



RAMA UNIVERSITY

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FACULTY OF NURSING

Infertility



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INFERTILITY

- ❑ Infertility is defined as a failure to conceive within one or more years of regular unprotected intercourse.

TYPES OF INFERTILITY

- ▶ There are two types of infertility.
 1. Primary infertility: Primary infertility denotes couples who have never been able to conceive.
 2. Secondary infertility: Secondary infertility indicates difficulty in conceiving after already having conceived.

INCIDENCE

- ▶ Incidence: Infertility problem affects 1 in 7 couples.

INCIDENCE

- ▶ Conception depends on fertility potential of both male and female partner.

MALE FACTORS

- 1) Defective spermatogenesis.
- 2) Obstruction of Efferent duct.
- 3) Failure to deposit sperm high in the vagina.
- 4) Errors in the seminal fluid.

DEFECTIVE SPERMATOGENESIS

1. Congenital: Due to undescended testes spermatogenesis is depressed.
2. Hypospadias.
3. Thermal factor: Varicocele.
4. Infection: Mumps, Orchitis damage the spermatogenesis.
5. Gonadotrophin suppression: It happens in the malnutrition, heavy smoking and high alcohol consumption.

6. Endocrine factors: Raised FSH level is seen in idiopathic testicular failure.

7. Loss of sperm motility.

8. Genetic: Klinefelter's syndrome (44+ xxy).

9. Iatrogenic: Cytotoxic drugs, radiation therapy, and antidepressant drugs are likely to obstruct spermatogenesis.

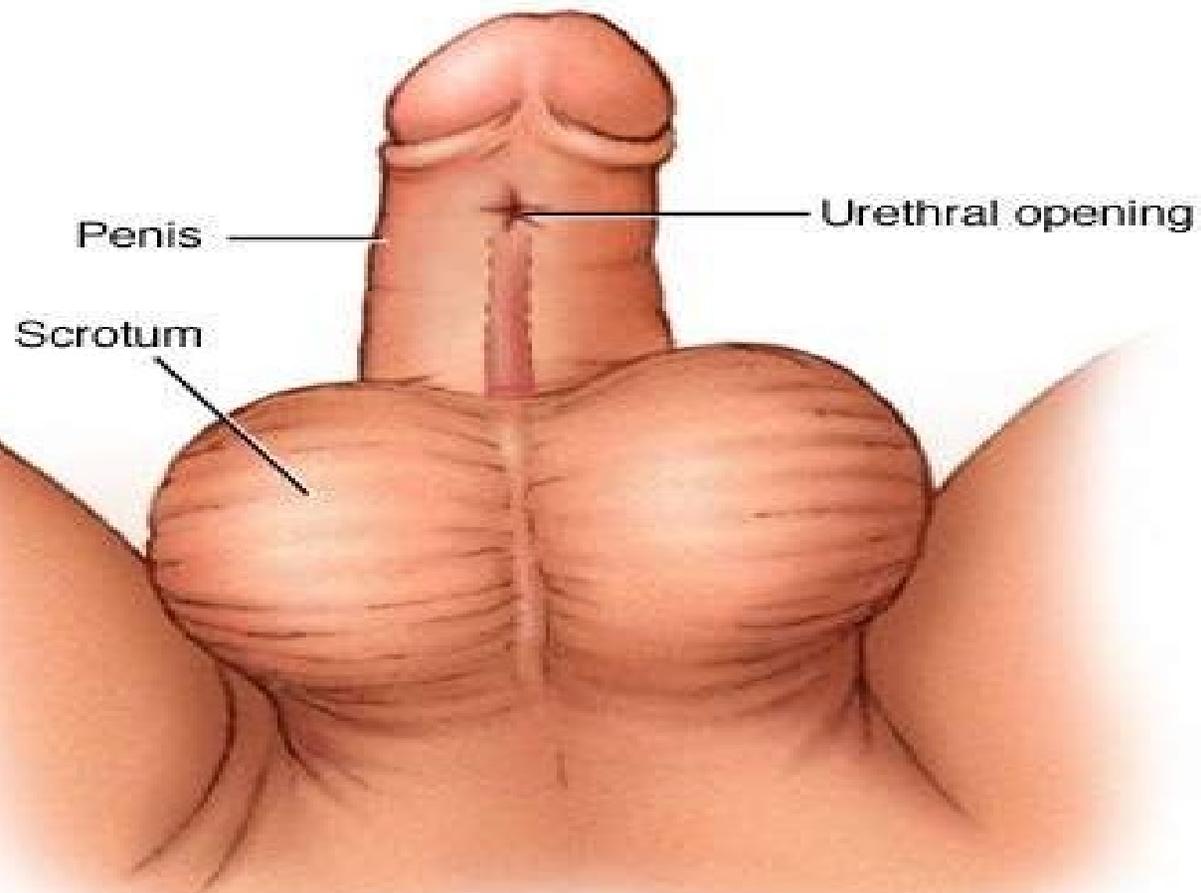
OBSTRUCTION OF EFFERENT DUCT

1. Gonococcal or tubercular infection.
2. Surgical trauma during vasectomy.

FAILURE TO DEPOSIT SPERM HIGH IN THE VAGINA

- 1) Erectile dysfunction.
- 2) Ejaculatory defects such as premature retrograde or absence of ejaculation.
- 3) Hypospadias.

HYPSPADIAS



ERRORS IN THE SEMINAL FLUID

1. Low fructose content.
2. High prostaglandin content.
3. Unusually low volume of ejaculation.

C/M OF MALE INFERTILITY

1. Problems with sexual function e.g. difficulty with ejaculation, reduced sexual desire.
2. Pain and swelling in the testicle area.
3. Recurrent respiratory tract infection.
4. Decreased facial or body hair.
5. Having a low sperm count.
6. Gynecomastia.
7. Inability to smell.

DIAGNOSTIC EVALUATIONS

1. History collection.
2. Physical examination: General appearance, external genitalia.
3. Semen analysis test: Semen volume, sperm motility, semen culture.
4. Genetic test: Sex chromosome and somatic mutation.
5. Endocrine test: Serum testosterone, serum L.H and F.S.H.

TREATMENT OF MALE INFERTILITY

- ▶ The treatment of male partner is indicated in extreme oligospermia, Azospermia, low volume ejaculation and impotency.



▶ Treatment consists of:

1. Improvement of general health.
2. Avoiding medications.
3. Medications to treat specific causes.
4. Specific treatment.
5. Surgical management.

IMPROVEMENT OF GENERAL HEALTH

- ▶ Reduction of weight in obese.
- ▶ Avoidance of alcohol and heavy smoking.
- ▶ Avoidance of occupation that may elevate testicular temperature.

AVOIDING MEDICATIONS

- ▶ Medication that interferes with the spermatogenesis such as beta blockers, anti depressant, Cytotoxic drugs, cimetidine should be avoided.

MEDICATION TO TREAT SPECIFIC CAUSES

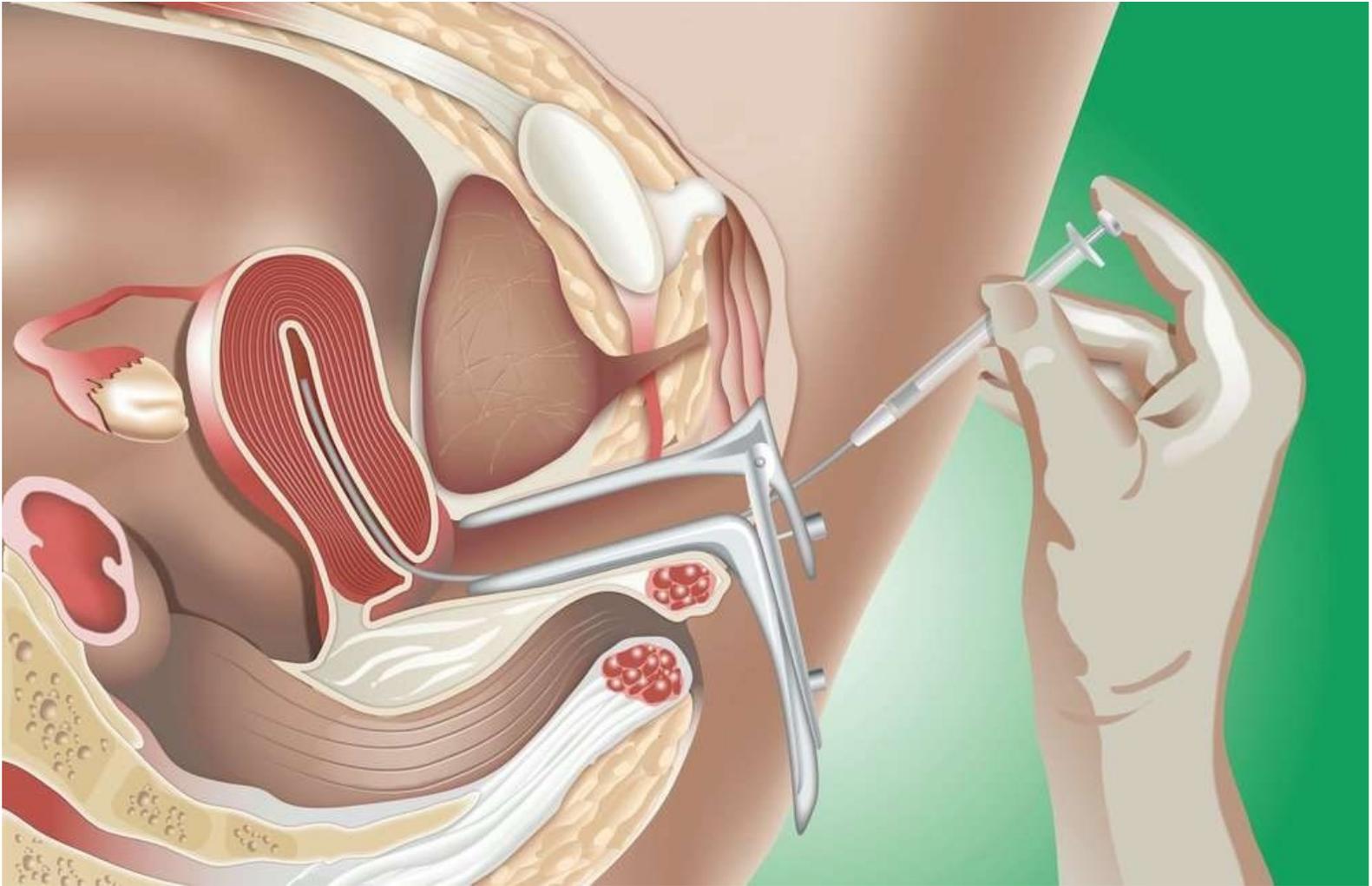
- A. HCG, HMG for hypogonadism.
- B. Dopamine agonists (Carbergoline) to improve low libido.
- C. Clomophene citrate.
- D. Antibiotics for genital tract infection.

SPECIFIC TREATMENT

- ▶ Specific treatment includes Intrauterine insemination(IUI) ,
Invitro fertilization(IVF),
Intracytoplasmic sperm
injection(ICSI).

INTRAUTERINE INSEMINATION (IUI)

- ❑ IUI is a procedure in which a catheter is inserted through the cervix into the uterus to deposit a sperm sample directly into the uterus.



INVITRO FERTILIZATION

- ▶ IVF is a process by which an egg is fertilized by sperm outside the body. In Vitro= In glass.

IN VITRO FERTILIZATION

IN VITRO FERTILIZATION Infographic



INTRACYTOPLASMIC SPERM INJECTION (ICSI)

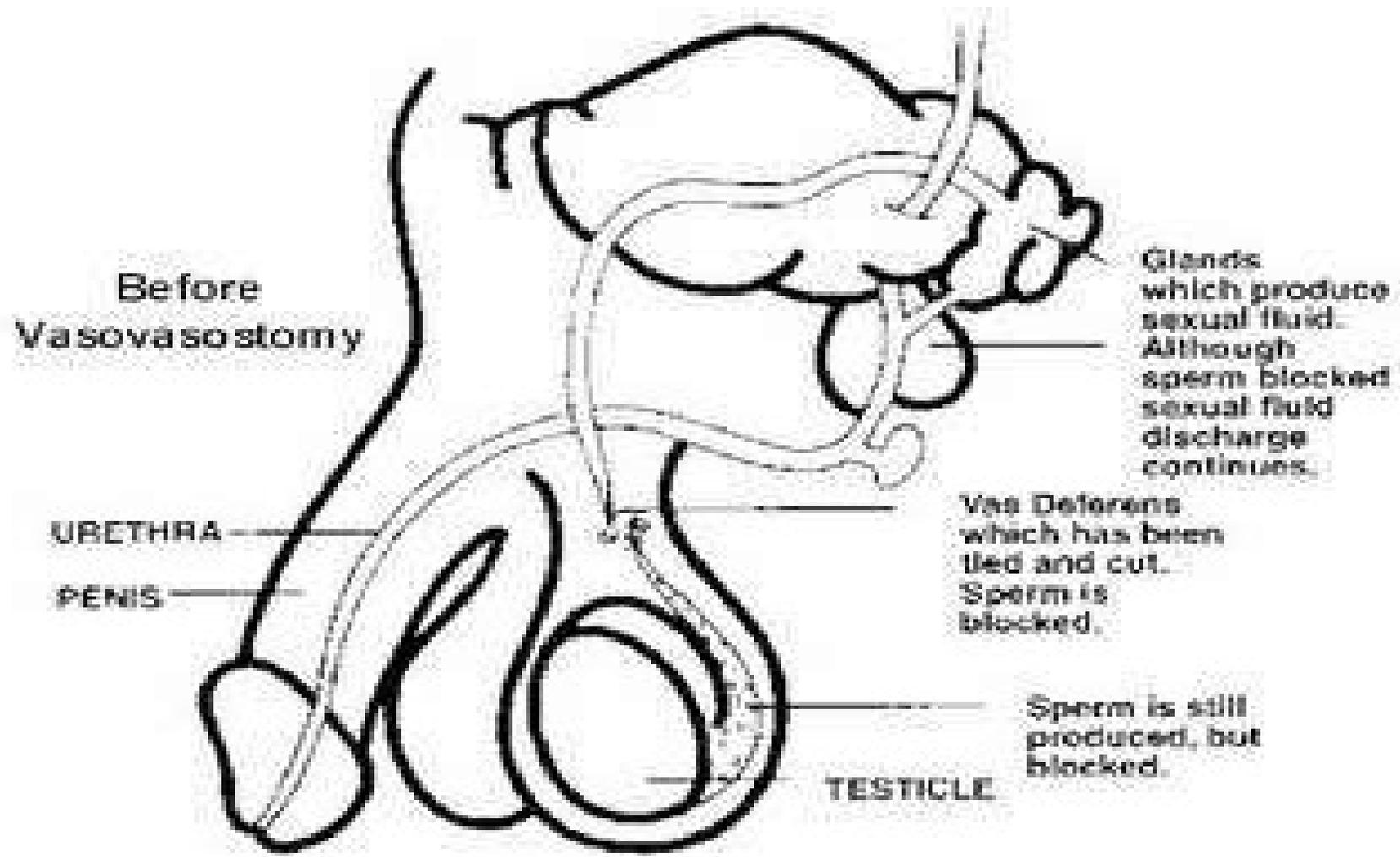
- ▶ ICSI is the most successful form of treatment who are infertile.
- ▶ ICSI only requires one sperm which is injected directly into the egg and fertilized egg is transferred to uterus.



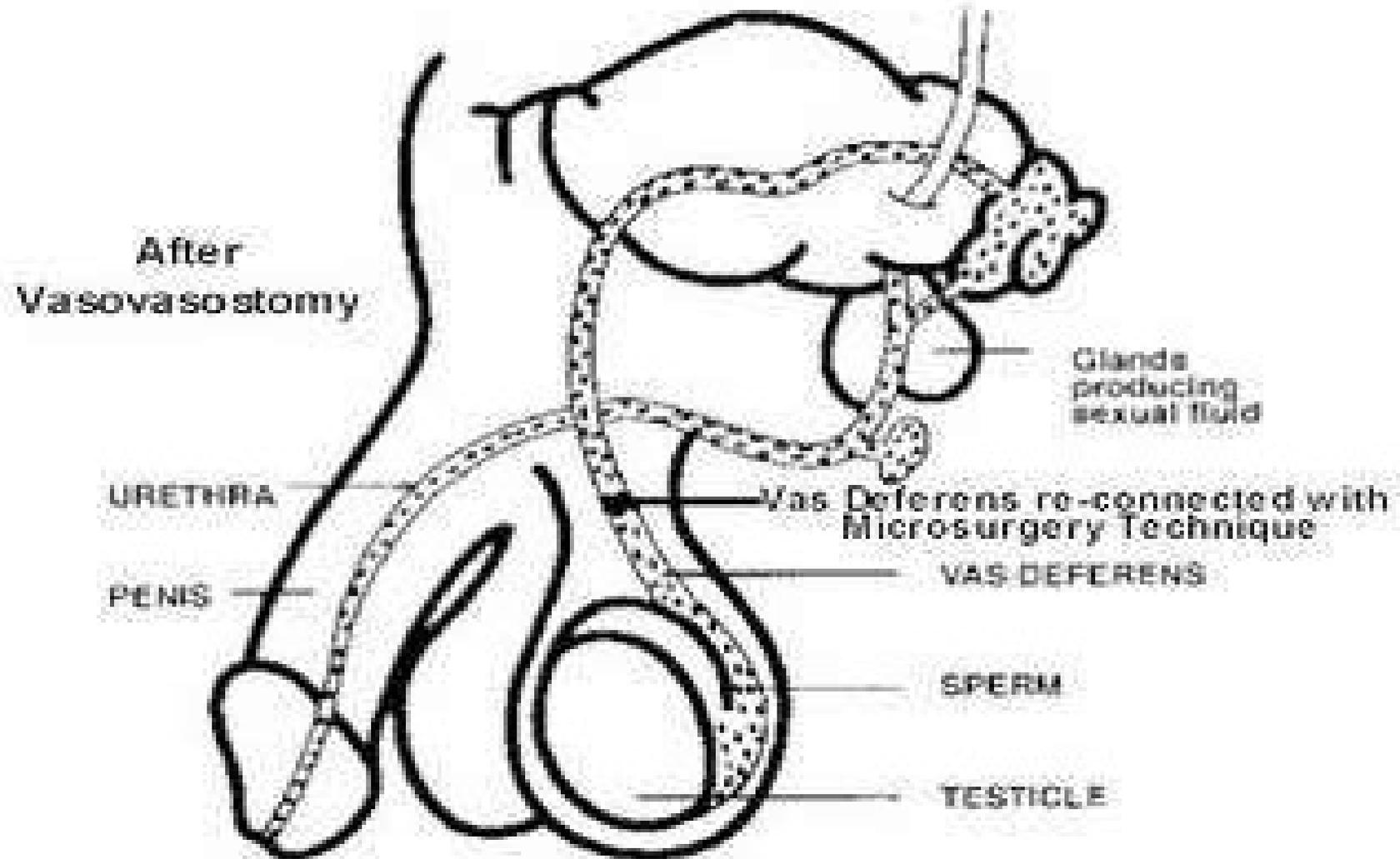
SURGICAL TREATMENT

- ▶ Vasovasostomy: A Vasovasostomy is a surgical procedure in which the effects of a vasectomy are reversed.
- ▶ Vasovasostomy creates an opening between the separated ends of the vas deferens .

BEFORE VASOVASOSTOMY



AFTER VASOVASOSTOMY



FEMALE INFERTILITY

- ▶ Causes of female infertility are:
 1. Ovulation problems.
 2. Fallopian tube damage.
 3. Risk factors

OVULATION PROBLEMS

- 1) An hormonal imbalance: FSH or LH secretion.
- 2) Anovulation.
- 3) Polycystic ovarian disease.
- 4) Eating disorders such as anorexia or bulimia
- 5) Stress.
- 6) Alcohol or drug use,
- 7) Intense exercise that causes a loss of body fat.

FALLOPIAN TUBE DAMAGE

1. Previous infection due to gonorrhoea.
2. Fibroids.
3. Endometriosis: Appearance of endometrial tissue outside the womb. Causes pain
4. Ectopic pregnancy.
5. A congenital defect.

RISK FACTORS

1. Age.
2. Poor diet.
3. Being overweight or underweight.

DIAGNOSTIC EVALUATIONS

- ▶ Laboratory tests: Measurement of FSH and progesterone.
- ▶ Endometrial biopsy is performed to verify ovulation.
- ▶ Hysterosalpingography .
- ▶ Laparoscopy .
- ▶ Pap smear to check for signs of infection.

TREATMENT

- ▶ Treatment of female infertility consists of fertility restoration drugs, fertility restoration surgeries, Assisted reproductive technologies(ART) .

FERTILITY RESTORATION DRUGS

- ❑ To stimulate ovulation. Drugs are:
 1. Clomophene citrate.
 2. Human menopausal gonadotrophins.
 3. Follicle stimulating hormone.
 4. Gonadotrophin releasing hormone analog.
 5. Bromocriptine.

FERTILITY RESTORATION SURGERIES

- ▶ Tissue removal: This surgery removes endometrial or pelvic adhesions with lasers or ablation.
- ▶ Tubal surgeries: If fallopian tubes are blocked or filled with fluid , tubal surgery improve chances of becoming pregnant.

LAPAROSCOPIC SURGERY

- ▶ Laparoscopic surgery is performed to remove adhesions and create a new tubal opening.
- ▶ Salpingectomy: It can improve chances of pregnancy with invitrofertilization.

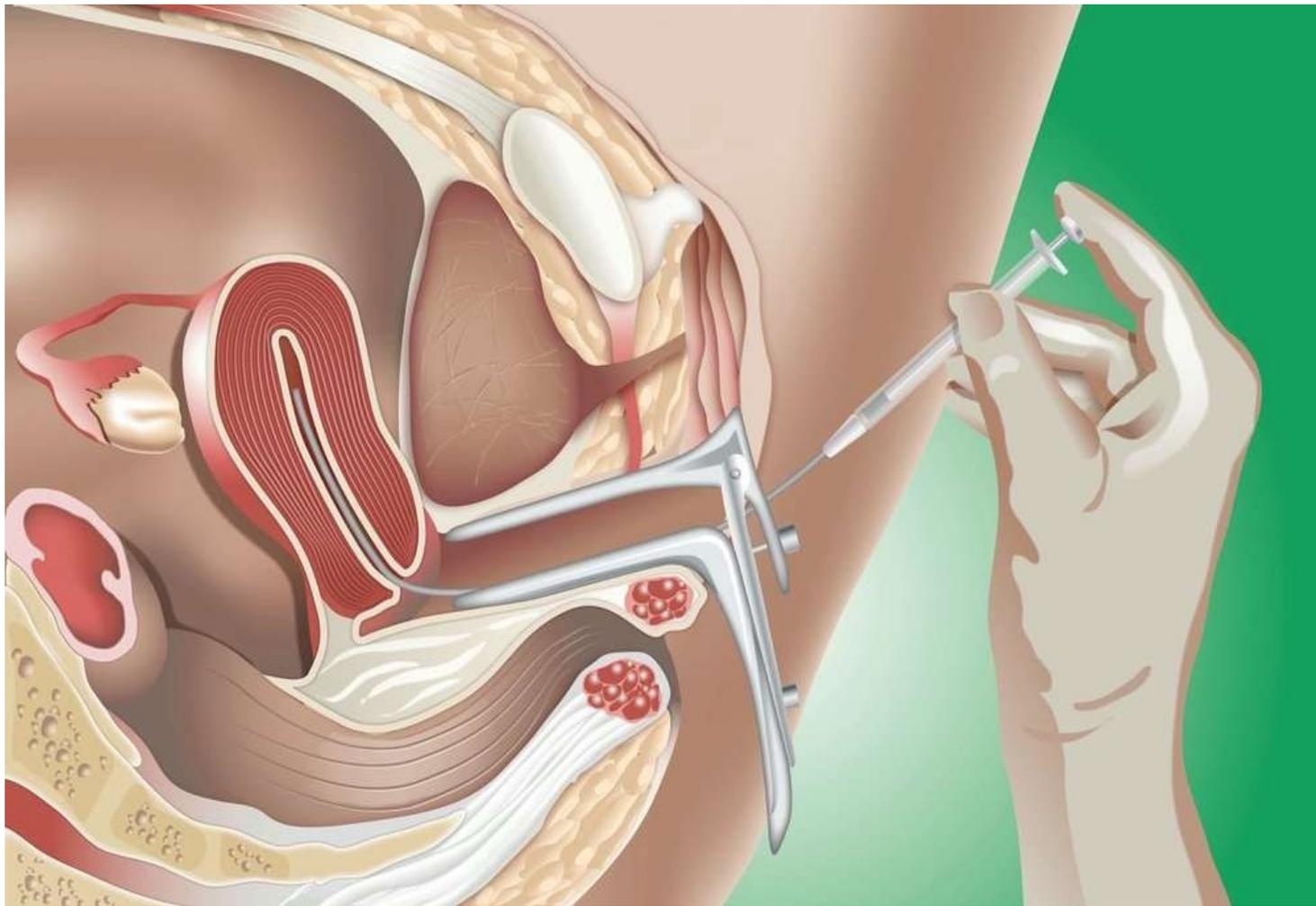
ASSISTED REPRODUCTIVE TECHNOLOGIES (ART)

- ▶ ART involves removing of eggs from a woman body and mixing with sperm in the laboratory.

COMMON ART METHODS

1. Intrauterine insemination.
2. In vitro fertilization.
3. Zygote intrafallopian transfer(ZIFT) .
4. Gamete intrafallopian transfer(GIFT) .
5. Intracytoplasmic sperm injection(ICSI) .

INTRAUTERINE INSEMINATION (IUI)



IVF

in vitro step by step

2 eggs retrieved from ovary



1 egg production stimulated by hormone therapy



3 sperm sample provided

4 eggs and sperm combined to allow fertilization



5 fertilized eggs introduced into uterus



ZIFT

- ▶ ZIFT is an ART designed to transfer the fertilized embryo into the fallopian tube instead of the uterus.
- ▶ Here zygote is placed in the fallopian tube through which it will reach into the uterus.
- ▶ It is similar to IUF.

GIFT

- ▶ GIFT involves transferring eggs and sperm into the women's fallopian tubes so fertilization occurs in the woman's body.

THANK YOU