OPERATIVE GYNECOLOGY

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Objectives: At the end of this lecture, the 5th year students should be able to:

1. Recognize the pre-operative assessment for any gynecological operation.
2. Describe the different types of gynecological operations.
3. Determine the post operative care .

Pre- operative assessment

A preoperative assessment clinic is essential to gather all informations , optimize co morbitidies and then organize anaesthestic , surgical and post operative care before surgery actually take place .

Patients with severe co morbidities should referred to the relevant specialist to quantify the risks and to take appropriate measures to minimize operative morbidity.

Preoperative assessment should :

- Assess the risks and benefits of the proposed surgery and anaesthesia.
- Identify any condition that may require intervention prior to admission and surgery and take appropriate actions are taken.
- Perform necessary investigations and are available and any necessary actions are taken .
- Identify post operative requirements e.g. critical care bed .
- Provide informations about anticipated post operative recovery , e.g . rate of

mobilization, measure to relieve pain .

- Disscuss with patients any self- help matters to improve the outcome of their surgery. E.g. stop smoking , losing weight.
- Prepare the multidisciplinary pre operative documention

Types of gynecological surgery:

*Elective
*Emergency : common causes of emergency gynecological admission
-Ectopic pregnancy
-Spontaneous miscarriage (incomplete, inevitable).
-Tubo-ovarian abscess
-Ovarian cyst torsion or rupture.
-Bartholin abscess
-Post operative complications.

Post operative care: should include

- Receive the patient from the theatre and review the patient record.
- Monitor the vital signs (check blood pressure ,respiration , pulse)
- Check surgical dressing for oozing or bleeding.
- Ask the patient if she has any pain .
- Observe general condition of the patient.

General postoperative complications

*Immediate:

- Primary hemorrhage: either starting during surgery or following postoperative increase in blood pressure - replace blood loss and may require return to theatre to re-explore the wound.
- Basal atelectasis: minor lung collapse.
- Shock: blood loss, pulmonary embolism .
- Low urine output: inadequate fluid replacement intra-operatively and postoperatively.

*Early:

- Acute confusion: exclude dehydration and sepsis.
- Nausea and vomiting: analgesia or anesthetic-related; paralytic ileus.
- Fever
- Secondary haemorrhage: often as a result of infection.
- Pneumonia.
- Wound or anastomosis dehiscence.
- DVT.
- Acute urinary retention.
- Urinary tract infection (UTI).
- Postoperative wound infection.
- Bowel obstruction due to fibrinous adhesions.
- Paralytic Ileus.

*Late:

- Bowel obstruction due to fibrous adhesions.
- Incisional hernia.
- Persistent sinus.
- Recurrence of reason for surgery - eg, malignancy.
- Keloid formation

OPERATIONS ON THE CERVIX

Cervical cerculage used for cervical incompetence

CI occurs when the cervix opens, shortens or weakens too early in pregnancy . It is also known as cervical insufficiency.

Causes of cervical incompetence:

1. Injury to the cervix or the uterus during a previous pregnancy or childbirth.
2. A genetic disorder like Ehlers – Danlos syndrome .
3. History of surgery on the cervix.
4. In most cases the cause is unknown.
5. Irregular shaped cervix or uterus.

Diagnosis:

- There is no precise method for diagnosing CI
- Strongest evidence for diagnosis of CI is lack of any other causes for recurrent pregnancy loss e.g. : chromosomal abnormalities,infection,endocrine disorders, immunologic disease)
- With history of consistent with condition

✓ Painless premature cervical dilatation during pregnancy and before onset of labour

✓ a sudden unexpected rupture of the membranes followed by painless expulsion of the fetus

✓ Resulting in repeated mid trimester spontaneous miscarriage or premature delivery

✓ Ability to introduce a number 8 Hegar dilator or equivalent through the internal os when patient is not pregnant.

✓ Hysterosalpingogram demonstrating cervical funneling.

✓ Clinical evidence of extensive obstetric or surgical trauma to cervix.

Ultrasonography is useful.

Normal length of the cervix at 24 to 28 weeks is 3.5 cm. Patients with a cervical length less than 2.0 cm are at a three- to five fold increased risk of preterm birth

It is also often standard to report the presence or absence of funneling or opening of the internal os.

Cervical Cerclage

Definition:

A procedure in which sutures are used to close the cervix during pregnancy to prevent preterm birth or miscarriage. Used for the treatment of cervical incompetence. It usually done after 13 week of pregnancy (between 12 -14 weeks) no earlier ,so that early abortions due to other factors will be completed & to avoid anesthetic drug effect & not after 14 week as it may stimulate uterine contraction & shortening of the cervix which make cerclage difficult to be performed

When should the cerclage be removed?

- ✓ It should be removed before labor, usually at 37+0 weeks of gestation, unless delivery is by elective caesarean section, in which case suture removal could be delayed until this time.
- ✓ In women presenting in established preterm labor, the cerclage should be removed to minimize potential trauma to the cervix.

- ✓ All women with a Tran's abdominal cerclage require delivery by caesarean section, and the abdominal suture may be left in place following delivery.
- ✓ It should be removed following PPROM
- ✓ In women with PPROM between 24 and 34 weeks of gestation and without evidence of infection or preterm labor, delayed removal of the cerclage for 48 hours can be considered, as it may result in sufficient latency that a course of prophylactic steroids for fetal lung maturation is completed and/or in utero transfer arranged.

Contraindications for cerclage includes: Bleeding, uterine contractions, or ruptured membrane

Preoperative evaluation

- ✓ Cerclage should generally be delayed until after 14weeks so that early abortions due to other factors will be completed
- ✓ Obvious cervical infection should be treated,
- ✓ cultures for gonorrhea, chlamydia, and group B streptococci are recommended
- ✓ Sonography to confirm a living fetus and to exclude major fetal anomalies
- ✓ For at least a week before and after surgery , there should be no sexual intercourse
- ✓ More advanced the pregnancy, the more likely surgical intervention will stimulate preterm labor or membrane rupture

***Cerclage is performed prophylactically before cervical dilatation.

In some cases, this is not possible, and rescue cerclage (emergency) is performed emergently after the cervix is found to be dilated or effaced. Elective cerclage generally is performed between 12 and 16 weeks

Types:

A* transvaginal cerculge

1. McDonald Cerclage

McDonald cerclage procedure for incompetent cervix.

A. Start of the cerclage procedure with a number monofilament suture being placed in the body of the cervix very near the level of the internal os.

B. Continuation of suture placement in the body of the cervix so as to encircle the os.

C. Completion of encirclement.

D. The suture is tightened around the cervical canal sufficiently to reduce the diameter of the canal to 5 to 10 mm, and then the suture is tied. The effect of the suture placement on the cervical canal is apparent

2. Modified Shirodkar cerclage

. A. A transverse incision is made in the mucosa overlying the anterior cervix, and the bladder is pushed cephalad.

B. A 5-mm Mersiline tape on a Mayo needle is passed anteriorly to posteriorly.

C. The tape is then directed posteriorly to anteriorly on the other side of the cervix.

D. The tape is tied anteriorly. The cervical mucosa is then closed with continuous stitches to bury the anterior knot.

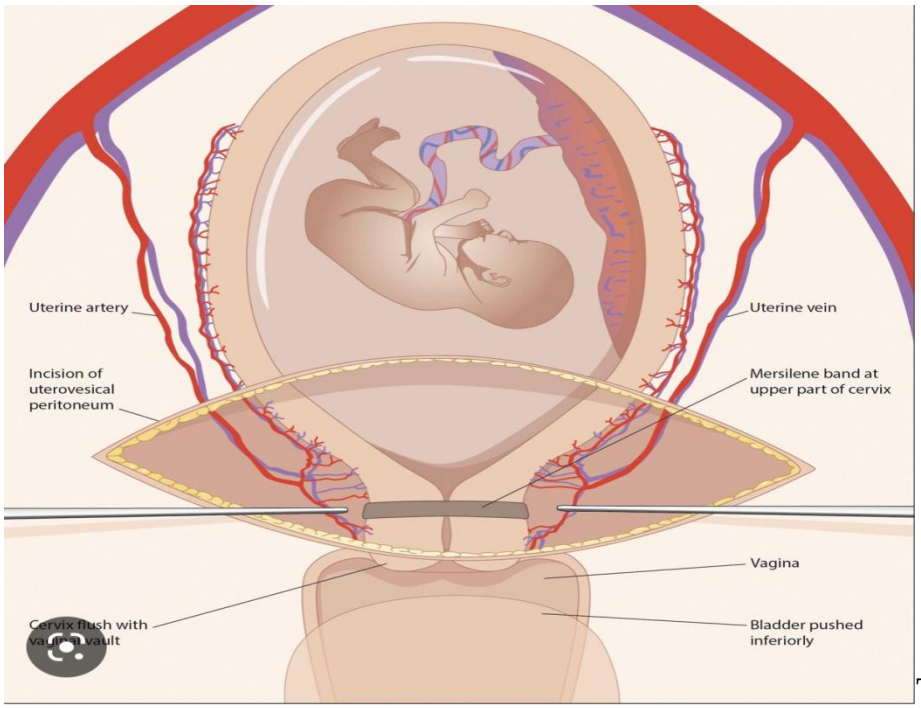
B* Trans abdominal cerclage

with the suture placed at the uterine isthmus is used in some cases of severe anatomical defects of the cervix or cases of prior transvaginal cerclage failure

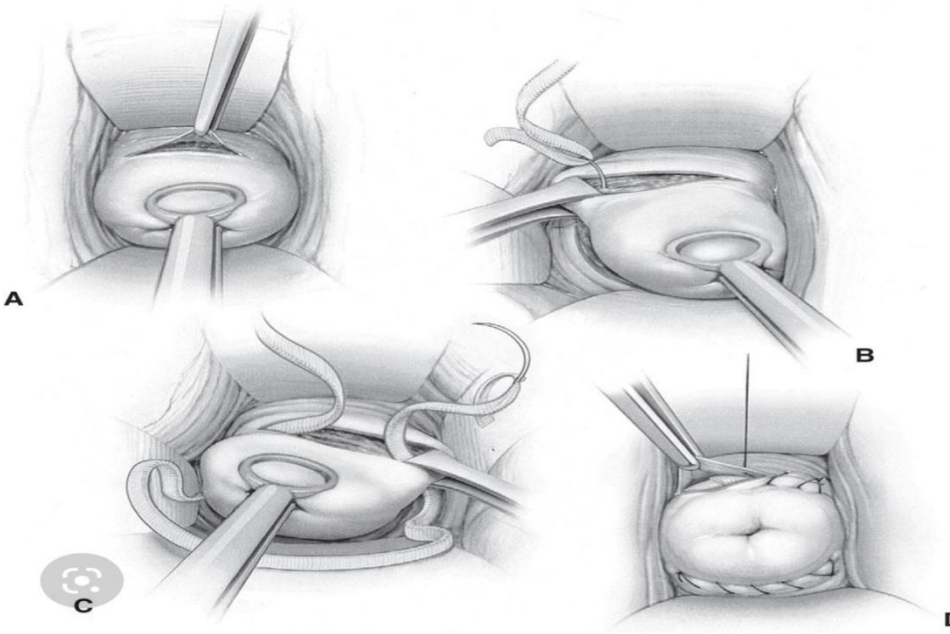
Indications: previous failed vaginal cerclage with scarring or lacerations rendering vaginal cerclage loss.

Complications

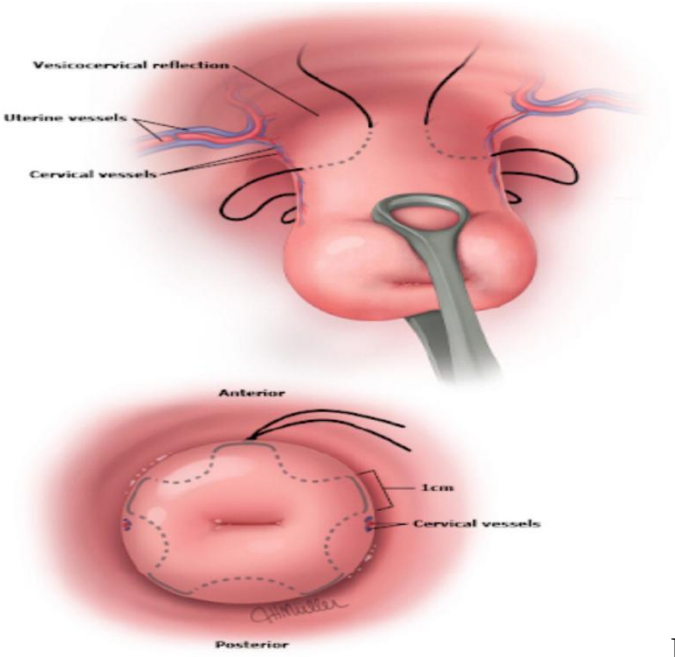
- Risk of anaesthesia.
- Preterm labour.
- Infection
- Injury to cervix or bladder.
- Bleeding.
- Cervical dystocia; may need C/S.



Transabdominal cerculage



modified shiroidkar cerculage



McDonald cerculage

DILATATION & CURRITAGE

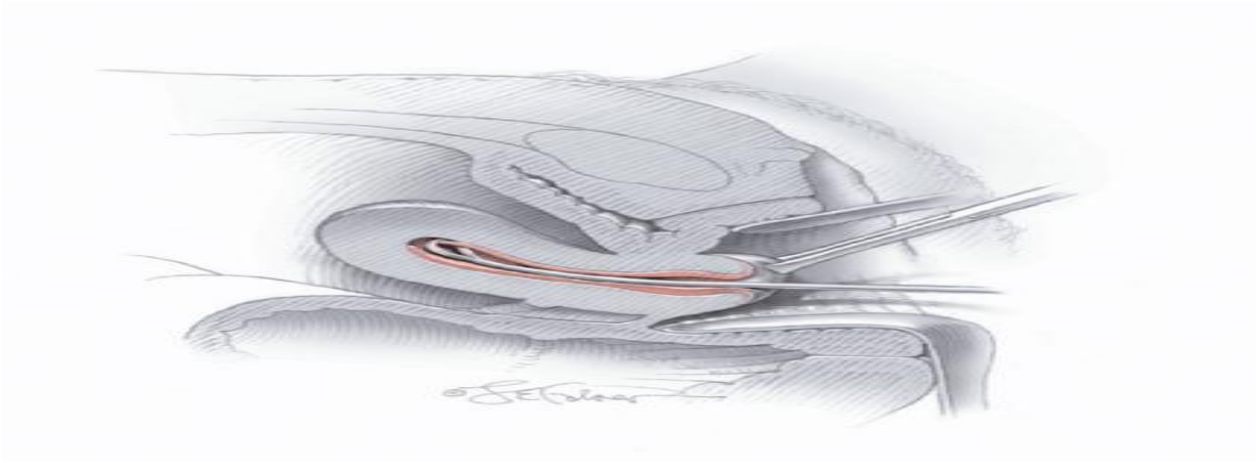
Definition:

It refers to a procedure involving dilatation (widening /opening) of the cervix & surgical removal of part of the lining of the uterus &/or content of uterus.

Procedure:

Woman is usually put under GA, bimanual examination is done, Sim's speculum is introduced into vagina to expose the cervix, the anterior lips of the cervix is grasped with volsellum & drown down using uterine sound to determine the uterine size & direction, then gradual introduction of dilator is done to dilate the cervix. A small ovum forceps (sponge) is next introduced & the cavity gently & carefully explored .the curette is then introduced into cavity of uterus & the endometrium scraped away.

Notes: Dilatation of cervix can lead to vasovagal attack &even cardiac arrest.



Indications:

1-Abnormal uterine bleeding.

2- To remove RPOC in case of missed or incomplete abortion.

Complications:

- Adverse effect of anesthesia.
- Uterine perforation.
- Infection.
- Bleeding.
- Asher man's syndrome: due to excessive curette that remove the basalis layers of endometrium leading to adhesions.

OPERATIONS ON THE UTERUS

HYSTERECTOMY

Definition:

It is the surgical removal of the uterus, it may be total (complete) i.e. removal of the uterus &the cervix or subtotal (partial) i.e. removal of the uterine body while leaving the cervix intact.

Indications:

1) Treatment of reproductive system cancers (uterine, cervical, ovarian).
2) Treatment of severe intractable endometriosis &/ adenomyosis.
3) Treatment of uterine fibroid not responding to treatment in woman who completed her family.
4) Placenta accrete. 5) Severe form of vaginal prolapse. 6) Prophylaxis.

Types:

- Radical hysterectomy: complete removal of uterus, cervix, upper vagina, parametrium. Lymph nodes, ovaries & Fallopian tubes are also removed (Wertheim's hysterectomy).It is indicated for cancer of uterus.
- Total hysterectomy: complete removal of the uterus, cervix with or without oopherectomy ,indicated in: Fibroids , Menstrual dysfunction , Prolapse , Endometriosis , Adenomyosis , Pelvic Inflammatory Disease , Cancer (cervix , uterus ,ovaries).
- Subtotal hysterectomy: removal of uterus leaving cervix in situ. Indicated in post partum hemorrhage ,rupture uterus & sever adhesions in lower uterine segment

Technique (Routes):

1)Abdominal hysterectomy: via laparotomy (abdominal incision).

2) Vaginal hysterectomy: is done through vaginal canal (advantage: few complications, short healing time, and short hospital stay).

3) Laparoscopic – assisted vaginal hysterectomy: It begins by laparoscopy & completed via the

vaginal canal.

4) Total laparoscopic hysterectomy: is performed entirely via laparoscopy (e.g. robotic hysterectomy).

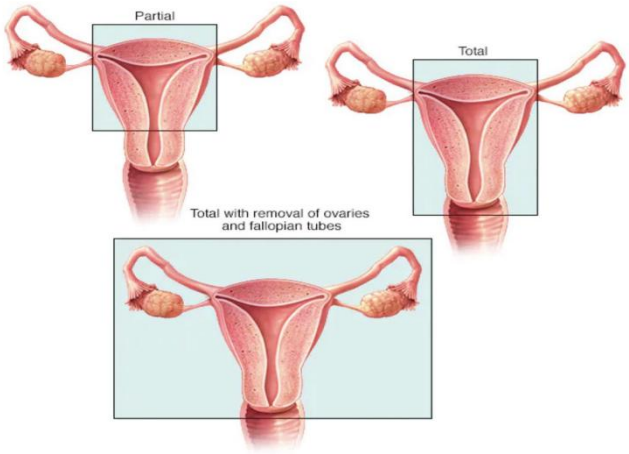
Postoperative

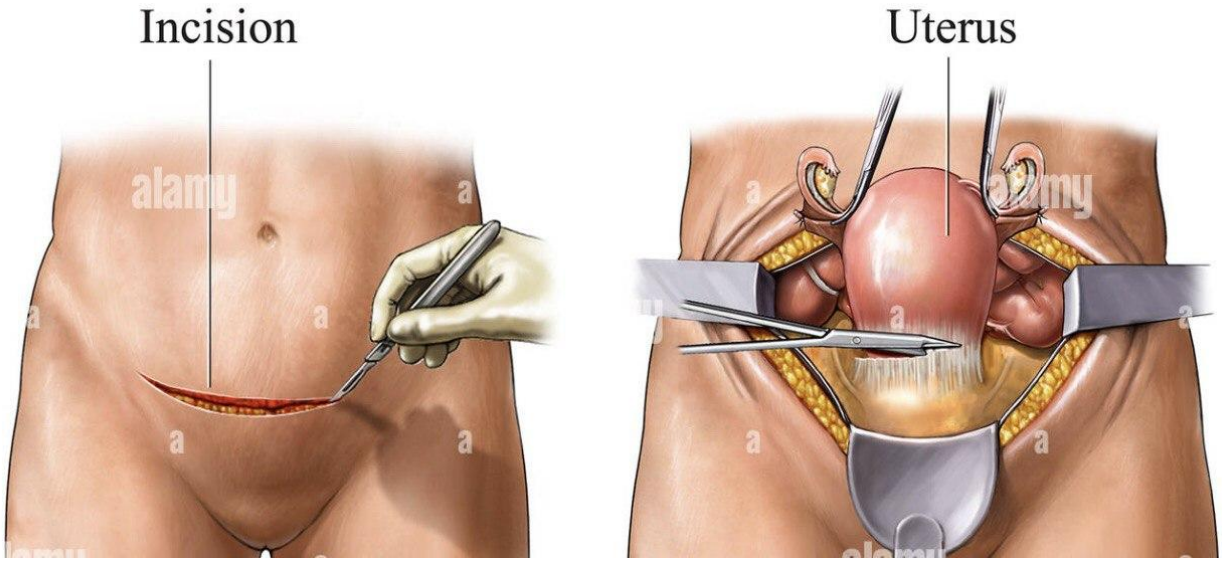
Following abdominal hysterectomy, postoperative care follows that for any major abdominal surgery.

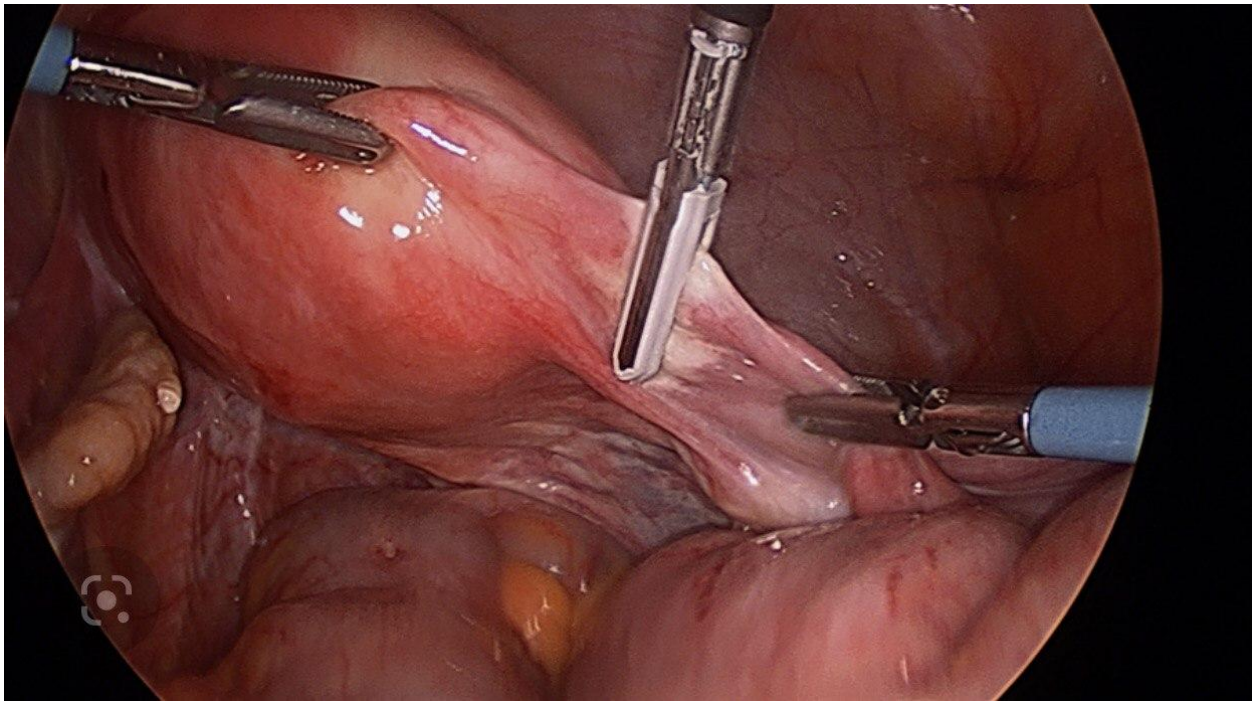
-Hospitalization typically varies from 1 to 4 days, and return of normal bowel function .

-Postoperative activity in general can be individualized, although intercourse usually is delayed until 4 to 6 weeks after surgery to allow time for vaginal cuff healing.

-Febrile morbidity is common following abdominal hysterectomy and exceeds that seen with vaginal or laparoscopic approaches. Frequently, fever is unexplained, but pelvic infections are common. Additionally, abdominal wound infection, urinary tract infection, and pneumonia should be considered. Because of the high rate of unexplained fever, which resolves spontaneously, observation for 24 to 48 hours for mild temperature elevations is reasonable.







Laproscopic hysterectomy

Endometrial Ablation

Definition:

is a medical procedure that is used to remove, ablate or destroy the endometrial lining of a uterus . This technique is most often employed for people who suffer from excessive or prolonged bleeding during their menstrual cycle but cannot or do not wish to undergo a hysterectomy.

Methods of endometrial ablation

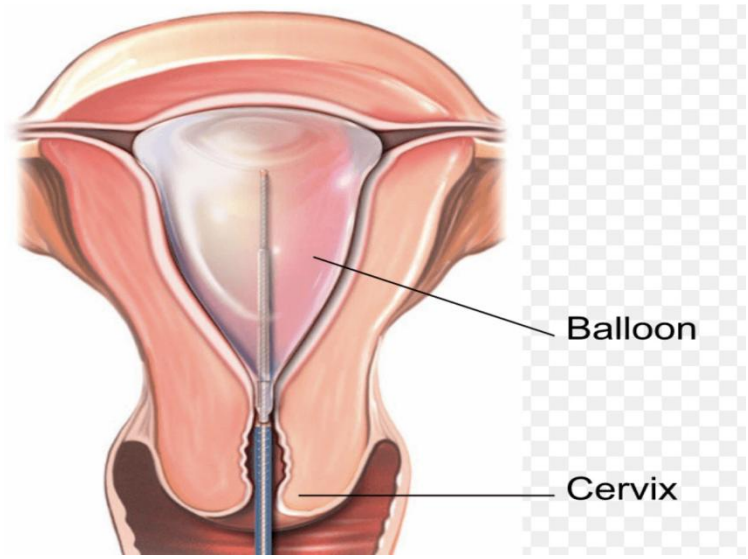
First generation
Trans Cervical Resection of the Endometrium (TCRE)
Endometrial Laser Resection (ELA)
Roller Ball Endometrial Ablation (REA)

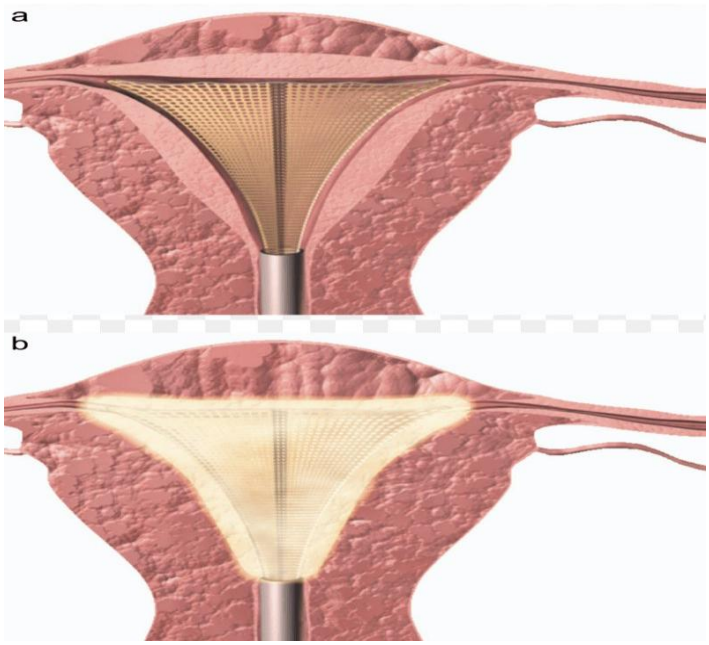
Second generation
Thermal Balloons (Thermachoice, Cavatherm)
Microwave Endometrial Ablation (MEA)
Circulating Hot Saline (Hydro therm Ablator)
Cryotherapy

Effectiveness
Approximately 80% of those who undergo this procedure will have reduced menstrual bleeding. Of those, approximately 45% will stop having periods altogether. However, a second procedure or a hysterectomy will be required in approximately 22% of cases.

Complications:

Although uncommon, the procedure can have serious complications including:
*Perforation of the uterus
*Burns to the uterus (beyond the endometrial lining)
*edema or embolism*Pulmonary odema *burn leading to death
*Placenta accreta may occur if the patient becomes pregnant after endometrial ablation





Female sterilization (Tubal ligation)

Definition:

Tubal ligation is a surgical procedure for sterilization in which a woman's fallopian tubes are clamped and blocked which prevents eggs from reaching the uterus for sterilization and birth control.

Effectiveness

A tubal ligation is approximately 99% effective in the first year following the procedure.

Tubal ligation Methods

1) Open

Bipolar Coagulation: The most popular method of laparoscopic female sterilization, this method uses electrical current to cauterize sections of the fallopian tube.

Monopolar Coagulation: Less common than Bipolar Coagulation, Monopolar Coagulation uses electrical current to cauterize the tube together, but also allows radiating current to further

damage the tubes as it spreads from the coagulation site. Many cases involve a cutting of the tubes after the procedure.

Fimbriectomy: By removing a portion of the fallopian tube closest to the ovary, fimbriectomy eliminates the ovary's ability to capture eggs and transfer them to the uterus.

Tubal Clip: The tubal clip (Filshie Clip or Hulka Clip) technique involves the application of a permanent clip onto the fallopian tube. Once applied and fastened, the clip disallows transference of eggs to the ovary.

Tubal Ring: The silastic band or tubal ring method involves a doubling over of the fallopian tubes and application of a silastic band to the tube.

Pomeroy Tubal Ligation: In this method of tubal ligation, a loop of tube is "strangled" with a suture. Usually, the loop is cut and the ends cauterized or "burned". This type of tubal ligation is often referred to as cut, tied, and burned.

2) Hysteroscopic

Essure Tubal Ligation: In this method of tubal ligation, two small metal and fiber coils are placed in the fallopian tubes. After insertion, scar tissue forms around the coils, blocking off the fallopian tubes and preventing sperm from reaching the egg.

3)Laparoscopic

It is done by application of clips , rings or electrocautery via laparoscopy under GA

Reversal

Tubal reversal is microsurgery to repair the fallopian tube after a tubal ligation procedure.

The procedure that connects these separated parts of the fallopian tube is called tubal reversal or microsurgical tubo-tubal anastomosis.

In vitro fertilization may overcome fertility problems in patients not suited to a tubal reversal.

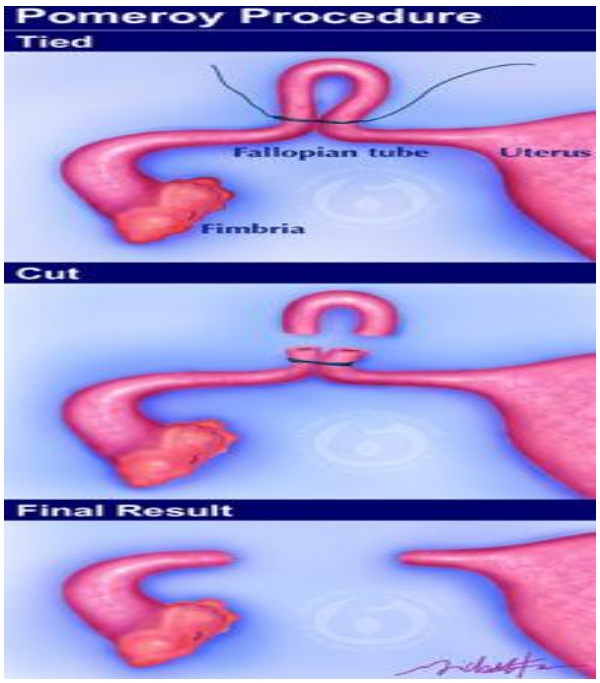
complications

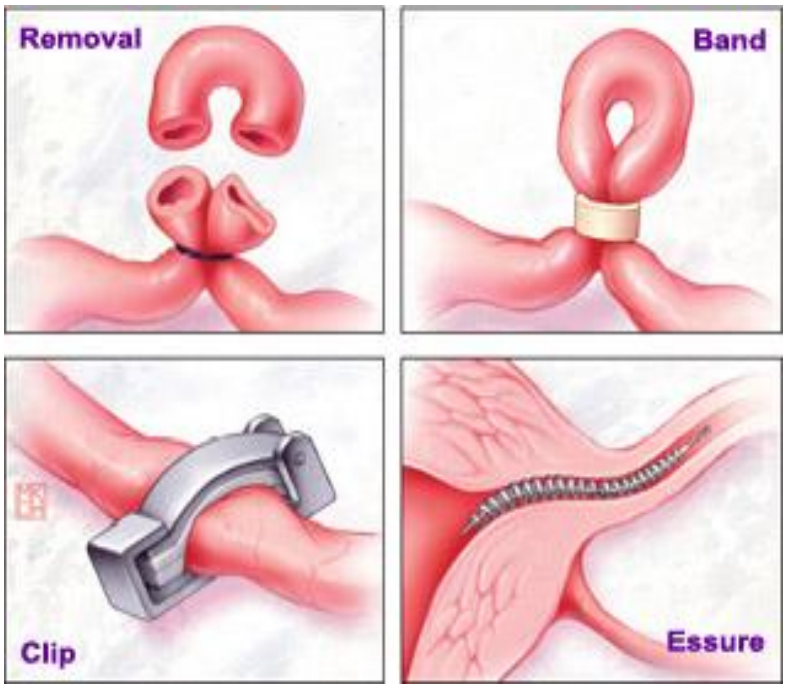
IMMEDIATE COMPLICATIONS

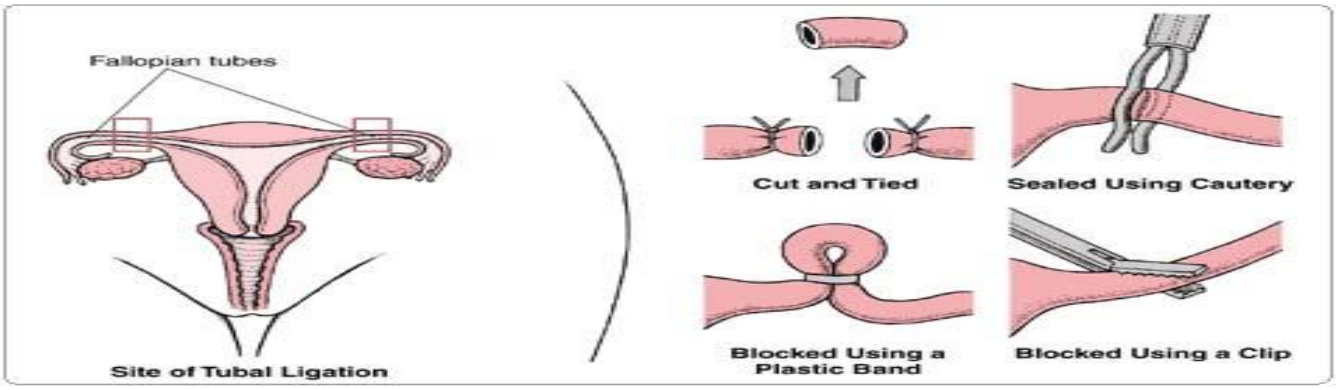
1 The mortality from laparoscopic sterilization is less than 8 per 100,000 operations. The commonest cause of death is anaesthesia.
2 Damage to major blood vessels, bowel or other internal organs may occur.
3 Gas embolisms.
4 Thromboembolic disease is rare, but more likely immediately post-partum.
5 Wound infection.

LONG-TERM COMPLICATIONS
1 Menstrual disorder
2 Abdominal pain and dyspareunia.
3 Psychological and psychosexual problems are rare.
4 Bowel obstructions from adhesions is a very rare complication.

Postoperative
The recovery following minilaprotomy typically is rapid and without complication, and women may resume their regular diet and activities as tolerated. Sterilization is immediate following surgery, and intercourse may resume at the patient's discretion. Aside from regret, the risk of long-term physical or psychological sequel is low.. Moreover, interval tubal ligation is unlikely to result in changed sexual interest or pleasure.


Pomeroy Procedure
Tied
Fallopian tube
Uterus
Fimbria
Cut
Final Result


Removal
Band
Clip
Essure


Fallopian tubes
Site of Tubal Ligation
Cut and Tied
Sealed Using Cautery
Blocked Using a Plastic Band
Blocked Using a Clip