptions Laboratory with facilities for urine examination, blood examination (female sterilization), semen examination (male sterilization) Clinical examination room for initial assessment and follow up Preoperative preparation room for trimming of hair, washing, changing of clothes and premedication Hand washing area near the OT for scrubbing Sterilization room, near the OT, for autoclaving, washing and cleaning equipment, preparation of sterile packs OT: should be isolated and away from the general thoroughfare of the clinic, it should be large enough to allow operating staff to move freely and to accommodate all the necessary equipment. Lighting should be adequate. Recovery room: must be spacious and well ventilated, number of beds will be determined by the space available, should be adjacent to the OT. Adequate number of toilets: sufficient number of sanitary type toilets with running water for the clients and the staff. Storage area Office area for keeping records
3 Equipment and Supplies		
3A	Examination Room Requirements	<ul style="list-style-type: none"> Examination table Foot stool Blood pressure apparatus Thermometer Stethoscope Equipment specific for female sterilization: Examination light Weighing scale Instrument for pelvic examination
3B	Laboratory	<ul style="list-style-type: none"> Haemoglobinometer and accessories Apparatus to estimate albumin and sugar in urine Reagents
3C	Sterilization Room	<ul style="list-style-type: none"> Autoclave Boiler Surgical drums SS Tray Glutaraldehyde solution 2%/ paracetic acid

Sr. No	Item	Requirements
3D	Cleaning Room	<ul style="list-style-type: none"> • Hand brushes • Utility gloves • Basins • Detergents • Chlorine solution 0.5%
3E	Operation Theatre	<ul style="list-style-type: none"> • Operating table capable of Trendelenburg position • Step-up stool • Spot light in OT • Instrument trolley • Blood pressure instrument • Stethoscope • Syringe with needles • Emergency equipment and drugs • Room heater • IV stand • Waste basket, storage cabinet, buckets, basins for decontamination • Box for used linen • Puncture-proof box for needles • Additional for Female Sterilization: <ul style="list-style-type: none"> • Minilaparotomy kit • Laparoscopy kit • Additional for Male Sterilization: <ul style="list-style-type: none"> • Conventionalvasectomykit • Non-scalpelvasectomykit
3F	Recovery Room	<ul style="list-style-type: none"> • Patient's cot with mattress, sheet, pillow, pillow cover and blankets • Blood pressure instrument • Stethoscope • Thermometers • IV stand • Emergency equipment and drugs as per list
4	Emergency equipment and supplies	<ul style="list-style-type: none"> • Stethoscope • Blood pressure instrument • Oral airways guedel size 3, 4, 5 • Nasopharyngeal airways size 6, 6.5, 7.0 • Suction machine with tubing and two straps • Ambu bag with mask size 3, 4, 5 • Tubing and oxygen nipple • Oxygen cylinder with reducing valve and flowmetre and ranch for opening • Blanket • Gauze pieces • Kidney tray • Torch • Syringes and needles, including butterfly sets, IV cannula • Intravenous infusion sets and fluids • Endotrachael tube size 6, 6.5, 7, 7.5, 8.0 • Laryngeal mask airway size 3, 4, 5 • Combitube • Cricothyroidectomy set • Sterile laparotomy instruments (Additional requirement for female sterilization)

Sr. No	Item	Requirements
5	Essential Drugs	<ul style="list-style-type: none"> • Injection Adrenaline • Injection Midazolam • Injection Atropine • Injection Diazepam • Injection Deriphylline • Injection Physostigmine • Injection Xylocaine • Injection Hydrocortisone (Dexamethasone) • Injection Pheniramine Maleate • Injection Promethazine • Injection Pentazocine • Injection Ranitidine • Injection Metoclopramide • Injection Calcium Gluconate/Calcium Chloride • Injection Sodium Bicarbonate (7.5%) • Injection Dopamine • Injection Mephenteramine • Injection Frusemide • Injection Methergine (Additional for female Sterilization) • Injection Oxytocin (Additional for Female Sterilization) • Water-soluble jelly • Electrode jelly • IV fluids : 5% Dextrose, 0.9% sodium chloride (normal saline) • Ringer lactate • Plasma Expanders • Glucose 25% • Heta Starch (HES 6%) (Additional for Male Sterilization)

Minilaparotomy Kit

Item	Quantity
Sponge-holding forceps	2
Surgical drape (towel with central hole)	1
Syringe, 10 cc	2
Needle, 22-G, 1V 2"	2
Scalpel	1
Scalpel blade, size 15	2
Allis forceps	2
Medium artery forceps straight	3
Medium artery forceps curved	3
Needle holder	1
Straight scissors	1
Curved scissors	1
Babcock clamp (medium size)	2
Small Langenbeck (right-angle abdominal)	2
Retractor	1
Dissecting forceps, toothed	1
Dissecting forceps, non-toothed	1
Uterine elevator (for interval procedures)	1
Speculum, vaginal, Sim's medium	2
Small stainless-steel bowl	1
Vulsellum	1
Tubal hook	1
'O' chromic catgut	1
Small round-bodied curved needle	1
Small cutting needle	1
Non-absorbable suture material	1
Dressing material	1
SS kidney tray	1

Laparoscopic Tubal Occlusion Kit

Item	Quantity
Veress needle (both sizes)	2
Light source for laparoscope with spare bulb	1
Emergency light source	1
Fiber-optic cable	1
Trocar with cannula	2
Operating laparoscope or laparocator	1
Carbon dioxide gas cylinder	2
Pneumoperitoneum insufflation apparatus	1
Falope-Ring loader	2
Falope-Ring	2
Dissecting forceps, toothed	1
Scalpel with no. 11 blade	1
Sim's vaginal speculum	1
Uterine sound	1
Uterine elevator	1
Vulsellum	1
Straight scissors	1
Needle holder	1
Sponge-holding forceps	2
Catgut suture, 0 or 00	1
Small curved cutting needle	1
Dressing material	1
Iodophor solution	1 Q.S.
Syringe, 10 cc	1
Needle, 22-G,	1
Gauze	4
Glutaraldehyde container (plastic with cover)	1
SS tray (to rinse the laparoscope)	2
SS small bowls	2
SS kidney tray	1

Management of Emergencies in Female Sterilization

- **Think A, B, C, D. - A: Assess/airways, B: breathing, C: circulation, D: drugs**

- Get help from other staff, immediately call doctor,

If there are any symptoms and/ signs of complication,

- reassure the client,
 - start oxygen through mask,
 - immediately secure the IV line (if not already secured)
- stay with patient
 - Always keep Emergency kit, drugs and equipment available

Observation -What you see	Reason - What is the cause	Action - What to do
(1) Fainting <ul style="list-style-type: none"> • Loss of consciousness • Vital signs present • Lungs clear and responsive 	<ul style="list-style-type: none"> • Vaso - vagal reaction • Caused by severe pain or fear • Rule out other reasons for loss of consciousness such as cardiac arrest or blood loss. 	<ol style="list-style-type: none"> 1. Assess - Airway- Lie client down 2. Breathing- Assess lungs 3. Circulation- Take vital signs, Asses for blood loss and treat* 4. Drugs- If fainting continues give Inj. Atropine 0.6 mg. IV fast.
(2) Unconscious with twitching and involuntary movements	Seizures caused by <ul style="list-style-type: none"> • Seizure disorder • Drug induced 	<ol style="list-style-type: none"> 1. Assess - Airway- Maintain airways. Lie on side and /or turn head to side, clear mouth of vomitus, Do not restrain but clear areas to prevent any injury. 2. Breathing- Give oxygen by mask, keep an Ambu bag ready. 3. Circulation- Start IV and if seizure continues for more than few minutes. 4. Drugs- If last for more then 4 minutes, give Midazolam 1 IV slowly. May repeat 1 mg every 5 minutes to total of 5 mg.
(3) Pale, clammy <ul style="list-style-type: none"> • Cyanosis • Anxiety • Restlessness • Unconsciousness (late sign) 	Shock - due to: -Blood loss -Cardiac or respiratory difficulty	<ol style="list-style-type: none"> 1. Assess - Airway- Lie client down, raise legs 6-12 inches, Reassure. 2. Breathing- Give oxygen by mask, keep Ambu Bag ready. 3. Circulation- Start IV and give 1-2 liters RL or NS IV fluids quickly (each liter in 15 minutes), Monitor vital signs, Asses for blood loss and treat*.

<p>(4) Very slow Respiration (<8 per minute)</p> <ul style="list-style-type: none"> • Drowsy • Lethargic • Cyanotic (bluish discoloration of lips and nail beds) • Less responsive to stimuli 	<ul style="list-style-type: none"> • Over sedation from opiates such as pethidine / pentazocine or other drugs e.g. diazepam Or • Anaphylaxis / severe asthma -Severe blood loss 	<ol style="list-style-type: none"> 1. Assess: 2. Airway- Talk with client, stimulate Breathing- Give oxygen by mask-ready Ambu bag, Assess lungs, if wheezing and stridor, follow anaphylactic guidelines. 3. Circulation- -Assess for blood loss and manage*, Take vital signs , Give drugs. 4. Drugs: In case of respiratory depression due to opiates give Naloxone 0.4mg. IV and may repeat same dose after 2 minutes .If no response even after second dose, secure the airway by appropriate size endotracheal l tube/LMA/ Combitube and given artificial respiration through ambu.
<p>(5) Fast Respirations: (>25 per minute) Early stage -Anxiety, Fear -Lungs clear</p>	<p>Hyperventilation due to fear/ anxiety</p>	<ol style="list-style-type: none"> 1. Assess - Airway- Reassure, talk with patient, comfort . 2. Breathing- Assess lungs, clear airway if there is any obstruction. <p>See anaphylaxis below -Observe vital signs</p>
<p>(6)Advanced stage</p> <ul style="list-style-type: none"> • Hives, rash, Skin itching, Anxiety • Fast shallow respiration • Wheezing • Strider • Weakness • Cyanosis 	<p>Allergy - early signs of rash and hives</p> <p>Or</p> <p>Anaphylaxis or severe bronchospasm, including symptoms of respiratory distress</p>	<ol style="list-style-type: none"> 1 Assess - Airway 2. Breathing- Give oxygen by mask, keep Ambu bag ready, Assess lungs - wheezing, constriction and strider, shallow fast respiration. 3. Circulation- Start IV fluids, observe vital signs 4. Drugs: <ul style="list-style-type: none"> • If early signs give Inj. pheniramine - 25 mg, and observe. If symptoms worsen go to no.2. • Give Adrenaline 1:1000, Diluted to 10 ml and give in titrated dose IV. Give 0.5 ml SC/ IV. • May repeat inj. adrenaline every 10 minutes for a maximum of 3 doses. Give Inj. pheniramine 25 mg IM/IV and observe. If symptoms worsen • Give Inj. Dexamathasone 0.8mg IM/IV or hydrocortisone 200 mg IM/IV.
<p>(7) No respirations and No heart beat</p> <ul style="list-style-type: none"> • No pulse or very weak pulse • No breathing • Unable to obtain BP • Cyanotic • Unresponsive 	<p>Cardiac or respiratory arrest</p>	<ol style="list-style-type: none"> 1. Assess - Airway- Position head: head tilt-chin thrust, Insert oral ways 2. Breathing- Resuscitate with Ambu bag/LMA/ Combi-tube, If connector available, attach Ambu bag to oxygen. 3. Circulation- Take carotid pulse, If no pulse, start chest compressions, Start IV and run in 1-2 liters RL or NS quickly 4. Drugs: Atropine 1 mg. IV. May repeat upto 3 mg total, Adrenaline 1:1000 - 0.5 ml diluted in 10-20 ml of IV fluid 3 to 5 min. Repeat adrenaline after 5 minutes.

** Stop bleeding with pressure and/or prepare to assist surgeon with surgical intervention to stop bleeding i.e. laparotomy. Give 1-2 liters of Normal Saline or Ringer Lactate IV solution quickly (1 liter over 15-20 minutes) in order to increase blood volume and prevent hemorrhagic shock.*

Drugs and Supplies

Every clinic / facility should be equipped with basic drugs and supplies and certain drugs and supplies for dealing with an emergency. Because emergency drugs are not used routinely it is easy to be overlooked or out of stock or out of date (expired date).

An emergency kit should be developed for all sites. This kit should contain all the essential drugs and supplies so that it can be quickly taken to the site where emergency has occurred (Pre procedure Room, post procedure room, resting room etc) Oxygen cylinders should be on stand with wheel or easily movable. Every one at the facility should know the location of the emergency kit and other equipment and these should never be kept locked.

Emergency drugs and equipments should be checked daily. The senior member of staff should take the responsibility for the task. S/he should ensure that:

- The required drugs and supplies as per standard list are present.
- The drugs are not expired.
- Sterile items are periodically reprocessed and returned to the kit.
- Equipments are kept clean and in good working order.
- Used or broken items are replaced and
- Battery operated items are working.

Check the following are available / working:

- Oxygen is available and working
- Standby oxygen cylinder available
- Make sure that the oxygen cylinder key is with cylinder.
- Ensure that the suction machine and Ambu bag is available and working
- Ensure that emergency/anaphylaxis medicine tray is available.

Frequently Asked Questions about Female Sterilization

1. Will sterilization change a woman's monthly bleeding or make monthly bleeding stop?

No. Most research finds no major changes in bleeding patterns after female sterilization. If a woman was using a hormonal method or IUD before sterilization, her bleeding pattern will return to the way it was before she used these methods. For example, women switching from combined oral contraceptives to female sterilization may notice heavier bleeding as their monthly bleeding returns to usual patterns. Note, however, that a woman's monthly bleeding usually becomes less regular as she approaches menopause.

2. Will sterilization make a woman lose her sexual desire? Will it make her fat?

No. After sterilization a woman will look and feel the same as before. She can have sex the same as before. She may find that she enjoys sex more because she does not have to worry about getting pregnant. She will not gain weight because of the sterilization procedure.

3. Is it not easier for the woman and the health care provider to use general anesthesia? Why use local anesthesia?

Local anesthesia is safer. General anesthesia is more risky than the sterilization procedure itself. Correct use of local anesthesia removes the single greatest source of risk in female sterilization procedures—general anesthesia. Also after general anesthesia, women usually feel nausea. This does not happen as often after local anesthesia. When using local anesthesia with sedation, however, providers must take care not to overdose the woman with the sedative. They also must handle the woman gently and talk with her throughout the procedure.

This helps her to stay calm. With many clients, sedatives can be avoided, especially with good counseling and a skilled provider.

4. Does a woman who has had a sterilization procedure ever have to worry about getting pregnant again?

Generally, no. Female sterilization is very effective at preventing pregnancy and is intended to be permanent. It is not 100% effective. However, women who have been sterilized have a slight risk of becoming pregnant: About 5 of every 1,000 women become pregnant within a year after the procedure. The small risk of pregnancy remains beyond the first year and until the woman reaches menopause.

5. Pregnancy after female sterilization is rare but why does it happen at all?

Most often it is because the woman was already pregnant at the time of sterilization. In some cases an opening in the fallopian tube develops. Pregnancy can also occur if the provider makes a cut in the wrong place instead of the fallopian tubes.

6. Can sterilization be reversed if the woman decides she wants another child?

Generally no. Sterilization is intended to be permanent. People who may want more children should choose a different family planning method. Surgery to reverse sterilization is possible for only some women—those who have enough fallopian tube left. Even among these women reversal often does not lead to pregnancy. The procedure is difficult and expensive and providers who are

able to perform such surgery are hard to find. When pregnancy does occur after reversal, the risk that the pregnancy will be ectopic is greater than usual. Thus, sterilization should be considered irreversible.

7. Is it better for the woman to have female sterilization or the man to have a vasectomy?

Each couple must decide for themselves which method is best for them. Both are very effective, safe, permanent methods for couples who know that they will not want more children. Ideally, a couple should consider both methods. If both are acceptable to the couple, vasectomy would be preferable because it is simpler, safer, easier and less expensive than female sterilization.

8. Will the female sterilization procedure hurt?

Yes, a little. Women receive local anesthetic to stop pain and, except in special cases, they remain awake. A woman can feel the health care provider moving her uterus and fallopian tubes. This can be uncomfortable.

If a trained anesthetist or anesthesiologist and suitable equipment are available, general anesthesia may be chosen for women who are very frightened of pain. A woman may feel sore and weak for several days or even a few weeks after surgery but she will soon regain her strength.

9. How can health care providers help a woman decide about female sterilization?

Provide clear, balanced information about female sterilization and other family planning methods and help a woman think through her decision fully. Thoroughly discuss her feelings about having children and ending her fertility. For example, a provider can help a woman think how she would feel about possible life changes such as a change of partner or a child's death. Review the six points of Informed Consent to be sure the woman understands the sterilization procedure

10. Does female sterilization increase the risk of ectopic pregnancy?

No. On the contrary, female sterilization greatly reduces the risk of ectopic pregnancy. Ectopic pregnancies are very rare among women who have had a sterilization procedure. The rate of ectopic pregnancy among women after female sterilization is 6 per 10,000 women per year. The rate of ectopic pregnancy among women in the United States using no contraceptive method is 65 per 10,000 women per year. On the rare occasions that sterilization fails and pregnancy occurs, 33 of every 100 (1 of every 3) of these pregnancies are ectopic. Thus, most pregnancies after sterilization failure are not ectopic. Still, ectopic pregnancy can be life-threatening, so a provider should be aware that ectopic pregnancy is possible if sterilization fails.

11. Where can female sterilization be performed?

If no pre-existing medical conditions require special arrangements:

Minilap Tubectomy can be provided in basic health facilities such as PHC/CHC/ district hospitals where surgery can be done. These include both permanent and temporary facilities that can refer the woman to a higher level of care in case of emergency.

Laparoscopy requires a better equipped center where the procedure is performed regularly.

Questionnaire for Assessment of Trainees Knowledge on Minilap Tubectomy Skill Training

[PRE/POST TEST]

Name ; _____ Designation : _____

Place of posting : _____ Date : _____

A. Instructions: In the space provided, write a capital T if the statement is true or a capital F if the statement is false.

COUNSELLING		T/F
1.	Counselling ensures that the client understands the benefits, risks, implications and alternatives to Minilap Tubectomy ligation.	
INDICATIONS AND PRECAUTIONS		
2.	The immediate postpartum period may be the best time for the woman to decide on having postpartum Minilap Tubectomy.	
3.	The provider is the best person to decide on the method the client should use.	
4.	Sterilization lasts for only 5 years after the tubes are occluded.	
5.	A woman who is certain that she wants no more children is a good candidate for ligation.	
6.	A woman with diabetes under control can tolerate Minilap Tubectomy.	
7.	A precaution for not performing Minilap Tubectomy is the finding of a retroverted uterus.	
CLIENT ASSESSMENT		
8.	It is essential to take client's medical history.	
9.	Extensive laboratory examinations are not required prior to Minilap Tubectomy.	
INFECTION PREVENTION		
10.	Decontaminated and cleaned metal instruments can be sterilized by boiling in water for 20 minutes.	
11.	To minimize transmission of Hepatitis B Virus (HBV) or HIV to the staff during the cleaning process, all soiled instruments should first be soaked in 0.5% chlorine solution for 10 minutes.	
ANAESTHESIA		
12.	Verbal support from the operating doctor and nursing staff minimizes client fear and discomfort.	
13.	Taking baseline vital signs of the client is not necessary in elective Minilap Tubectomy.	
14.	After injecting local anaesthesia, the operating doctor should wait for 2–3 minutes before making the incision.	
15.	Using a smaller volume of 2% lignocaine will provide better anaesthesia than a larger volume of 1%.	
PRE-OPERATIVE STEP		
16.	Bladder voiding is not an essential step in performing Minilap Tubectomy.	

FOLLOW UP		
17.	A woman who has had Minilap Tubectomy and misses her period should return to the clinic because she may be pregnant.	
18.	Anaesthesia-related complications are more likely to occur in heavily sedated clients.	

B. Instructions for multiple choice questions: Circle the best option in the following:

12. The best time to perform a Minilap Tubectomy under local anaesthesia is
 - a. anytime during the menstrual cycle
 - b. within the first 48 hours postpartum or more than 6 weeks after delivery
 - c. within the first 6 weeks postpartum
 - d. within the first 10 days postpartum or more than 6 weeks after delivery

13. Prior to performing Minilap Tubectomy procedure, the operating doctor must verify informed consent by
 - a. noting that the consent form is signed and discussing about the client with the counsellor
 - b. ensuring that the consent form is signed by both the client and her husband
 - c. examining the consent form to see that the client's signature was witnessed
 - d. reviewing the consent form for completeness and talking with the client to ensure that she understands the procedure she has requested

14. A pelvic examination by the operating doctor
 - a. must also be performed on the same day as the surgery
 - b. must also be performed after the procedure to ensure that the uterus has not been perforated
 - c. is unnecessary
 - d. should be performed by the nurse to check for infection

15. If a systemic or local (pelvic) infection is noted on the day of the surgery
 - a. the procedure should be performed anyway
 - b. the client should be sent home and told to return when she feels that the infection has been resolved
 - c. laparoscopy should be performed instead of Minilap Tubectomy
 - d. the procedure should be postponed until the client has been treated for the infection and a temporary method should be prescribed

16. When faced with an obese client who requests Minilap Tubectomy under local anaesthesia, the operating doctor should
 - a. plan to use more assistants during the procedure
 - b. plan the procedure at a facility where general anaesthesia and laparotomy can be performed
 - c. suggest that the client lose weight and ask her to return in three months
 - d. use a vertical instead of an horizontal incision

17. After a Minilap Tubectomy procedure, the only acceptable method for processing soiled instruments is
 - a. cleaning followed by sterilization
 - b. decontamination with 0.5% chlorine solution, cleaning, then disinfecting with Povidone iodine
 - c. soaking in Povidone iodine for at least 24 hours
 - d. decontamination with 0.5% chlorine solution, cleaning, followed by sterilization or high-level disinfection

18. The human immunodeficiency virus (HIV/AIDS) and the Hepatitis B virus (HBV) are reliably killed by
 - a. thoroughly rinsing instruments with sterile water which has been boiled
 - b. air drying instruments for at least 48 hours before re-use
 - c. soaking instruments in a 0.5% chlorine solution for 10 minutes
 - d. soaking instruments in a povidone iodine solution immediately after use

19. When preparing the client for surgery, the staff should tell her that
 - a. there will be a lot of pain during the procedure but that she won't feel it because of the medication she will receive
 - b. she will probably feel some discomfort, pulling and slight cramping during the procedure
 - c. the doctor is very good and that she will probably not feel anything during the surgery
 - d. even though she might be feeling some cramping and discomfort during the procedure, she should not mention it during the surgery

20. When infiltrating 1% lignocaine to produce local anaesthesia for a Minilap Tubectomy procedure
 - a. the operating doctor must be sure that only the skin and subcutaneous tissue are infiltrated before starting the procedure
 - b. the incision may be made as soon as the lignocaine is injected
 - c. epinephrine should always be used along with the lignocaine
 - d. the operating doctor must attempt to infiltrate all the layers from the skin to the peritoneum with anaesthetic

21. The following conditions indicate that the client is ready for discharge
 - a. her 8-year-old son has arrived to take her home
 - b. she can walk upright with minimal support
 - c. she complains of nausea and vomiting
 - d. she still feels very drowsy

22. During the post-operative period
 - a. check and record vital signs every 15 minutes until client is stable
 - b. review the client record upon transfer
 - c. complete client record form
 - d. all of the above

23. When performing the Minilap Tubectomy procedure, intra-abdominal bleeding
 - a. occurs solely in the operating theatre
 - b. is related to the level of the anaesthesia
 - c. may occur in the operating theatre or at any time during the post-operative period
 - d. usually occurs in women with a previous history of postpartum haemorrhage.

ANSWER KEY TO MINILAP TUBECTOMY PRE/POST TEST (QUES. 1-18)

Question	Answer	Question	Answer	Question	Answer
1	T	7	F	13	F
2	F	8	T	14	T
3	F	9	T	15	F
4	F	10	F	16	T
5	T	11	T	17	T
6	T	12	T	18	F

ANSWER KEY TO MINILAP TUBECTOMY PRE/POST TEST (QUES. 19-30)

Question	Answer	Question	Answer	Question	Answer
19	B	23	B	27	D
20	D	24	D	28	B
21	A	25	C	29	D
22	D	26	B	30	C

Questionnaire for Assessment of Trainees Knowledge on Laparoscopic Tubal Occlusion Skill Training

[PRE/POST TEST]

Name ; _____ Designation : _____

Place of posting : _____ Date : _____

A. Instruction: In the space provided, write a capital T if the statement is true or a capital F, if the statement is false.

COUNSELLING		T / F
1	Counselling ensures that the client understands the benefits, risks, implications and alternatives to tubal ligation.	
2	Counselling is synonymous with getting informed consent.	
3	The provider is the best person to decide on the method the client will use.	
INDICATIONS AND PRECAUTIONS		
4	Sterilization lasts for only 5 years after the tubes are occluded.	
5	A woman who is certain that she wants no more children is a good candidate for tubal ligation.	
6	A woman with diabetes under control can tolerate laparoscopy tubal occlusion.	
7	A precaution (contraindication) for not performing laparoscopy tubal occlusion is a finding of a retroverted (posterior) uterus.	
8	Chronic systemic diseases such as pulmonary tuberculosis are an absolute contraindication for laparoscopy tubal Occlusion.	
CLIENTS ASSESSMENT		
9	A trained paramedical may carry out medical history screening using a checklist prepared by a doctor.	
10	Extensive laboratory examinations are not required prior to laparoscopy tubal occlusion.	
INFECTION PREVENTION		
11	Decontaminated and cleaned metal instruments can be sterilized by boiling in water for 20 minutes.	
12	To minimize transmission of HBV or HIV to the staff during the cleaning process, all soiled instruments should first be soaked in 0.5% chlorine solution for 10 minutes.	
13	High-level disinfected instruments and gloves may be used in laparoscopy tubal occlusion when sterilization by autoclaving is not available.	
14	Alcohol, iodine and iodophors are not considered high-level disinfectants.	
ANAESTHESIA		
15	Verbal support from the operating doctor and nursing staff minimizes client's fear and discomfort.	
16	Taking baseline vital signs of the client is not necessary for elective laparoscopy tubal n.	

17	Most clients will require a paracervical block (injection of a small amount of local anaesthesia) prior to inserting the elevator.	
18	After injecting local anaesthesia, the operating doctor should wait for 2 to 3 minutes before making the incision.	
19	Using a smaller volume of 2% lignocaine will provide better anaesthesia than a larger volume of 1%.	
FOLLOW-UP AND MANAGEMENT OF COMPLICATIONS		
20	Serious anaesthesia-related complications are more likely to occur in heavily sedated clients.	
21	Bladder voiding is not a critical step in performing laparoscopy tubal occlusion.	
22	The first follow-up is scheduled 1 week after surgery.	

B. Instructions for multiple choice questions: Circle the best option in the following.

23. When performing a laparoscopy tubal occlusion under local anaesthesia, the minimum acceptable nursing staff consists of:
- One qualified nurse.
 - Two scrub nurses (surgical assistants), an O.T. attendant and a specialist in infection prevention.
 - A scrub nurse (surgical assistant) and an O.T. attendant who will also provide support for the client.
 - A counsellor and an O.T. attendant.
24. The best time to perform a laparoscopy tubal occlusion under local anaesthesia is:
- Any time during the menstrual cycle, provided the client is not pregnant.
 - Concurrently with first trimester termination of pregnancy.
 - 4-6 weeks after vaginal delivery.
 - All of the above.
25. Laparoscopy tubal occlusion is best described as:
- Performed on an interval basis.
 - Requiring an abdominal incision not more than 2 cms long.
 - Done under local anaesthesia and on an outpatient basis.
 - All of the above.
26. Prior to performing a laparoscopy tubal occlusion procedure, the operating doctor must verify informed consent by:
- Noting that the consent form is signed and discussing the client with the counsellor.
 - Ensuring that the consent form is signed by both the client and her husband.
 - Examining the consent form to see that the client's signature was witnessed.
 - Reviewing the consent for completeness and talking with the client to ensure that she understands the procedure she has requested.
27. If a pelvic examination was done by another clinician during the initial pre-operative assessment, then another pelvic examination:
- Must be performed before the surgery by the operating doctor.
 - Must be performed after the procedure to ensure that the uterus has not been perforated.
 - Is unnecessary.
 - Should be performed by the nurse to check for infection.
28. If a systemic or local (pelvic) infection is noted on the day of the surgery:
- The procedure should be performed anyway.
 - The client should be sent home and told to return when she feels that the infection has been resolved.

- c. Minilaparotomy should be performed instead of Laparoscopy Tubal occlusion.
 - d. The procedure should be postponed until the client has been treated for the infection and a temporary method should be prescribed.
29. When faced with an obese client who requests laparoscopy tubal occlusion under local anaesthesia, the operating doctor should:
- a. Plan to use more assistants during the procedure.
 - b. Plan the procedure at a facility where general anaesthesia and laparotomy can be performed.
 - c. Suggest that the client lose weight and ask her to return in 3 months.
 - d. Use a vertical instead of an horizontal incision.
30. After a laparoscopy tubal occlusion procedure, the only acceptable method for processing a used Laparoscope is:
- a. Cleaning, followed by sterilization.
 - b. Decontamination with 0.5% chlorine solution, cleansing, then disinfection with Dettol.
 - c. Soaking in Dettol at least for 24 hours.
 - d. Decontamination with gauze soaked in 60-90% alcohol solution, cleaning, followed by chemical sterilization or high-level disinfection.
31. The human immunodeficiency virus (HIV/AIDS) and the hepatitis B (HBV) are reliably killed by:
- a. Thoroughly rinsing instruments with sterile water that has been boiled.
 - b. Air drying instruments for at least 48 hours before re-use.
 - c. Soaking instruments in a 0.5% chlorine solution for 10 minutes
 - d. Soaking instruments in a povidine iodine solution immediately after use
32. The operating table should be cleaned thoroughly with a disinfectant solution like 0.5% chlorine solution.
- a. After any contaminated case and weekly.
 - b. Between all cases and also on a monthly basis.
 - c. Between all cases and on a weekly basis.
 - d. After all cases with more than 250 cc of blood loss.
33. When preparing the client for surgery, the staff should tell her that:
- a. There will be a lot of pain during the procedure but that she won't feel it because of the medication she will receive.
 - b. She will probably feel some tugging, pulling and slight cramping during the procedure.
 - c. The doctor is very good and that she will probably not feel anything during the surgery.
 - d. Even though she may feel some cramping and discomfort during the procedure she should not mention it during the surgery.
34. Local anaesthesia for laparoscopy tubal occlusion involves:
- a. Using 1 % lignocaine and adrenaline.
 - b. Sedating all clients with meperidine 100mg and diazepam 10mg.
 - c. Infiltrating abdominal wall layers with 1 % lignocaine.
 - d. All of the above.
35. When infiltrating 1% lignocaine to produce local anaesthesia for laparoscopy tubal occlusion procedure:
- a. the operating doctor must be sure that only the skin and subcutaneous tissue are infiltrated before starting the procedure.
 - b. The incision may be made as soon as lignocaine is injected.
 - c. Epinephrine should always be used along with the lignocaine.
 - d. The operating doctor must attempt to infiltrate all layers from the skin to the peritoneum with anaesthetic.

36. Successful use of local anaesthesia for a laparoscopy tubal occlusion procedure requires:
- An anaesthetist.
 - Use of enough sedation so that the client is asleep.
 - Continuous communication with the client during surgery.
 - At least 25 cc of 2% lignocaine.
37. If the uterus is retroverted, the uterine elevator should:
- Not be used.
 - Be inserted into the cervix with the tip downward after which the handle is rotated.
 - Be inserted in the same way as for an anteverted uterus.
 - Be inserted after the abdomen has been opened, so that the uterus can be visualized.
38. The following conditions indicate that the client is ready for discharge:
- Her 8-year-old son has arrived to take her home.
 - She can walk upright with minimal support.
 - She complains of nausea and vomiting.
 - She still feels very drowsy.
39. During the post-operative period, the client monitor should:
- Check and record vital signs every 15 minutes until client is stable.
 - Review the client record upon transfer.
 - Complete client record form.
 - All of the above.
40. Some of the intraoperative complications of laparoscopy tubal occlusion include:
- Gas or air embolism.
 - Respiratory depression or arrest.
 - Bleeding from mesosalpinx.
 - All of the above.
41. When performing the laparoscopy tubal occlusion procedure:
- Nitrous oxide is the preferred gas for insufflation.
 - Pneumoperitoneum should be greater than 20 mm of mercury.
 - The skin incision is not to exceed the diameter of the trocar.
 - All of the above.
42. To minimize complications during laparoscopy tubal occlusion, the operating doctor should remember that:
- The client must not be placed in a Trendelenburg position of greater than 15 degrees.
 - Pneumoperitonium must not exceed 2 litres of air.
 - Electrocautery should not be used for tubal ligation.
 - All of the above.

ANSWER KEY TO LAPAROSCOPIC TUBAL OCCLUSION PRE/POST TEST (QUES. 1-22)

Question	Answer	Question	Answer	Question	Answer
1	T	9	T	17	F
2	F	10	F	18	T
3	F	11	F	19	F
4	F	12	T	20	T
5	T	13	T	21	F
6	T	14	T	22	T
7	F	15	T		
8	F	16	F		

ANSWER KEY TO LAPAROSCOPIC TUBAL OCCLUSION PRE/POST TEST (QUES. 23-42)

Question	Answer	Question	Answer	Question	Answer
23	C	30	D	37	B
24	D	31	C	38	B
25	D	32	A	39	D
26	D	33	B	40	D
27	A	34	C	41	C
28	D	35	D	42	D
29	B	36	C		

Individual and Group Assessment Matrix

DATE: _____ TRAINER(S): _____

For Minilap Tubectomy skill Training

Ques.no.	TRAINEES										Number Correct	%Correct
	1	2	3	4	5	6	7	8	9	10		
1 to 30												

For Laparoscopic Tubal Occlusion skill Training

Ques.no.	TRAINEES										Number Correct	%Correct
	1	2	3	4	5	6	7	8	9	10		
1 to 42												

Checklist for Clinical Skills in Post Partum Minilap Tubectomy Procedure

Rate the performance of each step or task observed using the following rating scale:

- 1 **Needs Improvement:** Step or task not performed correctly or out of sequence (if necessary) or is omitted
- 2 **Competently Performed:** Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently
- 3 **Proficiently Performed:** Step or task performed efficiently and precisely in proper sequence (if necessary)

STEP / TASKS		CASES				
PRE-PROCEDURE ASSESSMENT OF CLIENT						
1	Greet client respectfully and establish rapport.					
2	Counsel the client appropriately about method options					
3	Elicit relevant clinical history, do physical examination including bimanual P/V examination and basic blood (haemoglobin) and urine (sugar & albumin) tests.					
4	Obtained informed consent for the method chosen					
5	Provide necessary pre-procedure instructions and address if query.					
PRE-PROCEDURE TASKS						
6	Review client's case record, if necessary repeat bimanual P/V examination on the OT table.					
7	Check informed consent obtained and verify client's identity.					
8	Ensure that client has thoroughly washed abdominal and pelvic areas and changed to hospital cloths.					
9	Ensure that client has recently voided.					
10	Help to position client flat on her back on operating table.					
11	Determine that sterile or high level disinfected instruments and emergency tray are present.					
12	Take and record vital signs.					
13	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
14	Place client in a lithotomy position.					
15	Put new examination gloves on both hands.					
16	Perform a per speculum examination to rule out any lesion in the cervix.					
17	Perform a gentle bimanual pelvic examination.					

STEP / TASKS		CASES				
18	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					
19	If IM pre-medication is to be used, give at least half an hour before the procedure or give IV medication, if needed (initial or maximum dose based on client's weight).					
20	Change into surgical apparel					
21	Perform surgical scrub (3-5 minutes) and put on clean or sterile gown.					
22	Put sterile surgical gloves on both hands.					
23	Select incision site about 1-2 cm inferior to uterine fundus.					
24	Apply antiseptic solution to the incision area two times using a circular motion.					
25	Prepare 20 ml of 1% lignocaine solution by diluting 10ml of 2% lignocaine with equal volume of sterile distilled water or normal saline.					
26	Drape client for the procedure.					
27	Throughout procedure talk to the client (verbal anaesthesia).					
LOCAL ANAESTHESIA						
28	Raise a small skin wheal at the centre of incision site using 1% lignocaine (or equivalent) in a 10 or 20 ml sterile or high level disinfected syringe (dose 5mg/kg).					
29	Starting at the centre of the planned incision, administer local anaesthesia (about 3-5 ml) just under the skin along both sides of the incision line.					
30	Without withdrawing the needle again starting at the centre of the incision line, insert needle into the fascia at a 45o angle with the needle directed slightly superior the incision line.					
31	Aspirate to ensure the needle is not in a blood vessel; then, while injecting 3-5 ml of lignocaine, withdraw the needle slowly upto the subcutaneous level and repeat on the other side of incision line.					
32	Insert the needle down through the rectus sheath to the peritoneum, aspirate and inject 1-2 ml into the peritoneal layer.					
33	Withdraw needle and place in a safe area to prevent accidental needle pricks.					
34	Massage the skin to spread the anaesthetic within the tissues.					
35	Test incision site with forceps tip for adequate anaesthesia. (If client feels pain, wait 2-3 more minutes and retest incision site).					
OPERATIVE PROCEDURE						
A. ABDOMINAL ENTRY						
36	Make transverse/ vertical, subumbilical skin incision, approximately 3 cm long at the preselected incision site (about 1-2 cm inferior to uterine fundus).					

STEP / TASKS		CASES				
37	Bluntly dissect subcutaneous tissues with scissor tips or fingers.					
38	Identify and grasp fascia at two places with the Allis forceps and cut with scissors.					
39	Separate rectus muscles in the midline (longitudinally) using blunt dissection with artery forceps and clean off pre peritoneal tissue if needed.					
40	Confirm identification of peritoneum.					
41	While elevating the peritoneum with the forceps, make a small nick in the peritoneum with knife/scissors after confirming that there is no underlying bowel or abdominal viscera.					
42	Enlarge opening vertically with scissors/ fingers, place artery forceps on upper and lower cut edges of peritoneum and reposition retractors longitudinally within the peritoneal cavity. (Place client in head-down, Trendelenburg position, if needed).					
B. LOCATING FALLOPIAN TUBES						
43	Visually confirm presence of uterine fundus underneath the incision site					
44	With the retractors in place, gently reposition the incision over the right or left adnexa by manipulating the uterus through the abdominal wall.					
C. GRASPING THE FALLOPIAN TUBES						
45	Identify mid portion of fallopian tube and gently grasp that with Babcock's forceps.					
46	Gently bring the tube with the Babcock's forceps (do not lock to avoid damage to the tube) through the incision.					
47	Identify the tube by tracing the tube laterally till the fimbrial end.					
D. TUBAL OCCLUSION						
48	While grasping the mid-portion of tube, transfix the tube with chromic catgut 1- 0 making a loop of about 2-3 cms.					
49	Tie the knots on both the sides of the tube.					
50	Cut out one end of the loop and then the other with scissors ensuring that at least one cm. of the tubal stump above the ligature has been left behind.					
51	While still holding the ligature inspect the stump for haemostasis and then release the tube, allowing it to return to the abdomen.					
52	Repeat procedure on opposite side for the second tube.					
E. CLOSURE (When haemostasis assured, close wound in layers).						
53	The closure of peritoneum is optional.					
54	Secure the rectus sheath edges with interrupted/ continuous sutures.					
55	Close skin with the same absorbable /non absorbable suture material.					
56	Dress the wound					

STEP / TASKS		CASES				
POST-OPERATIVE TASKS						
57	Ensure that client is safely transferred to the post-operative (Recovery) area.					
58	Ensure that the assistant disposes of disposable needles and syringes in a puncture-proof container or fill reusable needles and syringes with 0.5% chlorine solution and soaks for decontamination for 10 minutes.					
59	Ensure that assistant decontaminates instruments by soaking in 0.5% chlorine solution for 10 minutes.					
60	Check that assistant disposes of waste materials according to infection prevention guidelines.					
61	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.					
62	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
63	Ensure that client is monitored at regular intervals and that vital signs are taken.					
64	Determine that client is ready for discharge (at least 2 hours after IV medication).					
65	Ensure that post-operative instructions and follow-up schedule are given.					

Checklist for Clinical Skills in Interval Minilap Tubectomy Procedure

Rate the performance of each step or task observed using the following rating scale:

- 1 Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted.
- 2 Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently.
- 3 Proficiently Performed: Step or task performed efficiently and precisely in proper sequence (if necessary).

STEP / TASKS		CASES				
PRE-PROCEDURE ASSESSMENT OF CLIENT						
1	Greet client respectfully and establish rapport.					
2	Counsel the client appropriately about method options					
3	Elicit relevant clinical history, do physical examination including bimanual P/V examination and basic blood (haemoglobin) and urine (sugar & albumin) tests.					
4	Obtained informed consent for the method chosen.					
5	Provide necessary pre-procedure instructions and address if query.					
PRE-PROCEDURE TASKS						
6	Review client's case record, if necessary repeat bimanual P/V examination on the OT table.					
7	Check informed consent obtained and verify client's identity					
8	Ensure that client has thoroughly washed abdominal and pelvic areas and changed to hospital cloths.					
9	Ensure that client has recently voided.					
10	Help to position client flat on her back on operating table.					
11	Determine that sterile or high level disinfected instruments and emergency tray are present.					
12	Take and record vital signs.					
13	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
14	Place client in a lithotomy position.					
15	Put new examination gloves on both hands.					
16	Perform a gentle bimanual pelvic examination.					
17	Perform a per speculum examination to rule out any lesion in the cervix.					

STEP / TASKS		CASES				
18	Insert Uterine Elevator by holding the anterior lip of the cervix with a vulsellum and gently pass the sterile Uterine elevator without touching the vaginal wall. {The Steps 13 & 14 are not always necessary if fallopian tubes are delivered with fingers}					
19	Take the vulsellum out and put the client in supine position with the uterine elevator in position.					
20	Dispose the gloves, place in leak-proof container or plastic bag.					
21	If IM pre-medication is to be used, give at least half an hour before the procedure or give IV medication, if needed (initial or maximum dose based on client's weight).					
22	Change into surgical apparel.					
23	Perform surgical scrub (3-5 minutes) and put on clean or sterile gown.					
24	Put sterile surgical gloves on both hands.					
25	Select incision site about 1-2 cm inferior to uterine fundus.					
26	Apply antiseptic solution to the incision area two times using a circular motion.					
27	Prepare 20 ml of 1% lignocaine solution by diluting 10ml of 2% lignocaine with equal volume of sterile distilled water or normal saline.					
28	Drape client for the procedure.					
29	Throughout procedure talk to the client (verbal anaesthesia).					
LOCAL ANAESTHESIA						
30	Raise a small skin wheal at the centre of incision site using 1% lignocaine (or equivalent) in a 10 or 20 ml sterile or high level disinfected syringe (dose 5mg/kg).					
31	Starting at the centre of the planned incision, administer local anaesthesia (about 3-5 ml) just under the skin along both sides of the incision line.					
32	Without withdrawing the needle again starting at the centre of the incision line, insert needle into the fascia at a 45o angle with the needle directed slightly superior the incision line.					
33	Aspirate to ensure the needle is not in a blood vessel; then, while injecting 3-5 ml of lignocaine, withdraw the needle slowly upto the subcutaneous level and repeat on the other side of incision line.					
34	Insert the needle down through the rectus sheath to the peritoneum, aspirate and inject 1-2 ml into the peritoneal layer.					
35	Withdraw needle and place in a safe area to prevent accidental needle pricks.					
36	Massage the skin to spread the anaesthetic within the tissues.					
37	Test incision site with forceps tip for adequate anaesthesia. (If client feels pain, wait 2-3 more minutes and retest incision site).					

STEP / TASKS		CASES				
OPERATIVE PROCEDURE						
A. ABDOMINAL ENTRY						
38	Make transverse/ vertical, suprapubic skin incision, approximately 3 cm long at the preselected incision site (about 2to 3 cm above the pubic symphysis).					
39	Bluntly dissect subcutaneous tissues with scissor tips or fingers.					
40	Identify and grasp fascia at two places with the Allis forceps and cut with scissors.					
41	Separate rectus muscles in the midline (longitudinally) using blunt dissection with artery forceps and clean off pre peritoneal tissue if needed.					
42	Confirm identification of peritoneum.					
43	While elevating the peritoneum with the forceps, make a small nick in the peritoneum with knife/scissors after confirming that there is no underlying bowel or abdominal viscera.					
44	Enlarge opening vertically with scissors/ fingers, place artery forceps on upper and lower cut edges of peritoneum and reposition retractors longitudinally within the peritoneal cavity. (Place client in head-down, Trendelenburg position, if needed).					
B. LOCATING FALLOPIAN TUBES – (i) Using Finger Technique						
45	Insert index finger or index and middle finger of the one hand inside the incision and feel for the fundus of the uterus.					
46	Slide the finger/s along the fundus laterally and a little posteriorly and feel for the Fallopian tube.					
47	Trace the tube laterally with the fingers and roll it between them to confirm that it is the Fallopian tube. If using one finger then hook the tube, lift it and roll it against the anterior abdominal wall [the Fallopian tube will be soft and mobile].					
48	Bring the fallopian tube out near the abdominal opening and hold with a Babcock forceps					
C. LOCATING FALLOPIAN TUBES – (ii) Using Tubal Hook						
49	With one hand Surgeon (right for right handed person) will elevate the uterus at the midline and turn towards left to be bring the right fallopian tube near the abdominal opening.					
50	Keep Babcock forceps on the other hand and hold the fallopian tube as soon as it will be visible. While assistant positions both the retractors to facilitates the view of the tube.					
51	To confirm that fallopian tube has been correctly hold - trace the fallopian tube by holding with non-tooth dissecting forceps or another Babcock forceps till the fimbrial end is seen.					
52	Bring the fallopian tube out near the abdominal opening by holding with a Babcock forceps.					

STEP / TASKS		CASES			
D. GRASPING THE FALLOPIAN TUBES					
53	Identify mid portion of fallopian tube and gently grasp that with Babcock's forceps.				
54	Gently bring the tube with the Babcock's forceps (do not lock to avoid damage to the tube) through the incision.				
55	Identify the tube by tracing the tube laterally till the fimbrial end.				
E. TUBAL OCCLUSION					
56	While grasping the mid-portion of tube, transfix the tube with chromic catgut 1-0 making a loop of about 2-3 cms.				
57	Tie the knots on both the sides of the tube.				
58	Cut out one end of the loop and then the other with scissors ensuring that at least one cm. of the tubal stump above the ligature has been left behind.				
59	While still holding the ligature inspect the stump for haemostasis and then release the tube, allowing it to return to the abdomen.				
60	Repeat procedure on opposite side for the second tube.				
F. CLOSURE (When haemostasis assured, close wound in layers)					
61	The closure of peritoneum is optional.				
62	Secure the rectus sheath edges with interrupted/continuous sutures.				
63	Close skin with the same absorbable /non absorbable suture material.				
64	Dress the wound				
POST-OPERATIVE TASKS					
65	Ensure that client is safely transferred to the post-operative (Recovery) area.				
66	Ensure that the assistant disposes of disposable needles and syringes in a puncture-proof container or fill reusable needles and syringes with 0.5% chlorine solution and soaks for decontamination for 10 minutes.				
67	Ensure that assistant decontaminates instruments by soaking in 0.5% chlorine solution for 10 minutes.				
68	Check that assistant disposes of waste materials according to infection prevention guidelines.				
69	Briefly immerse gloved hands in chlorine solution. If disposing of gloves, place in leak-proof container or plastic bag. If reusing gloves, soak in chlorine solution for 10 minutes.				
70	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.				
71	Ensure that client is monitored at regular intervals and that vital signs are taken.				
72	Determine that client is ready for discharge (at least 2 hours after IV medication).				
73	Ensure that post-operative instructions and follow-up schedule are given.				

Checklist for Clinical Skills in Laparoscopic Tubal Occlusion Procedure

(To be used by Participants)

Rate the performance of each step or task observed using the following rating scale:

- 1 Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted.
- 2 Competently Performed: Step or task performed correctly in the proper sequence (if necessary) but participant does not progress from step to step efficiently.
- 3 Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary).

STEP / TASKS		CASES				
PRE-PROCEDURE ASSESSMENT OF CLIENT						
1	Greet client respectfully and establish rapport.					
2	Counsel the client appropriately about method options					
3	Elicit relevant clinical history, do physical examination including bimanual P/V examination and basic blood (haemoglobin) and urine (sugar & albumin) tests.					
4	Obtained informed consent for the method chosen					
5	Provide necessary pre-procedure instructions and address if query					
PRE-PROCEDURE TASKS						
6	Review client's case record, if necessary repeat bimanual P/V examination on the OT table.					
7	Check informed consent obtained and verify client's identity.					
8	Ensure that client has thoroughly washed abdominal and pelvic areas and changed to hospital cloths.					
9	Ensure that client has recently voided.					
10	Help to position client flat on her back on operating table.					
11	Determine that sterile or high level disinfected instruments and emergency tray are present.					
12	Take and record vital signs.					
13	Wash hands thoroughly with soap and water and air dry or dry with clean cloth.					
14	Place client in a lithotomy position.					
15	Put new examination gloves on both hands.					
16	Perform a gentle bimanual pelvic examination.					
17	Perform a per speculum examination to rule out any lesion in the cervix.					
18	Apply antiseptic solution two times to the cervix and vagina and hold cervix with vulsellum.					

STEP / TASKS		CASES				
19	Insert Uterine Elevator by holding the anterior lip of the cervix with a vulsellum and gently pass the sterile Uterine elevator without touching the vaginal wall.					
20	Take the vulsellum out carefully without dislodging uterine elevator and put the vulsellum in 0.5% chlorine solution for decontamination.					
21	Dispose the gloves, place in leak-proof container or plastic bag.					
22	Slowly put the client in supine position with the uterine elevator in position.					
23	If IM pre-medication is to be used, give at least half an hour before the procedure or give IV medication, if needed (initial or maximum dose based on client's weight).					
24	Change into surgical apparel.					
25	Perform surgical scrub (3-5 minutes) and put on clean or sterile gown.					
26	Put sterile surgical gloves on both hands.					
27	Check the working of the Laparoscope with its Ring applicator.					
28	Check the pressure gauze of the Pneumoperitoneal unit with availability of carbon di oxide and Light source.					
29	Drape client for the procedure.					
30	Throughout procedure talk to the client (verbal anaesthesia)					
LOCAL ANAESTHESIA						
31	Raise a small skin wheal at center of incision site (infra-umbilical region) using 1% lignocaine (or equivalent) in a 10 sterile or high-level disinfected syringe (dose 5 mg/kg). CAUTION: When passing sharps, have them placed in a sterile or high-level disinfected kidney basin.					
32	Starting at the center of the planned incision, administer local anaesthetic (about 2 ml) just under the skin along both sides of the incision line.					
33	Again starting at the center of the incision line, insert needle into the fascia at a 45° angle with the needle directed slightly caudal to the incision line.					
34	Aspirate to ensure the needle is not in a blood vessel; then, while injecting 3-5 ml of lignocaine, withdraw the needle slowly.					
35	Insert the needle down through the rectus sheath to the peritoneum, aspirate and inject 1-2 ml into the peritoneal layer.					
36	Massage the skin to spread the anaesthetic within the tissues.					
37	Test incision site with tissue forceps for adequate anaesthesia. (If client feels pain, wait 2-3 more minutes and retest incision site).					
CREATING PNEUMOPERITONEUM with Veress Needle						
38	Place client in a head down (Trendelenburg) position of not more than 20 degrees.					

STEP / TASKS		CASES				
39	Immobilize the inferior margin of the umbilical ring by gently pinching the inferior border of the umbilicus between the thumb and the forefinger of the non-dominant hand and lift the abdominal wall away from the intestines.					
40	Make a 1.5-2 cm incision along the rim of the inferior umbilical margin.					
41	Grasp the shaft of the Veress needle and insert at a 45° caudal angle to the abdominal wall. Two distinct gives will be felt as the fascia is penetrated and the peritoneum is entered.					
42	Check for correct abdominal entry by placing a drop of anaesthetic on the Veress needle LuerLok opening and observing its ingress when the abdominal wall is lifted manually. (Alternatively, use the pressure gauge of the insufflator apparatus to check for negative intra-abdominal pressure).					
43	Connect the sterile or high-level disinfected insufflator tubing to the Veress needle stop cock. Ask the assistant to connect the other end to the insufflator.					
44	Start insufflating CO ₂ using the high flow switch of the insufflator to introduce carbon dioxide at the rate of 1 litre per minute.					
45	Percuss the hypogastric area and listen for a drum-like sound, which will indicate pneumoperitoneum.					
46	Remove Veress needle after insufflating 1.5-2.0 litres of carbon dioxide or when the hypogastrium attains a 20-week or 5-month gestation size.					
47	Tell assistant to load tubal rings on the ring applicator.					
ABDOMINAL ACCESS						
48	Recheck trumpet valve and rubber seal of trocar sleeve to assure airtightness.					
49	Assemble the trocar unit by inserting the obturator into the trocar sleeve.					
50	Manually grasp and raise the anterior abdominal wall directly beneath the umbilicus with the left hand.					
51	Hold the fully assembled trocar on the palm of the right hand, making sure that the thenar eminence is resting on the superior end of the obturator.					
52	Tilt handle of trocar cephaloid to a 60-70° angle, directing the tip of the obturator to an imaginary point where the Pouch of Douglas is located. Apply downward and twisting force to traverse the fascia and peritoneum. Stop after the second give is felt.					
53	Slightly retract obturator and advance trocar sleeve 1-2 cm into the abdominal cavity. Completely remove obturator.					
54	Connect the insufflator tubing to the trocar stop cock. Insufflate air as needed.					
55	Connect the fiber-optic light cable to the Laparoscope and ask the floor assistant to switch on the light source.					

STEP / TASKS		CASES				
56	Hold trocar trumpet valve mechanism between middle finger and thenar eminence of the left hand in palms down position.					
57	Hold the hand grip assembly of the Laparoscope using the thumb, middle and ring fingers of the right hand. Allow the index finger to remain free.					
58	Insert Laparoscope slowly under direct vision. Manoeuvre Laparoscope - trocar unit towards pelvic cavity.					
59	Inspect and identify pelvic cavity structures. Elevate the uterus by depressing handle of the uterine elevator/ manipulator.					
LAPAROSCOPICALLY GUIDED TUBAL OCCLUSION						
60	Locate and verify the tube by identifying anatomical landmarks such as the cornu and fimbria.					
61	Extend Ring applicator forceps tongs fully by pushing the trigger operating slide away from the handgrip.					
62	Place the posterior tong under the inferior aspect of the tube, about 4 cm away from the cornu. Slightly lift it toward the anterior abdominal wall to allow excess mesosalpinx to fall off.					
63	Slowly retract the tongs by pulling the trigger operating slide toward the hand grip. Move the Laparoscope forward during tong retraction to reduce risk of lacerating or injuring the tube. Continue retracting until spring tension is felt.					
64	Using index finger, check that ring adaptor is in position no.1. Apply additional pressure to the operating slide to overcome the spring tension and to release the Falope ring.					
65	Slowly push away the operating slide to extend the forceps tongs and release the occluded fallopian tube.					
66	Inspect for adequacy of occlusion and for any active bleeding. Completely retract forceps tongs prior to inspection.					
67	Locate and verify the other tube.					
68	Place two ring adaptor in no.2 position. Repeat Steps 32-37 to occlude the other tube.					
69	Inspect pelvic cavity for bleeding and other organ injuries.					
70	Remove Laparoscope from abdominal cavity and disconnect external light source.					
71	Keep open the trocar trumpet valve to de-sufflate the abdomen slowly.					
72	Remove trocar after inserting the obturator in trocar sleeve.					
73	Close incision with a single, simple stitch using absorbable or non-absorbable suture material.					
74	Dress the wound.					

STEP / TASKS		CASES				
POST-OPERATIVE TASKS						
75	Remove the uterine elevator/manipulator and place in 0.5% chlorine solution.					
76	Ensure that client is safely transferred to the post-operative (recovery) area.					
77	Ensure that the assistant disposes of disposable needles and syringes in a puncture proof container or fill reusable needles and syringes with 0.5% chlorine solution and soaks for decontamination for 10 minutes.					
78	Ensure that the assistant places instruments in 0.5% chlorine solution for decontamination and soaks for 10 minutes.					
79	Check that assistant disposes of waste materials according to infection prevention guidelines.					
80	Remove both the gloves and place in leak-proof container or plastic bag.					
81	Wash hands thoroughly with soap and water and air dry.					
82	Ensure that client is monitored at regular intervals and that vital signs are taken.					
83	Determine that client is ready for discharge 4-6 hours after operation.					
84	Ensure that post-operative instructions and follow-up schedule are given.					

Checklist for Counselling Skills In Female Sterilization Procedure

Rate the performance of each step or task observed using the following rating scale:

- 1 Needs Improvement: Step or task not performed correctly or out of sequence (if necessary) or is omitted.
- 2 Competently Performed: Step or task performed correctly in proper sequence (if necessary) but participant does not progress from step to step efficiently.
- 3 Proficiently Performed: Step or task efficiently and precisely performed in the proper sequence (if necessary).

STEP/TASK		CASES				
INITIAL INTERVIEW (Client Reception Area)						
1	Greet woman respectfully and with kindness.					
2	Establish purpose of the visit and answer questions.					
3	Provide general information about family planning.					
4	Give the woman information about the contraceptive choices available and the risks and benefits for each. Explain the difference between reversible and permanent contraception. Correct false rumours or misinformation about all methods.					
5	5. Explain what to expect during the clinic visit.					
METHOD-SPECIFIC (Counselling Area)						
6	Assure necessary privacy.					
7	Obtain biographic information (name, address, etc.).					
8	Ask the client about her reproductive goals (Does she want to space or limit births?) and need for protection against RTI/ STI.					
9	Discuss the client's needs, concerns and fears in a thorough and sympathetic manner.					
10	Help the client begin to chose an appropriate method.					
11	Screen the client carefully to make sure there is no medical condition that would be a problem. (Complete Client Screening Checklist).					
12	Clearly discuss the benefits of laparoscopic tubal Occlusion. Emphasize that it is a permanent method but there is a small risk of failure.					
13	Explain the importance of the spouse being involved in decision for voluntary Sterilization.					
14	Explain that laparoscopic tubal Occlusion does not protect against RTI/ STIs. (If the client is at risk, she may need to use a barrier contraceptive method also).					
15	Explain common complications of the surgical procedure and be sure they are fully understood.					

STEP/TASK		CASES				
16	Explain the surgical procedure and what to expect during and afterwards.					
17	Discuss scheduling procedure and possible need for contraception prior to sterilization.					
18	Obtain client's signature or thumb print on the informed consent form.					
PRE-PROCEDURE (Examination/Procedure Area)						
19	Review client history and physical examination to assure proper client selection.					
20	Verify client's identity and check that informed consent was obtained.					
21	Explain that she will feel a little pain during the procedure and she should inform a member of the surgical team if she feels any discomfort at any time.					
POST-PROCEDURE						
22	After sedation has worn off give postoperative instructions orally and in writing if appropriate. Ask client to repeat instructions.					
23	Discuss what to do if the client experiences any problems.					
24	Schedule a return visit within 7 days and after her first menstrual period.					
25	Make her aware that Sterilization Certificate will be issued after her next menstrual period.					
26	Appraise her that if she misses her next menstrual period she must report to this or nearby clinic within two weeks of the expected date of her period to rule out pregnancy.					
27	Discuss arrangements for discharge (e.g. person accompanying client home).					
28	Assure client she can return to the same or any nearby clinic at any time to receive advice or medical attention.					
29	Answer client questions.					

Laparoscopic System

17.1 Component of Laparoscopic System

The Laparoscope is a surgical instrument designed to visualize the abdominal cavity. It is also equipped for application of the Falope ring on the fallopian tubes of women who desire permanent contraception. In some gynaecologic problems, the Laparoscope is also utilized as a diagnostic tool. The Laparoscope has an overall length of 38 cm, working length of 21 cm and a working diameter of 10 mm. A single puncture Laparoscope has following parts –

1. The main body of the Laparoscope has outer tube which contains the inner tube and the forceps.
2. Inner Tube has a coiled spring on one end that provides spring action for release of the silastic ring when the trigger is pulled.
3. The forceps tongs are used to pick up the fallopian tube for application of the silastic ring. The forceps can be extended and retracted into the Laparoscope.
4. Two Ring Adaptor is a movable part that is rotated forward to allow application of the first ring and shifted upward to allow for the application of the second ring.
5. Telescope Assembly provides a magnified view of the peritoneal cavity through a complex set of lenses that are very fragile and break easily if handled roughly or dropped. The viewing angle is 180 degrees and the field of view is 70 to 80 degrees.
6. Fiber-optic Light Connection is the attachment for the light source through the Laparoscope for illumination of the abdominal cavity.

Other component of the Laparoscopic system consist of - Trocar (10 or 12 mm) and Trocar Sleeve Cannula; Veress needle and Tubing with luer lock; Insufflator unit to create pneumo-peritoneum; and Light source unit with fiber optic cable. Also there is Falope ring loading kit consisting of the dilator and a Teflon guide and Falope Ring.

17.2 Loading of Falope Ring

- i. The Falope ring loading kit consists of the dilator, a Teflon guide and applicator. These are used to place the Falope ring onto the applicator which is located at the distal end of the Laparoscope (Fig. 1).

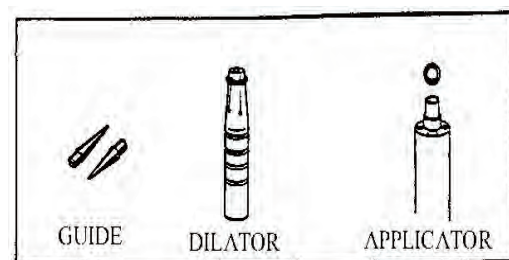


Fig. 1: Content Of Falope Ring Loading Kit

- ii. To prevent Falope ring band breakage or damage during loading (placement) on the applicator, an equipment inspection should be performed on the dilator, guide and applicator before each use. Using a magnifying glass, inspect the dilator to ensure that it has no rough or uneven surfaces that may damage the Falope ring band (Fig. 2).

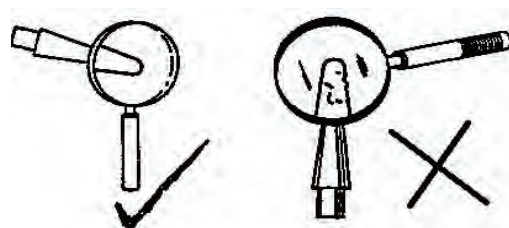


Fig. 2: Inspecting the Dilator with a Magnifying Glass

- iii. Using your fingernails, feel the surface of the dilator to detect small imperfections (nicks or burrs) in the dilator (Fig. 3). If any imperfections are detected, replace the dilator.

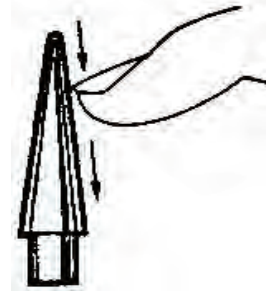


Fig. 3: Feeling the Surface of the Dilator

- iv. Guide Inspection - Using a magnifying glass, inspect the end of the Falope ring guide to ensure that it has no rough or uneven surfaces that may damage the Falope ring band. If rough or uneven surfaces are present, replace the Falope ring guide (Fig. 4).

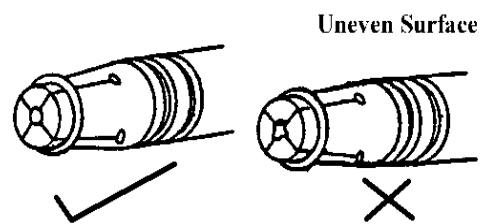


Fig. 4: Inspecting the Guide

- v. Inspect the 'O' ring of the guide to ensure that it is not damaged and securely closes the four (4) segments of the guide (Fig. 5). If the segments do not close securely or damage is evident, replace the 'O' ring.

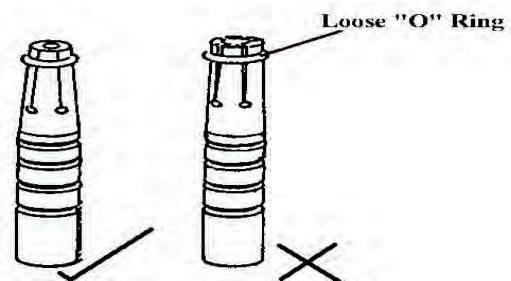


Fig. 5: Inspecting the 'O' Ring Guide

- vi. Applicator Examination - Inspect the distal end of the applicator with a magnifying glass to ensure that it has nor rough or uneven surfaces that may damage the Falope ring band (Fig. 6). If any roughness is present, have instrument repaired or component replaced prior to use.

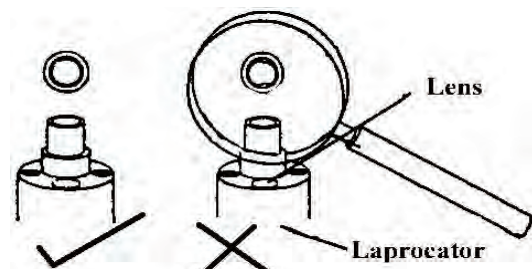


Fig. 6: Inspecting the Distal End of the Applicator

- vii. Loading The Falope Rings - Using standard sterile techniques, load two Falope ring bands as follows:

- a. To facilitate loading, lubricate the Falope rings with sterile or boiled water or, if available, dip into 2% lignocaine gel.
- b. Place the top of the dilator into the inner lumen of the first Falope ring (Fig. 7).



Fig.7: Placing the Top of the Dilator into the Inner Lumen

- c. Place the shank of the dilator with the loaded Falope ring band into the inner tube of the applicator (Fig. 8).
- d. Grasp the Laparoscope with one hand and place on a solid horizontal surface.
- e. Firmly grasp the four tubes of the Laparoscope between the thumb and fingers, to prevent movement of the operating mechanism during loading.
- f. Place the end of the guide against the tip of the dilator. In a constant motion, slowly push the band along the dilator until it rests on the inner tube, making sure the guide does not override the Falope ring band.



Fig. 8: Placing the Shank of the Dilator into the Inner Tube

- g. Remove the guide and dilator (Fig. 9).



Fig. 9: Removing the Guide and Dilator

- h. Repeat Steps 1 to 7 to load the second Falope ring band. Check to ascertain the correct placement of rings. The rings should be placed in the middle or halfway down the length of the protruding end of the inner tube (Fig. 10 (a) and (b)).

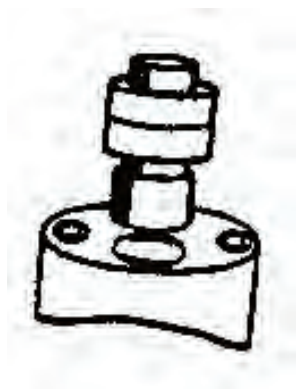


Fig. 10 (a): Falope Ring Band in Place

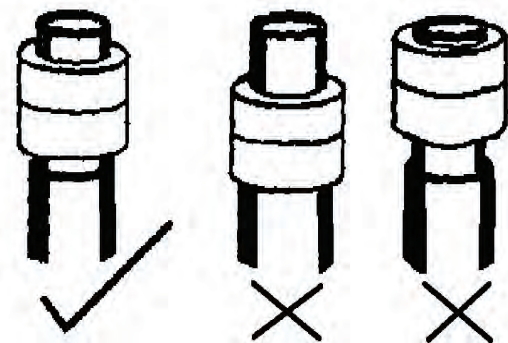


Fig. 10 (b): Correct Placement of Rings

The Laparoscope uses a silastic ring to occlude the fallopian tube. The ring is loaded onto the Laparoscopes applicator no more than 5 minutes before use to ensure that it retains its original size and does not slip off the tube.

17.3 Cleaning of laparoscope

Surgical endoscopes (laparoscopes) are delicate instruments which must be handled with great care to prevent damage. To protect the instruments and prolong their use laparoscopes and accessories should be cleaned, dried and stored properly. Before use it should either be sterilised or high-level disinfected by soaking in chemical agents. Glutaraldehyde is the best chemical high-level disinfectants for soaking laparoscopic instruments because they do not damage rubber, plastics or lens cements.

17.3.1 Tips for Prolonging the Life of Laparoscopes

1. Failure to clean equipment properly is the most common cause of equipment problems. In addition, blood and other organic material left to dry on instruments are difficult to remove and may be a source of infection.
2. Never autoclave or boil laparoscopes, as heat will damage the optics. Always chemically sterilise or use high-level disinfectants with chemicals such as glutaraldehyde.
3. Remove instruments from the disinfectant solution soon after timing requirements are met. Prolonged immersion may shorten the life of the instrument.
4. Rinse well with cooled sterile or boiled water after chemical sterilization or disinfecting respectively, to remove residue. Residue can cause sticking of movable parts.
5. Use gloved hands to handle instruments. Forceps and clamps may damage the laparoscope.
6. Avoid picking up or handling instruments in groups or bunches.
7. Always grasp the Laparoscope at the eyepiece end to avoid damaging the operative forceps.
8. Avoid piling instruments or cables on top of each other to prevent damage or fiber breakage.
9. Do not use Savlon as it is not a high-level disinfectant and has been associated with clouding laparoscope optical lenses.
10. Avoid bending or dropping the fiber-optic cable to minimize fiber breakage.

17.3.2 Cleaning

The Laparoscope must be disassembled in order to be cleaned properly. It should be cleaned immediately after each use. Be certain that no blood is allowed to dry on the instrument because it is very difficult to remove. The followings are the steps -

1. Place the disassembled Laparoscope parts and the cleaning brush in a warm water and mild non-abrasive solution. When cleaning the channels of the outer housing, push the brush all the way through with a rotating motion.
2. When cleaning the inner tube, be careful that the brush is not pushed against the closed end of the tube. If the tube is held so that the thumb is over the slot, the bristles can be felt before the brush bumps the closed end of the tube
3. Wipe off the parts with a clean, soft cloth. Rinse the parts thoroughly with clean water and gently shake off the excess liquid, then air dry.

An equipment inspection should be performed before each use. For continued long life, the telescope must be cleaned after each use. The correct procedure should be followed to prevent damage to the instrument during cleaning.

4. Place the telescope in warm water and mild, nonabrasive detergent solution. Wipe the entire instrument using a clean, soft cloth.
5. Clean the instrument objective and eyepiece lenses with a cotton swab soaked in a 60 - 90 % ethyl alcohol (rectified spirit). If these lenses are not properly cleaned, the view through the scope will be obscured. Do not allow blood to dry on the lens system, as it is difficult to remove. If blood happens to dry on the lens system, use a sharp toothpick or the end of a swab stick to push it off the lens carefully.
6. Rinse the parts thoroughly with clean water and gently shake off the excess liquid, then air dry. Store the instrument in a cool, dry place.

17.3.3 Decontamination of Laparoscopes after use¹

1. Immediately after use, gently wipe the laparoscope, fiber-optic light source and cable and plastic tubing with Luer Lok with a cloth soaked in 60-90% ethyl alcohol (rectified spirit) to remove all blood and organic material. Because alcohol rapidly kills HBV and HIV, this step protects handlers against possible hepatitis B and AIDS infections.
2. Place trocar, uterine manipulator, vulsellum, Veress needle and Falope ring guide kit in 0.5% chlorine solution for 10 minutes to decontaminate. (Do not put laparoscope in chlorine solution as it will damage the lenses. Decontamination of laparoscope is done by swabbing with spirit twice before cleaning & further processing).
3. Place disassembled parts in a basin of clean water and mild, non-abrasive detergent.
4. Wash all outer surfaces, using a soft cotton cloth.
5. Clean inner channels with a cleaning brush supplied with the laparoscope kit. Use a circular motion to remove particulate matter. (Organic matter hidden in the narrow channels may cause infection later). Be careful not to forcibly push the brush against the closed end of the inner tube as this may damage it.
6. Rinse all parts thoroughly with clean water (running water or from a basin). Use the brush to remove detergent and particles from the inner channels. (Detergent, if not thoroughly rinsed away, will decrease the effectiveness of the disinfectant).
7. Dry equipment with a clean soft cotton cloth or air dry. (Excess water will dilute the disinfectant, decreasing its effectiveness).
8. Clean lenses at least weekly and more often as needed but do not touch the lenses with fingers.
9. To clean lenses on laparoscope- use soap and water and air dry or dry with a clean cloth.

17.3.4 Sterilisation of Laparoscope

1. Decontaminate, wash and dry before to be sterilised.
2. In a well-ventilated area, wearing gloves to prevent skin irritation, completely immerse clean, dry disassembled instruments and cleaning brush in a basin of glutaraldehyde (e.g. Cidex). The disinfectant must touch all surfaces in order to be effective.
3. Cover the basin during the disinfection procedure. (This will decrease the rate of evaporation and will keep dust out of the solution).
4. Allow to soak 8 - 10 hours in glutaraldehyde.
5. Remove objects from the solution with sterile gloves.

¹ Adapted from: Altobelli LC et al. 1980. *Laprocator] Preventive Care and Maintenance*. JHPIEGO Corporation: Baltimore, Maryland.

6. Rinse twice with sterile water to completely remove all traces of the disinfectant. Use the sterilised brush to assist with rinsing the narrow channels of the instruments. (This keeps movable parts from sticking due to residual disinfectant).
7. Air dry in a sterile container with a cover.

17.3.5 High-level Disinfect (HLD) of Laparoscopes

1. Decontaminate, wash and dry all to be high-level disinfected.
2. In a well-ventilated area, wearing gloves to prevent skin irritation, completely immerse clean, dry disassembled instruments and cleaning brush in a basin of glutaraldehyde. The disinfectant must touch all surfaces in order to be effective.

All parts of laparoscopes must be completely submerged in glutaraldehydes. Avoid placing instruments on top of each other as this may damage them.

3. Cover the basin during the HLD process. (This will decrease the rate of evaporation and will keep dust out of the solution).
4. Allow to soak for 20 minutes.
5. After 20 minutes, use high-level disinfected or sterile gloves to carefully remove instruments from the solution. (Forceps or lifters may damage the instruments).
6. Rinse twice with cooled water which has been boiled for 20 minutes and cooled in order to completely remove all traces of the disinfectant. Although not necessary, sterile water can be used if boiled water is not available. (This will prevent the solution from irritating the clients skin and keep the movable parts from sticking). Use a high-level disinfected brush to assist with rinsing the narrow channels of the instruments.
7. Allow to air dry in a HLD container with cover.

17.3.6 Storing of Laparoscopes

After use laparoscope should be decontaminated and each part is to be cleaned and dried after disassembling Then assemble all parts and store laparoscope and trocar by placing them in the padded container supplied with the equipment and store in a cool, dry place.

Family Planning Indemnity Scheme

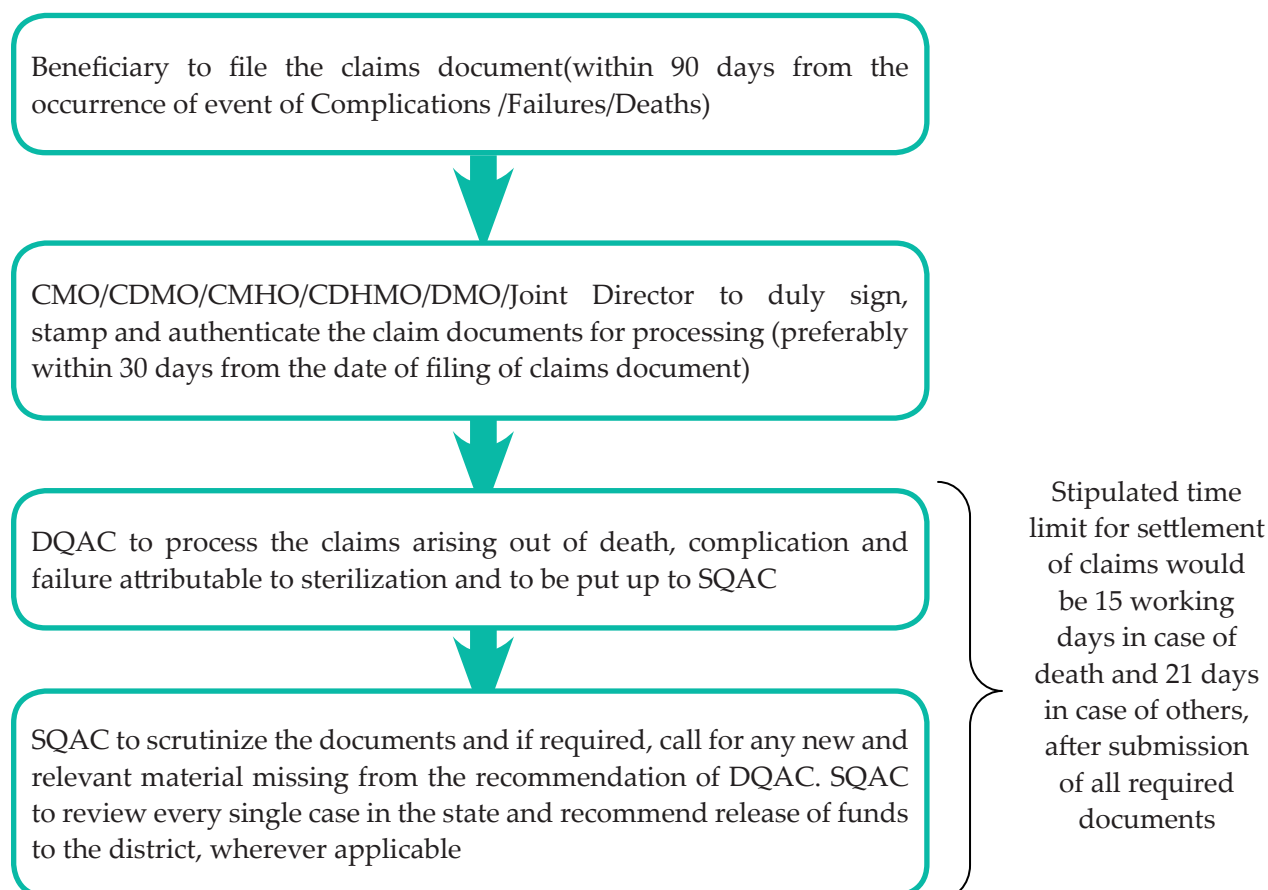
Family Planning Indemnity Scheme indemnifies all clients of sterilization as also doctors/ health facilities conducting sterilization operation in both public and accredited private/NGO sector health facilities for unlikely events of death/complications/failure attributable to sterilization operations.

The available benefits under the Family Planning Indemnity Scheme are as under:

Section	Coverage	Limits
I A	Death attributable to sterilization (inclusive of death during process of sterilization operation) in hospital or within 7 days from the date of discharge from the hospital.	Rs. 2 lakh
I B	Death attributable to sterilization within 8 - 30 days from the date of discharge from the hospital.	Rs. 50,000/-
I C	Failure of sterilization .	Rs 30,000/-
I D	Cost of treatment in hospital and upto 60 days arising out of complication attributable to sterilization operation (inclusive of complication during process of sterilization operation) from the date of discharge.	Actual not exceeding Rs. 25,000/-
II	Indemnity per Doctor/Health Facilities but not more than 4 in a year.	Upto Rs. 2 Lakh per claim

Note: The details of the scheme is available in 'Manual for Family Planning Indemnity Scheme', available on <http://nrhm.gov.in/nrhm-components/rmnc-h-a/family-planning/schemes.html>

Steps of the Claim Process





LIST OF EXPERTS

List of Experts

Dr. Alok Banerjee Technical Advisor Parivar Sewa Sanstha New Delhi	Dr. B.P. Singh President Enable Health Society New Delhi	Dr. Sunita Singhal Senior Clinical Advisor EngenderHealth New Delhi
Dr. Bani Sarkar Consultant Gynaecologist LHMC New Delhi	Dr. Basab Mukherjee FP-Head, FOGSI Kolkata, WB	Dr. Pratima Mittal HOD, Obs and Gynae Safdarjung Hospital New Delhi
Dr. Jyoti Vajpayee BMGF New Delhi	Dr. Amit Shah RH/ FP Advisor USAID	Dr. Loveleen Johri Senior Scientific Affair Specialist US Embassy New Delhi
Dr Bulbul Sood Country director Jhpiego New Delhi	Dr. R. C. M Kaza Consultant Surgeon Ex-Professor of Surgery, Maulana Azad Medical College New Delhi	Dr. Rashmi Kukreja Health Advisor DFID New Delhi
Dr. Shubhra Philips Director Health Services PSI Head office New Delhi	Dr. Anoop Gogiya Consultant Anaesthetist Safdarjung Hospital New Delhi	Dr. Saswati Das Director Clinical Services & Training Jhpiego New Delhi
Dr. Minati Rath Senior Clinical officer Jhpiego New Delhi	Dr. Krishan Kumar Anaesthetist CMO LHMC New Delhi	Dr. Rupali Diwan Dept. of Obs. and Gynae Safdarjung Hospital New Delhi
Dr Manish Ranjan Director – Clinical Services Maries Stopes International New Delhi	Dr. Rajni Wadhwa Technical Specialist UHI-FHI360 New Delhi	Dr. Anupama Arya CTS EngenderHealth New Delhi
Dr. Anchita Patil NPO UNFPA New Delhi	Dr Nayara Shakeel Senior Technical Specialist STSU, EngenderHealth Lucknow - Uttar Pradesh	Dr. Tapasvi Puwar Deputy Director SRU CARE Patna
Dr. Jyoti Sachdeva Assistant Director SPO (FP) Delhi NCR	Dr. K. Srinivas Assistant Professor Dept. of Obstetrics & Gynaecology Bangalore Medical college & Research Institute Bangalore – Karnataka	Dr. Akhilesh Tripathi Deputy Director Health National Health mission Chhattisgarh
Dr. L. M. Pant Surgical Specialist Indore Madhya Pradesh	Dr. Satish Agarwal, Director Health Services FW (DHS) Haryana	Dr. S.J. Kulkarni Assistant Director Maharashtra Family Welfare Bureau Pune- Maharashtra

Dr. T.K. Shaanthy Gunasingh Professor & HOD Kilpauk Medical College Chennai	Dr. Sudhir Batra DFPO NHBC Panipat Haryana	Dr. Rajkumar District FW Officer Kolar District Karnataka
Dr. S. K. Sikdar DC FP (I/C) FP Division MoHFW	Dr. Teja Ram DC FP FP Division MoHFW	

Support Extended by

Dr. Vani Srinivas Consultant NTSU,FP MoHFW	Dr. Nidhi Bhatt Consultant NTSU,FP MoHFW	Ms. Shikha Bansal Consultant NTSU,FP MoHFW
Dr. Pragati Singh Consultant FP Division MoHFW	Ms. Shobhana Singh SPM, Engender Health Rajasthan	



November 2014
Family Planning Division
Ministry of Health and Family Welfare
Government of India