

CONTRACEPTION

- DR. AKIF A.B

PEARL INDEX

– It is defined as no. of contraceptive failures per 100 women years of exposure

$$\text{Pearl Index} = \frac{\text{Total no. of accidental pregnancies} * 100}{\text{Total months of exposure}}$$

PEARL INDEX

Contraceptive Method	Pearl Index
No method	80
Male Condoms	2-14
Female condoms	5-21
IUD	0.5 - 2.0
OCP	0.1-0.5
Centchroman (Saheli)	1.83 -2.84


ELIGIBLE COUPLES

- Married couples with wife in reproductive age i.e 15-45yrs
- In India, there are 150-180 Eligible Couples/1000 population

COUPLE PROTECTION RATE

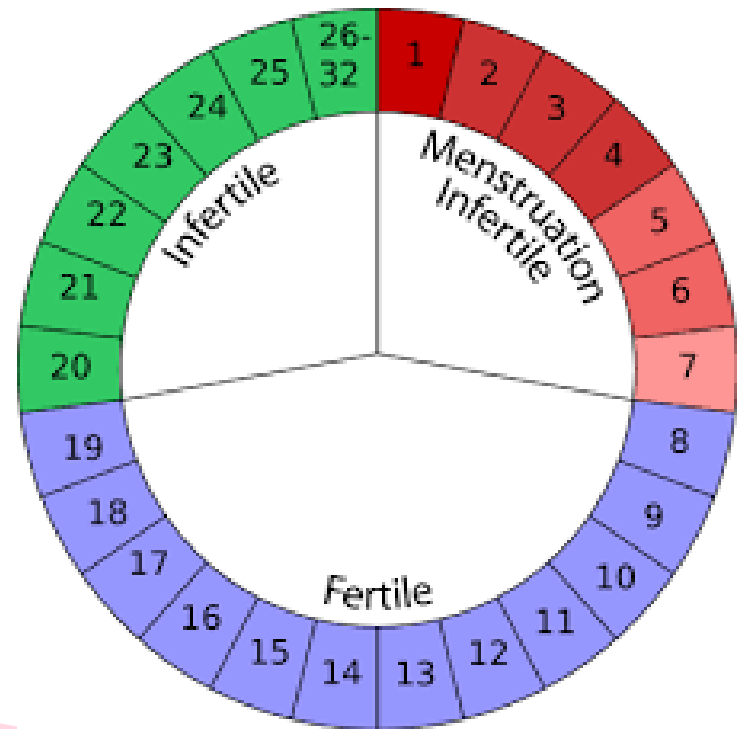
- % of Eligible Couples using one or other contraceptive methods.
- CPR of India = 45%
- To achieve Net Reproductive Rate = 1 , CPR should be > 60%

NATURAL METHODS

- 1) Rhythm method/ Calendar method/ Safe Period
 - 2) Basal body temperature method
 - 3) Cervical mucus method
 - 4) Symptothermic method
 - 5) Coitus Interruptus/ Withdrawal method
 - 6) Sexual abstinence
 - 7) Lactational amenorrhoea method
- 

RHYTHM METHOD / CALENDAR METHOD / SAFE PERIOD

- Programmed Sex i.e abstinence required for almost ½ month.
- Suitable only for educated people.
- Days near ovulation(Day 14) are unsafe period and sexual abstinence should be maintained



Calendar Method

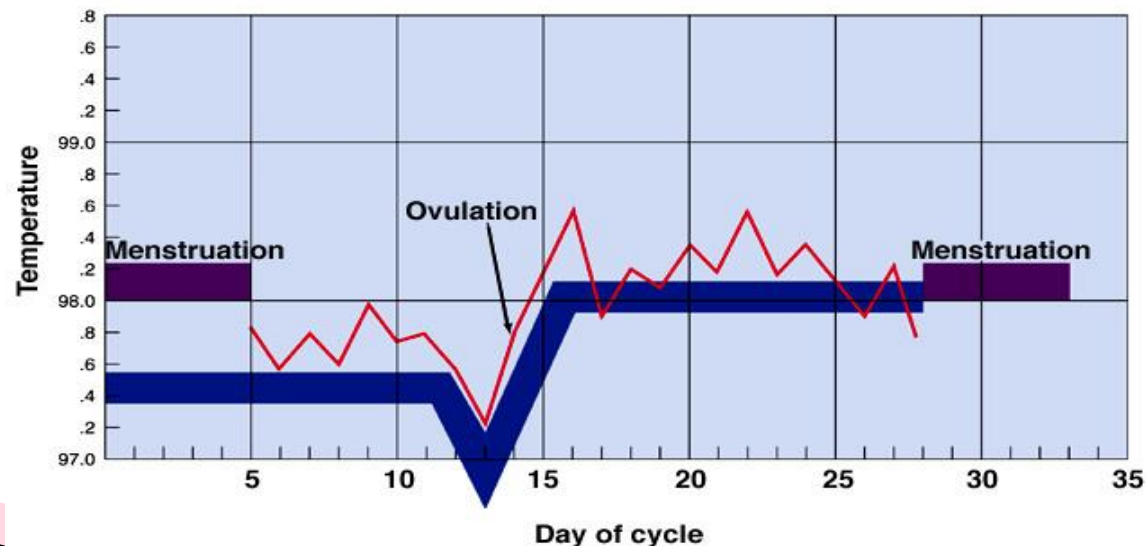
- Useful in women with irregular cycles
- Fertile period
 - Last day = (Longest cycle - 10)th day
 - 1st day = (Shortest cycle - 20)th day
- Ovulation occur 14 days before the starting of menstrual bleeding

BASAL BODY TEMPERATURE METHOD

- Rise of body temperature occurs by 0.3–0.5C due to raised progesterone at time of ovulation and again falls
- So sexual intercourse should be restricted to post-ovulation phase only
- Limitation : Abstinence for whole pre-ovulatory phase i.e 14–15 days

Byer/Shainberg/Galliano *Dimensions Of Human Sexuality*, 5e. Copyright © 1999. The McGraw-Hill Companies, Inc. All Rights Reserved.

Basal Body Temperature Method



CERVICAL MUCUS METHOD

- Also known as Billings method / Ovulation method
- Method : Wipe tissue paper inside of vagina.
- mucus characteristics at ovulation : Watery, clear, profuse, slippery = Unsafe
- after ovulation : Dry, thick and tacks = safe period



SYMPTOTHERMIC METHOD

CALENDAR METHOD

+

BASAL BODY TEMPERATURE METHOD

+

CERVICAL MUCUS METHOD


Symptothermal Method



SEXUAL ABSTINENCE


- It is the only method which is 100% effective

COITUS INTERRUPTUS

- Man withdrawes Penis from Vagina just before ejaculation.
 - High rate of failures
 - pearl Index = 18 per 100 woman years
- 

IUCD

Absolute Contra indications

- Please** = **P**regnancy
 - Don't** = **D**UB
 - Ever** = h/o **E**ctopic Pregnancy
 - Put** = **P**elvic Inflammatory Disease
 - Contraceptives** = **C**ancer Cervix/Endometrium
- 

IUCD

Classification

- Non- medicated IUCDs: Lippes loop
- Medicated copper containing IUCDs :
Cu T-380 A, Multiload – 375, Cu T-200,
Multiload – 250
- Hormone containing IUCDs : Levonorgestrel
intrauterine system (LNG – IUS), progestasert

A or Ag means Gold or Silver coating

380/200/250 indicates surface area in mm²

LIFE SPAN OF IUCDs

IUCD	LIFE SPAN
CuT 380A	10years
Multiload 375	5Yrs
Progestastert	1year
MIRENA	7-10years
CuT 200B	4years

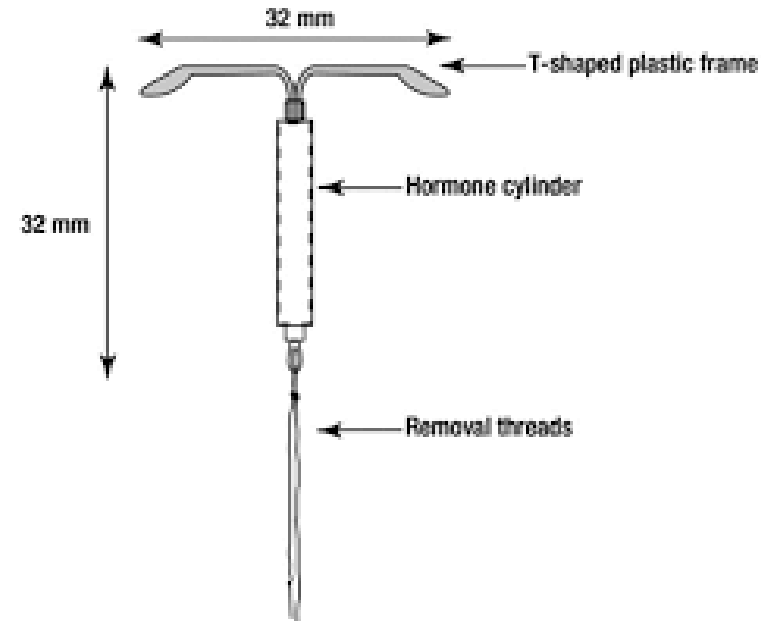
Lippes loop

- Double S shaped
- can be kept in uterus as long as desire
- not being used now



PROGESTASERT

- 3rd generation IUD
- Hormone cylinder contains : 38mg of progesterone
- Cylinder daily releases 65micro gms of progesterone
- Life span : 1 year



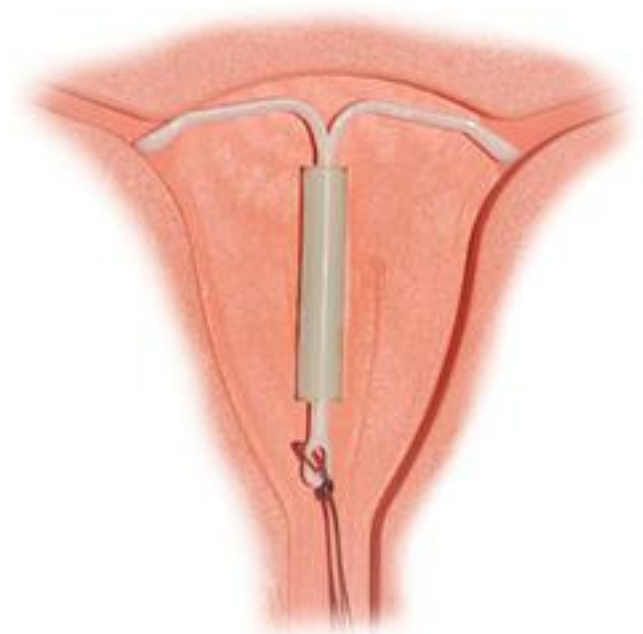
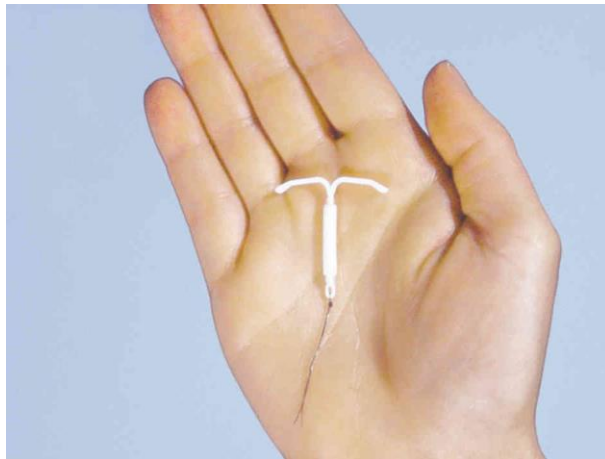
MULTILOAD-375

LIFE SPAN = 5yrs



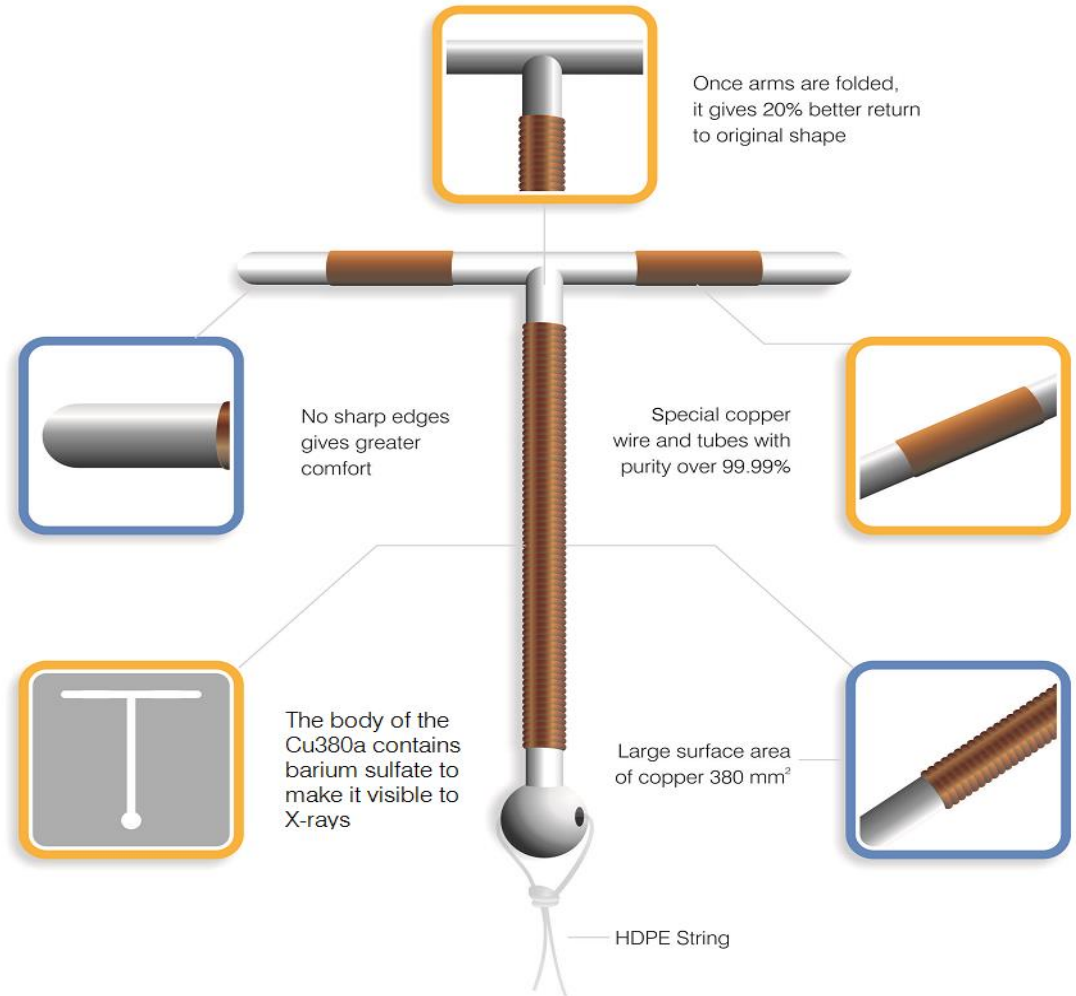
MIRENA -IUCD

- Contains 52mg of progesterone
- Releases 20micro grams of progesterone daily
- Lifespan = 5yrs



CuT 380A

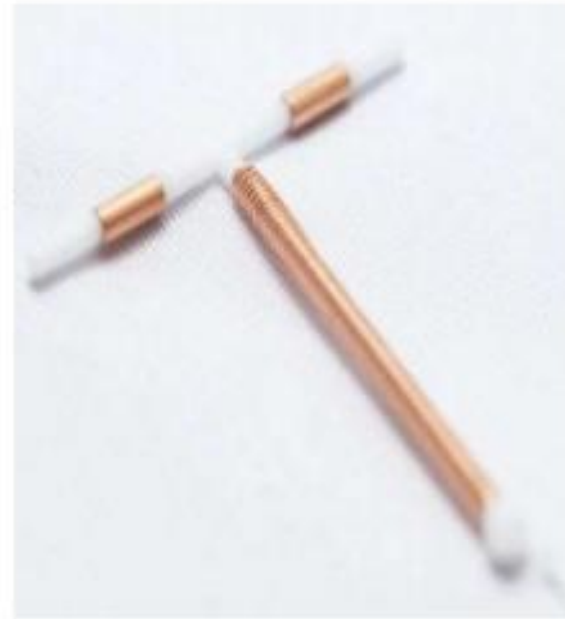
- Life span = 10yrs



Copper containing IUDs



Cu T 200



Cu T 220

Ideal Time for insertion of IUCD

- Within 10days of Menstrual cycle since during first 10 days cervix is well dilated and chance of pregnancy is not there
- post puerperal within 48hrs of delivery or after 6weeks of delivery

Ideal Candidate for IUCD

- 1) Must have atleast 1 child
- 2) Must be ready for frequent follow ups
- 3) Monogamous relationship
- 4) No h/o PID

COMPLICATIONS

-MC complication = Bleeding

- MC reason for removal of IUCD= Pain

3PM DEVICE (Mnemonic)

Pain

Pregnancy due to failure

Perforation

Menstrual disturbances

Missed IUD

Difficult removal

Expulsion "spontaneous"

Vaginal discharge

Infection "PID"

Colics

Ectopic pregnancy

MISPLACED IUCD

Causes : 1) Thread has torn

2) Cu-T expelled out

3) Cu t perforated uterus and entered abdominal cavity

4) Cu T deep in uterine cavity



Rx: Laparotomy

IOC : **X-Ray/USG**

Gold standard IOC : **Hysteroscopy**

Cu T visible in X- ray due to presence of **BaSO₄** coating

BARRIER METHOD

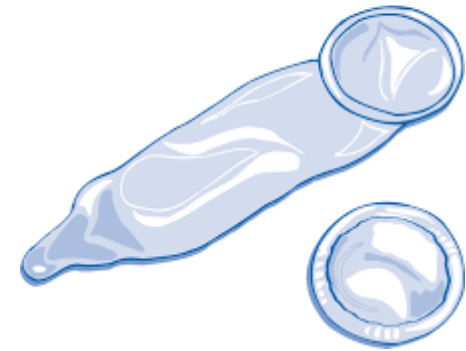
MALE CONDOMS

Polyurethane Condoms have a longer shelf life and can be used with Lubricants.


Male Condom

Latex Condoms get damage when used with lubricants

- **Pearl Index** : 2-14
- An airfree space must be left before use
- 1 condom Should be used only once
- soon after ejaculation, male should withdraw penis slowly holding the condom firmly against body to prevent it from falling inside female genital tract
- Prevents from Sexually Transmitted diseases and HIV
- It can lead to contact dermatitis in female



Non contraceptive uses of condom

- 1) As condom catheters in males
 - 2) Used in Post partum hemorrhage as condom Tamponade
 - 3) After vaginoplasty
- 

FEMALE CONDOM

- One end is open and other end is close
- made up of Polyurethane/Latex
- Should be inserted just before intercourse and removed after 8hrs so that spermicides can act on it
- Pearl Index : 5-21



OCCLUSIVE CAPS

Vaginal Diaphragm

Cervical Cap

- Occlusive caps shouldn't be removed before 6-8hrs and shouldn't be kept for more than 24hrs
- Disadvantages : 1) doesn't protect from STIs and HIV
- 2) May rarely cause Toxic Shock Syndrome

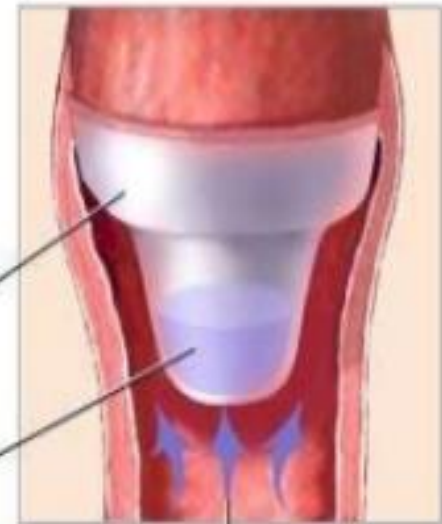
Cervical Cap



Barrier method:
The cervical cap fits snugly over the cervix, preventing sperm from entering the uterus



Cervical cap blocks sperm from entering cervix



Spermicide

Sperm



Spermicide inside diaphragm kills sperm

The cervical cap is a flexible rubber cup-like device that is filled with spermicide and self-inserted over the cervix prior to intercourse. The device is left in place several hours after intercourse. The cap is a prescribed device fitted by a health care professional and can be more expensive than other barrier methods, such as condoms.

DIAPHRAGM



Barrier method:
The diaphragm fits over the cervical opening, preventing sperm from entering the uterus



Diaphragm blocks sperm from entering cervix



Spermicide

Sperm



Spermicide inside diaphragm kills sperm

VAGINAL SPONGE(TODAY)

- Contains spermicide : **Nonoxynol 9**



Sponge absorbs sperm, preventing them from entering cervix



Sperm



Spermicide inside diaphragm kills sperm

adam.com



OCPs

OCPs (100 million users)

- Oral contraceptive pills are meant for **21 Days** in a cycle
- **MODE OF ACTION:**
 - **Inhibition of Ovulation** – Synergistic effect of estrogen and progesterone on HPO axis blocking the release of GnRH by negative feedback mechanism
 - **Endometrial Hypoplasia** – endometrium nonreceptive to embryo
 - **Cervical Mucus Alteration** – Hostile environment for sperm penetration
 - **Tubal Motility Interference**

**Monophasic, Biphaseic and Triphasic pills –
Monophasic pills regimen preferred**

TYPES OF OCP'S

- 1) Monophasic :have same estrogen and progesterone composition for all 21 days
- 2) Biphasic : 1st 10 days : One dose
Next 11 days: other dosage
- 3) Triphasic : Dosage changes every 7 days for 21 days and the repeats in next cycle

OCP Usage

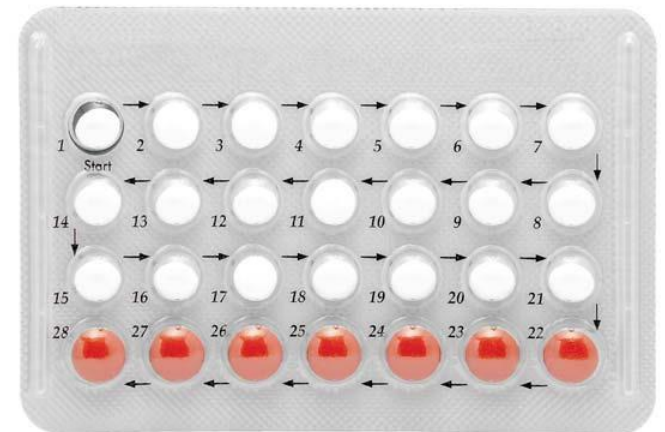
1) Start from Day 1-5 of menstrual cycle

If started after Day 5 = backup contraceptive should be used for 7days

2) After MTP/abortion : Can begin immediately

If started after 7days = backup contraceptive to be used for 7days

Note: 1st 21 tablets are OCPs....Last 7 are Iron Folic acid tablets.....7days OCP free period should be maintained to allow for withdrawal bleeding



If missed 1 or 2 pills = Take pill as soon as remembered

If missed >3pills = Take pills as usual but use condoms as well for 7days



-If missed 3 or more of these 7 pills
= Use pills as such
Through IFA tablets and start
fresh from next week

If any of these IFAs are missed
Throw missed pills and
use as such

MALA-D

Ethinyl Estradiol = 30micrograms

Levonorgestrel = 0.15mg

Available at Rs.3/- in market

MALA-N

Ethinyl Estradiol = 30micrograms

Levonorgestrel = 0.15mg

Available at Govt. health facilities **free of cost**

Low Dose Pills

OCPs with Estrogen <30micrograms

Very Low Dose Pills

OCPs with Estrogen <20micrograms



**Q. Minimum effective dose of estrogen
in OCPs ??**



Ans. 20micrograms



Tumors associated with OCPs

L

Liver cancer

O

OCPs

C

Cervical Cancer

Bharat

Breast Cancer

Pakistan

Pituitary adenoma

OCPs provides protection against

1. T = Thyroid autoimmune disorders
2. H = Hirsutism
3. E = **Endometrial carcinoma**

4. C = Colorectal cancer
5. O = **Ovarian cancer**
6. B = **Benign Breast diseases (fibroadenosis)**
7. R = Rheumatoid arthritis
8. A = Anemia and Acne
9. S = Salpingitis (PID)

10. U = **Uterine cancer**
11. F = Fibroids (exception is submucous variety)
12. O = Ovarian cysts

13. P = Pelvic inflammatory disease
14. O = Osteoporosis and Osteopenia
15. E = Ectopic pregnancy
16. M = Mittelschmerz , Menorrhagia , Dysmenorrhea , Premenstrual Tension , Polymenorrhea .

Warning Signs of OCPs Complications

ACHES

A Severe **Abdominal** Pain

C Severe **Chest** Pain

H Severe **Headache**

E **Eyes** – blurred vision

S **Sharp** leg Pain

MINI-PILLS

-Progesterone only pills

- Mech. Of action : 1) Thickens cervical mucus : Main action
- 2) Prevents ovulation

-Timing of usage : 1) from 5th day of cycle

- 2) Immediately after MTP/Abortion
- 3) Lactating female: start between 6wks– 6months
- 4) If not breastfeeding after delivery; start <6wks



- Indication : 1) Lactating females

2) >40yrs

3) Sickle cell anemia/ Seizures

Side Effects Of Mini pills

1) Withdrawal bleeding

2) Headache

3) Acne

4) Breast pain

– doesn't cause **Thromboembolism** (like Estrogen containing OCPs)

– It affects carbohydrate metabolism, hence C.I in Diabetes

SIDE EFFECTS OF OCPs

CONTRACEPTIVES:

Cholestatic jaundice

Oedema (corneal)

Nasal congestion

Thyroid dysfunction

Raised BP

Acne/ Alopecia/ Anaemia

Cerebrovascular disease

Elevated blood sugar

Porphyrria/ Pigmentation/ Pancreatitis

Thromboembolism

Intracranial hypertension

Vomiting (progesterone only)

Erythema nodosum/ Extrapyrarnidal effects

Sensitivity to light

PROGESTIN ONLY INJECTABLES

- 1) DMPA (Depot medroxy Progesterone Acetate) 150mg i.m once in 3 months
- 2) NETO (Norethindrone enanthate) 200mg i.m once in every 2months

SIDE EFFECTS

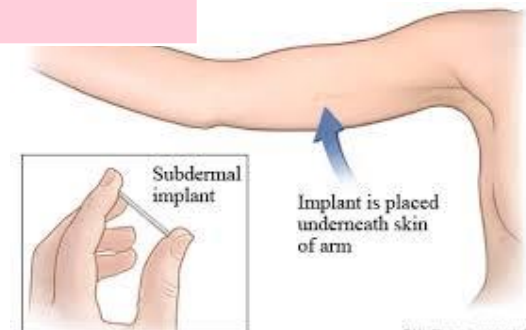
- 1) Irregular bleeding
- 2) Weight gain
- 3) Prolonged infertility



PROGESTIN ONLY IMPLANTS

Subdermal Implants Include :

NORPLANT 1	NORPLANT 2	IMPLANON
<ul style="list-style-type: none">- It has 6rods containing 36mg Levonorgestrel each	<ul style="list-style-type: none">- 2rods with 75mg LNG each	<ul style="list-style-type: none">- Single rod containing 3-keto-desogestrel
<ul style="list-style-type: none">- Replaced every 5years		<ul style="list-style-type: none">-MC being used nowadays- Replaced every 3yrs
<ul style="list-style-type: none">- Acts by thickening of cervical mucus	<ul style="list-style-type: none">Acts by thickening of cervical mucus	<ul style="list-style-type: none">- Acts by inhibiting ovulation



Norplant

- 6 Silastic rod – 3.4 mm x 2.4 mm
- 36 mg LNG
- Daily release 50 – 80 mcg for 1st yr.
30 – 35 mcg over next 5 yrs.
- Life 5 Yrs.
- Insertion –
Day 1 – 7 of M.C.
Immediately after abortion
6 Wks after delivery



EMERGENCY CONTRACEPTIVE

1) Yuzpee method : 2 pills with estrogen 50mcg each followed by 2 pills 12hrs later

-Regimen should be completed within 72hrs

Or

4 pills with estrogen 30mcg each followed by 4 pills 12 hrs later

2) Levonorgestrel 0.75mg within 72 hrs followed 12 hrs later by another dose

3) IUCD : within 5 days of coitus

4) Mifepristone 600mg stat within 72hrs of coitus

5) High dose estrogen

6) Centchroman 2 tablets (60mg) twice in 24hrs within 24hrs of intercourse

EMERGENCY CONTRACEPTIVE

Mechanism of Action :

- 1) Prevents ovulation
- 2) Prevents fertilisation
- 3) Prevents implantation

Note : It doesn't terminate an early pregnancy



ESSURE

- It is a permanent sterilisation method.
- Micro-inserts are placed in fallopian tube = it causes foreign body reaction @ fallopian tube and thus causes scarring around micro-insert over 3months and thus leads to blockage in fallopian tube



NOVA-T

Nova T 380 is an intrauterine device made of polyethylene and wound with copper wire with a silver core.



CONTRACEPTION OF CHOICE



1) Previous h/o PID

Barrier method

Since PID is a STD....and barrier methods prevents STD

2) Previous h/o Ectopic Pregnancy

OCPs

Since it stops ovulation and when there is no ovulation there are no chances of either uterine or ectopic pregnancy

PROMISQUITY (Multiple Partners)

Barrier Method



4) Cancer Cervix

Barrier Method

Since HPV is an important risk factor.
HPV is a STD and STDs are prevented by barrier methods.

Lactating Females

Mini-pills > Lactational amenorrhoea

This is a controversial question. Different books have given different answers.

So no need to worry- controversial question doesn't repeat

SICKLE CELL ANEMIA

MINI PILLS

Since OCPs and IUDs contain estrogen which causes thromboembolism
And sickle cell anemia is a hypercoagulable condition due to sticky RBCs

TROPHOBLASTIC TUMORS

OCPs

Since if we use IUCD there can be irregular bleeding and we won't be able to know whether the bleeding is due to contraceptives or due to Trophoblastic tumors which may delay diagnosis and treatment

NEWLY MARRIED FEMALE

OCPs

SPACING

IUCDs

Couple Living in different cities & meeting only occasionally

Barrier Method

FEMALE WANTING REGULAR MENSTRUAL CYCLES

OCPs



FEMALE STERILISATION



ELIGIBILITY CRITERIA

- Woman should be married
- Couple should have atleast 1 child >1yr of age
- Female should be of sound mind.
- Female between 22-49yrs
- No past history of sterilisation of spouse

TECHNIQUES

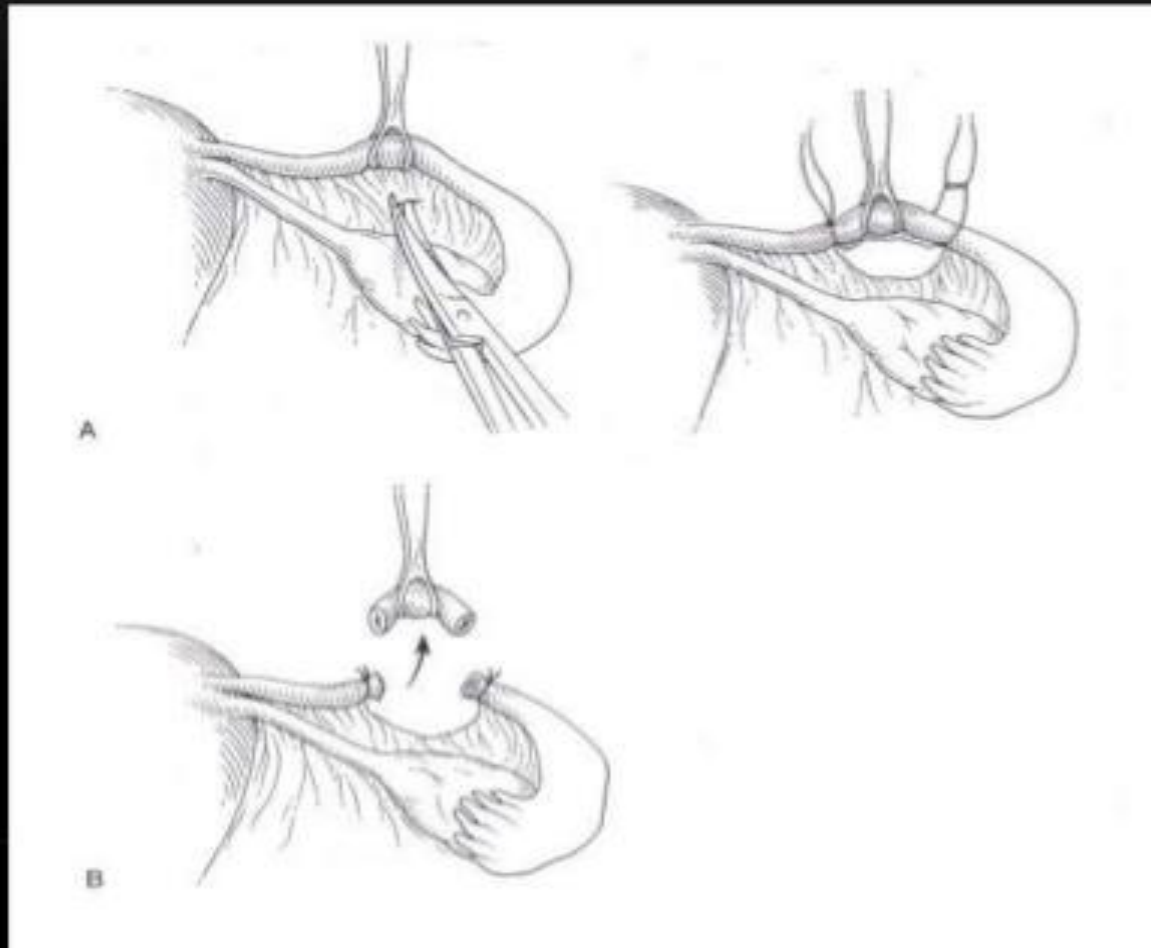
Conventional

- 1) Vaginal
- 2) Per Abdomen : M- Madlener
U - Uchida
P - Pomeroy / Parkland
I - Irwing
K - Kroener's method

Laparoscopic

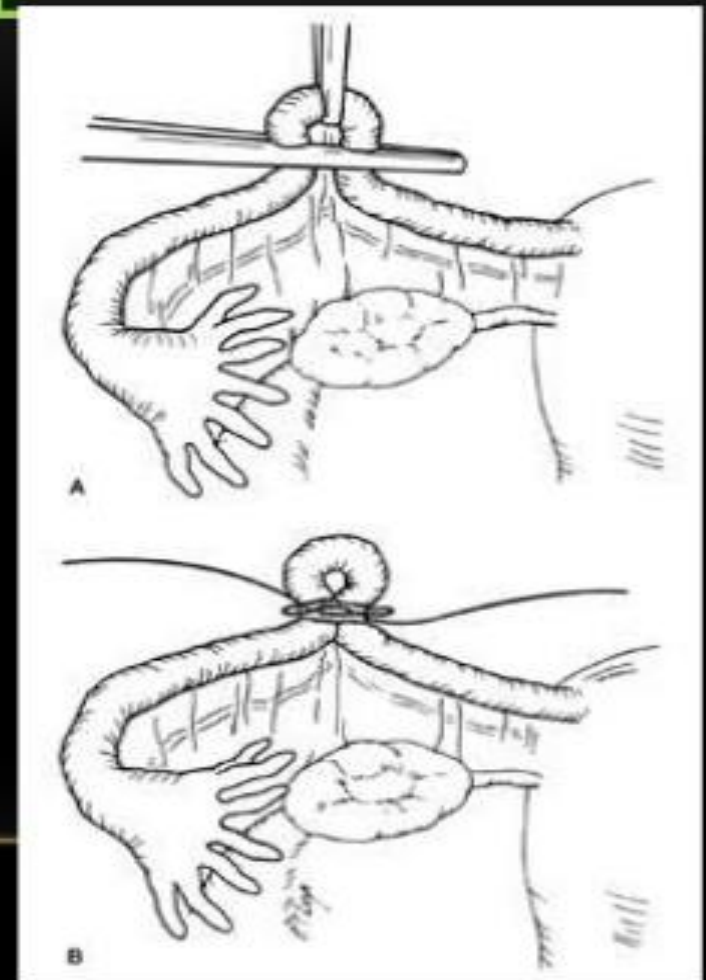
- 1) Fallope ring = MC used
- 2) Clips

PARKLAND PROCEDURE



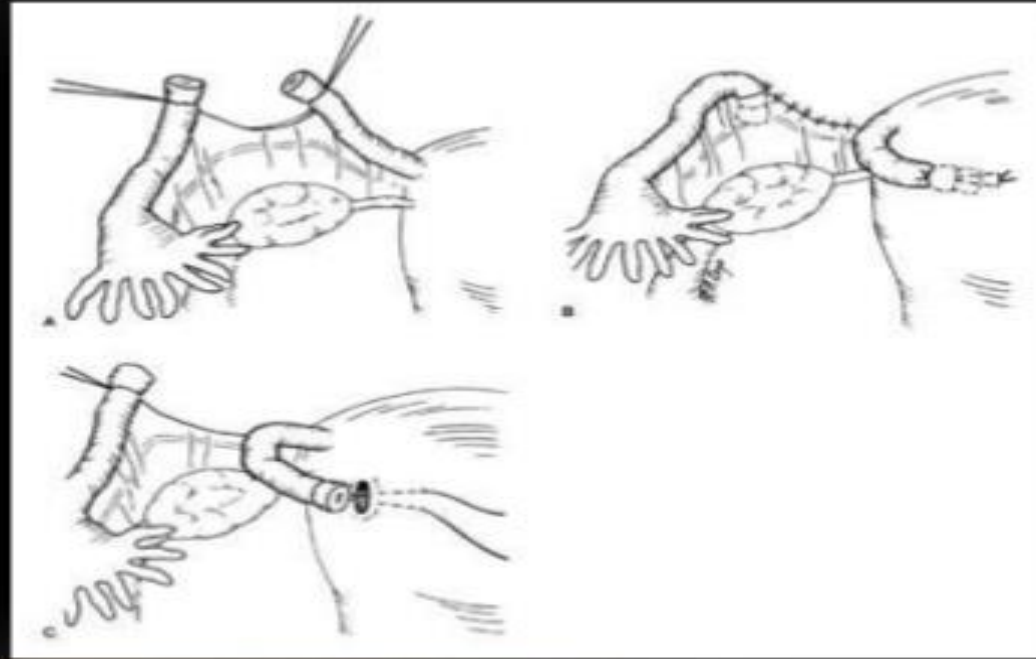
MADLENER PROCEDURE

- Crushed at base
- Ligated with silk
- Failure rate high



IRWING TECHNIQUE

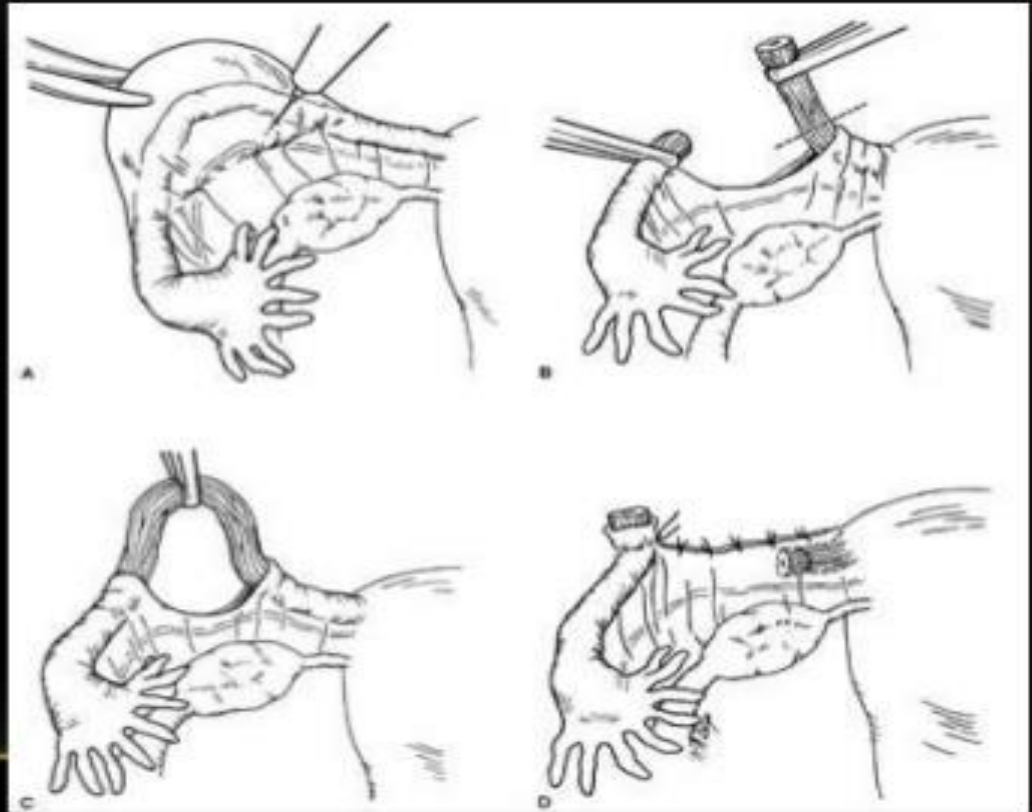
- Catgut
- Proximal tube buried within substance of myometrium.
- Distal end buried in mesosalpinx
- Very low failure rate



IRWING – **IR**REVERSIBLE

UCHIDA TECHNIQUE

- Saline with epinephrine injected into subserosal area of tube
- Medial stump buried in mesosalpinx
- Lateral stump ligated, kept outside mesosalpinx – *purse string suture*
- Failure rate very low.



-GOOD POTENTIAL FOR REVERSIBILITY

POMEROY'S METHOD

- MC method
- Good potential for reversibility

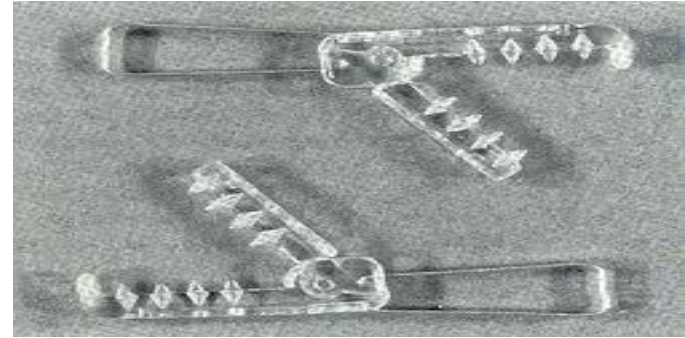


LAPAROSCOPIC METHOD

FALLOPE RING



HULKA CLEMEN CLIPS



FILSHIE SILICON CLIPS



TIMINGS FOR FEMALE STERILISATION

- 24hrs after normal delivery
- during c-section
- Interval sterilisation: 6wks after delivery
- Laparoscopic sterilisation is done with 1st trimester MTP or as interval sterilisation

SITE OF STERILISATION

- Done at junction of proximal and middle third of tube.
- MC site = Isthmo-ampullary
- MC site for reversibility = Isthmo-isthmic type

REVERSIBILITY OF TUBECTOMY

- Isthmo-isthmic type has best chance of reversibility
- laparoscopic clips : Best chance of reversibility among methods
- other methods with good chance of reversibility : Pomeroy

Uchida

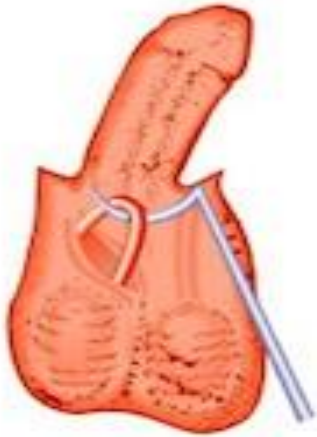
Falope Ring

VASECTOMY

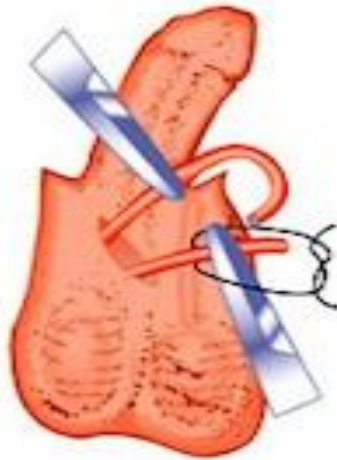
ELIGIBILITY CRITERIA

- should be married
- Couple should have atleast 1 child >1yr of age
- male should be of sound mind.
- Age <60yrs
- No past history of sterilisation of spouse

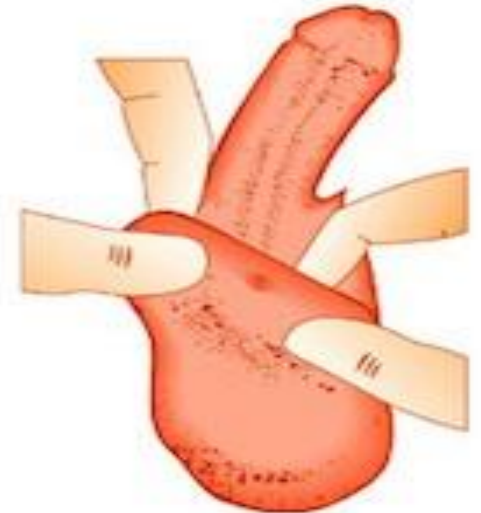
The Vasectomy Procedure



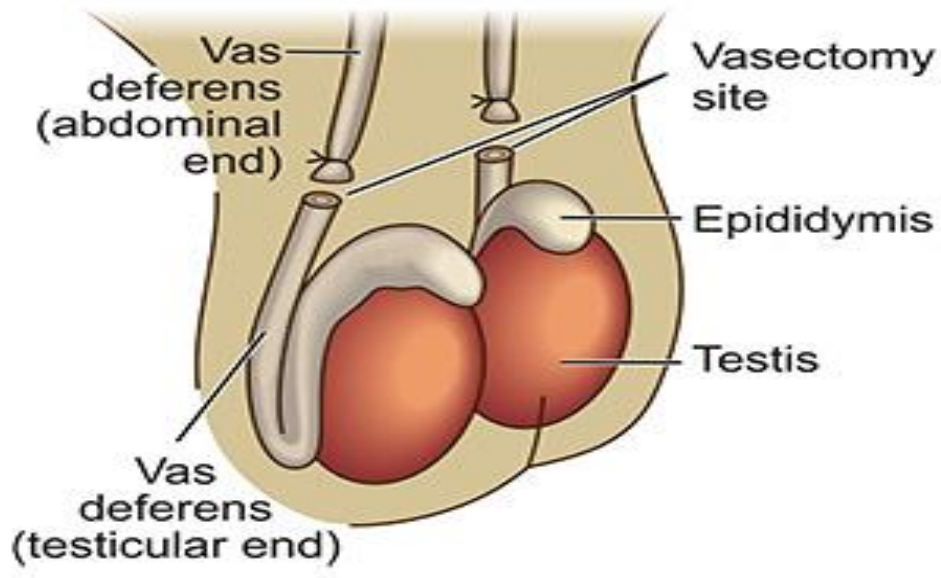
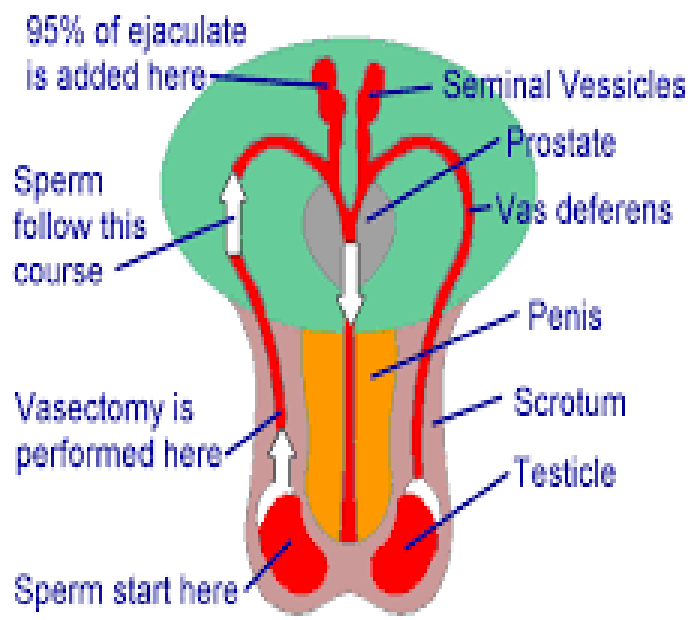
**Needle positioned
to isolate vas
from surrounding
tissue**



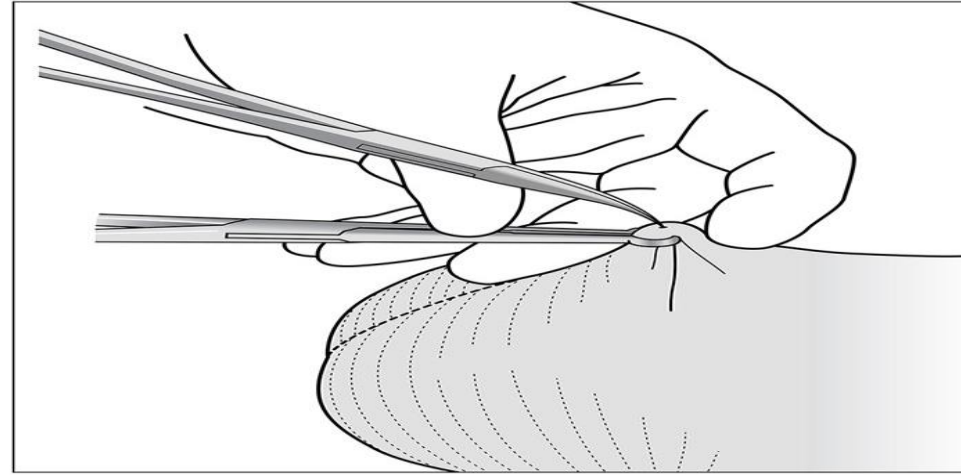
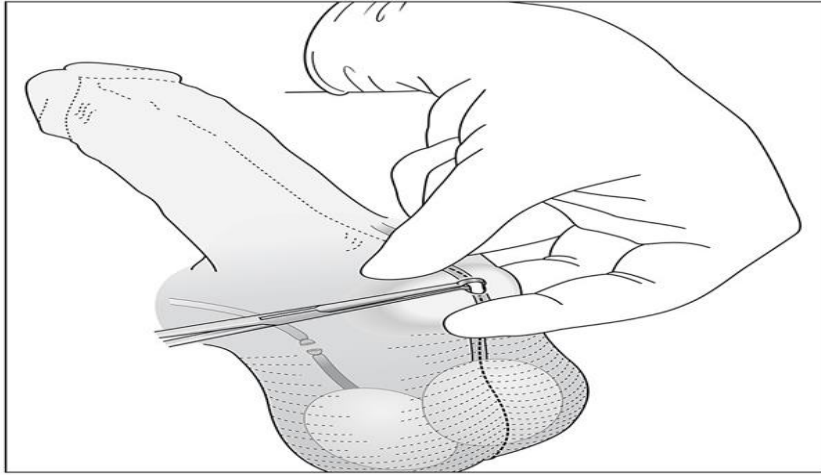
**Vas clamped,
segment removed,
and remaining
ends tied**



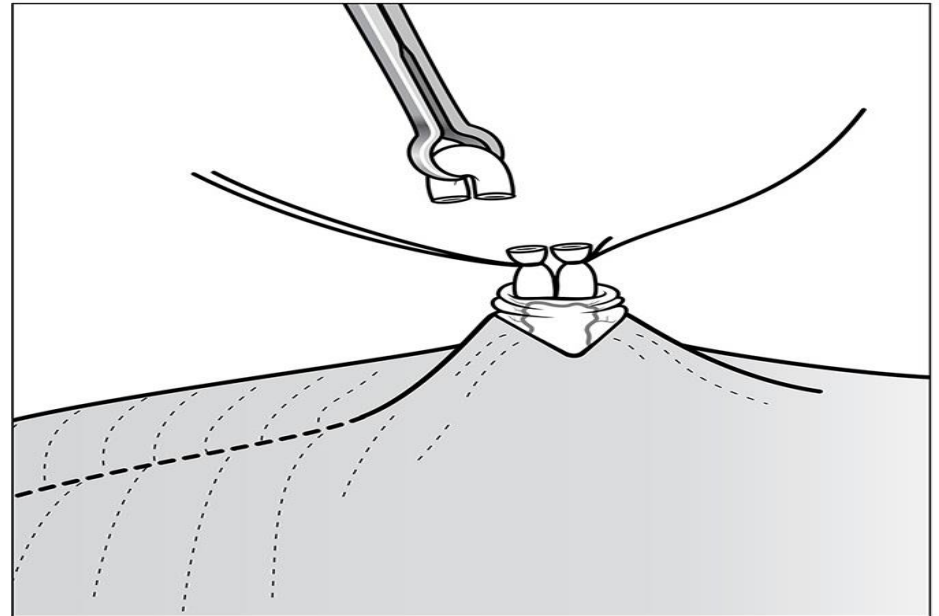
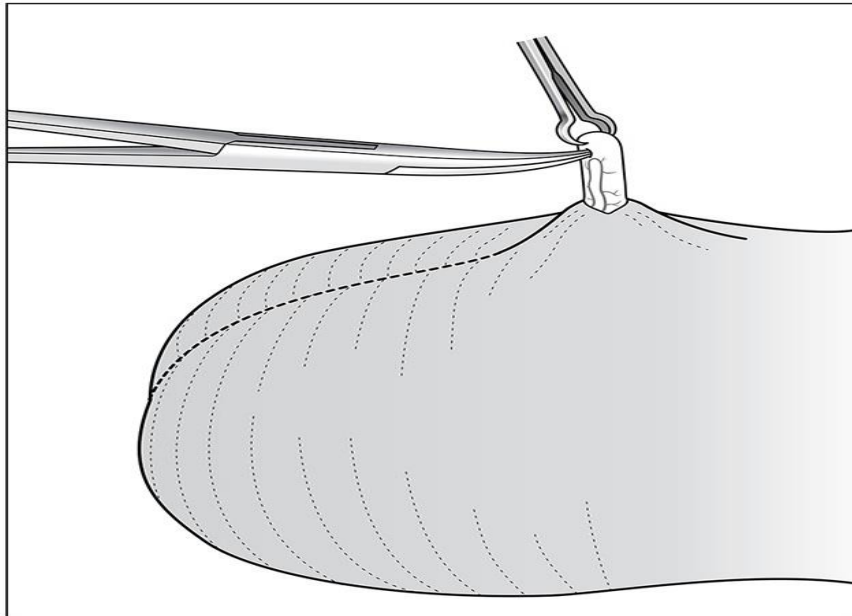
**Scrotum elevated
to permit tied ends
of vas to retract
into original
position**



NO SCALPEL VASECTOMY



No scalpel Vasectomy is also known as Keyhole Vasectomy



POST-OP ADVICE

- 1) Patient need 30ejaculations/3 months before he can be declare sterile
- 2) Couples should use barrier method for 3months
- 3) Patient should undergo semen analysis monthly for 3months till there are no sperms in semen
- 4) Once the patient is declared aspermic , no other contraceptive is required
- 5) Avoid bath for 24hrs
- 6) Testis bandage should be used for 15 days, keep site dry.
- 7) Stitch removal after 5days

Q. MC cause of
vasectomy failure??

Ans. Mis-identification of Vas Deferens



2) Low-dose oral contraceptive pills contain this progesterone: [All India 2011]

- A) Levonorgestrel
- B) Norgestrel
- C) Desogestrel
- D) Norethisterone

Ans. DESOGESTREL

A close-up photograph of a person's right hand holding a black fountain pen, writing the words "Thank you" in a fluid, cursive script on a white surface. The pen is positioned at the end of the word "you", with the nib touching the paper. The background is a plain, light-colored surface, and the lighting is soft, highlighting the texture of the paper and the hand.

Thank you