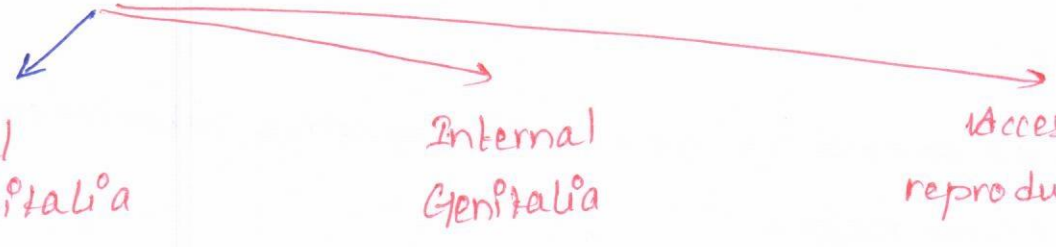
GNM 3rd ANM 2nd Lyne - 1

# Female Reproductive Organs

- The reproductive organs in female are those which are concerned with copulation, fertilization, growth & development of fetus.
- The organs are:




## ⇒ External Genitalia:

- vulva or pudendum includes all visible external genital organs in perineum.
- vulva consists:
  - Mons pubis
  - labia majora
  - labia minora
  - hymen
  - clitoris
  - vestibule
  - urethra
  - skene's glands
  - Bartholin's glands
  - vestibular bulbs.
- vulvar area is covered by keratinised stratified squamous epithelium.

→ Mons pubis : (Mons Veneris)

- It is a pad of subcutaneous adipose connective tissue lying in front of pubis.
- In adult female it is covered with hair.
- Hair pattern (escutcheon) is triangular with base directed upwards

→ Labia majora :

- vulva is bounded on each side by elevation of skin & subcutaneous tissue which forms the labia majora
- skin on outer surface is pigmented & covered with hair follicle.
- Thin skin on inner surface has sebaceous glands but no hair follicle.
- Labia majora are covered with squamous epithelium & contain sweat glands
- Labia majora are homologous to scrotum in male.

→ Labia minor:

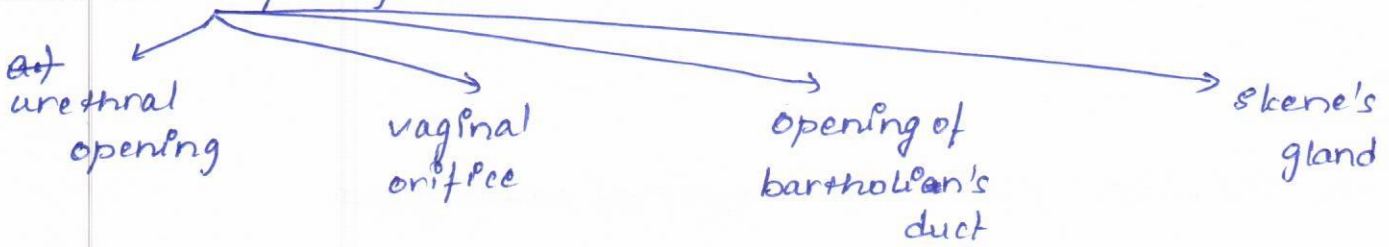
- These 2 skin folds of skin, devoid of fat on either side of labia majora.
- They divide to enclose the clitoris & unite with each other in front & behind the clitoris to form the prepuce & frenulum.
- The lower portion of labia minora fuses across midline to form a fold of skin known as fourchette.
- Between fourchette & vaginal orifice is fossa navicularis.
- Labia minora contain no hair follicles or sweat glands.
- Labia minora is homologous to penile urethra & part of skin of penis in males.

→ Clitoris:

- small cylindrical erectile body.
- It consists of glans, body & 2 crura
- clitoris consists of 2 cylindrical corpova cavernosa (erectile tissue)
- Glans is covered by squamous epithelium
- clitoris is homologous to penis in male.

→ Vestibule:

- It is a triangular space bounded by ~~rest~~ clitoris, posteriorly by fourchette & side by labia minora
- There are 4 opening into vestibule..




a) urethral opening:

- opening situated in midline just in front of vaginal orifice below the pubic arch

b) Vaginal orifice & hymen:

- It lies in posterior end of vestibule
- It is incompletely closed by septum of mucous membrane, hymen
- On both sides it is lined by stratified squamous epithelium.

c) Opening of Bartholin's duct:

- There are 2 bartholin glands, on each side
- They are situated in superficial perineal pouch
- They are pea-sized & yellowish white in color.
- The duct is lined by columnar epithelium but near its opening by

stratified squamous epithelium.

- Bartholin's glands are homologous of bulb of penis in male.

10) skene's glands:

- They are largest paraurethral glands
- They are homologous to prostate in male.

→ Vestibular bulb:

- Bilateral masses of erectile tissues situated beneath the mucous membrane of vestibule
- They are homologous to bulb of penis & corpus spongiosum in male.

→ Perineum:

- It is bounded above by inferior surface of pelvic floor.
- Below by skin between the buttocks & thighs
- laterally, it is bounded by ischiopubic rami, ischial tuberosities & sacrotuberous ligaments
- posteriorly by coccyx.
- Diamond shaped of bony pelvic outlet is divided into 2 triangle

Anterior triangle is called uro-genital triangle
- It fills up the gaps of hiatus urogenitalis.

posterior, the anal triangle
- No obstetric importance
- contains terminal part of anal canal with sphincter ani externus, anococcygeal body, ischiorectal fossa.

→ Development :- External genitalia is developed in regions of cranial aspect of ectodermal cloacal fossa
- clitoris from genital tubercle
- labia minora from genital folds
- labia majora from labioscrotal swelling
- vestibule from urogenital sinus.

## ⇒ Internal Genital Organs

- They include :- vagina
- uterus
- Fallopian tubes
- ovaries.

### → Vagina :

- It is fibromuscular-membranous sheath communicating the uterine cavity with exterior at vulva
- It constitutes the excretory channel for menstrual flow.
- It is an organ for copulation & forms the birth canal of parturition.
- It is widest in upper part & narrow at its introitus.
- vagina has got anterior, posterior & 2 lateral walls
- It looks like 'H' shaped on transverse section.
- upper one-third part of vagina is related with base of bladder. & lower 2/3rd are with the urethra (anterior)
- upper 1/3rd is related with pouch of douglas. (posterior)

- Middle third with the anterior rectal wall separated by rectovaginal septum (posterior)
- Lower third is separated from canal by perineal body (posterior)
- Lateral walls:- upper 1/3rd with pelvic tissue
  - Middle third is blended with levator ani
  - Lowe third is related to bulbocaverous muscles, vestibular bulb, Bartholin's glands.

→ Structure of Vagina:

- Mucus coat: Lined by stratified squamous epithelium without any secreating glands.
- Submucous layer: loose areolar vascular tissue
- Muscular tissue: - d indistinct inner circular & outer longitudinal muscles
- fibrous coat derived from endopelvic fascia.

→ Vaginal secreation:

- vaginal pH is acidic due to presence of Doderlein's bacilli which produce lactic acid
- pH = 4-5

→ veins: internal iliac vein & internal pudendal veins

→ Uterus:

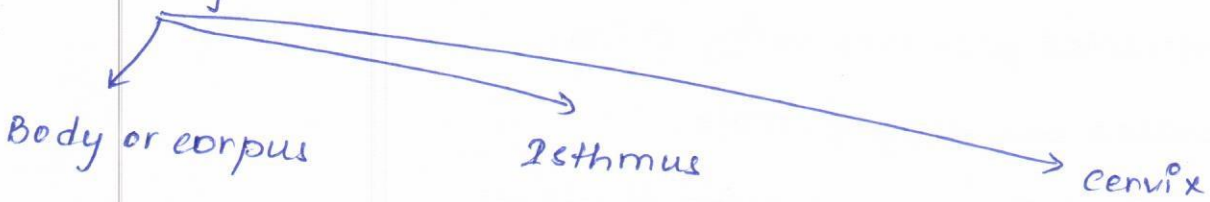
- Hollow pyriform muscular organ situated in pelvis between the bladder in front & rectum behind.

→ position of uterus:

- Anteversion & anteflexion.
- usually inclines to the right (dextrorotation) so that cervix is directed to left (levorotation)

→ Parts of uterus:

- Following:



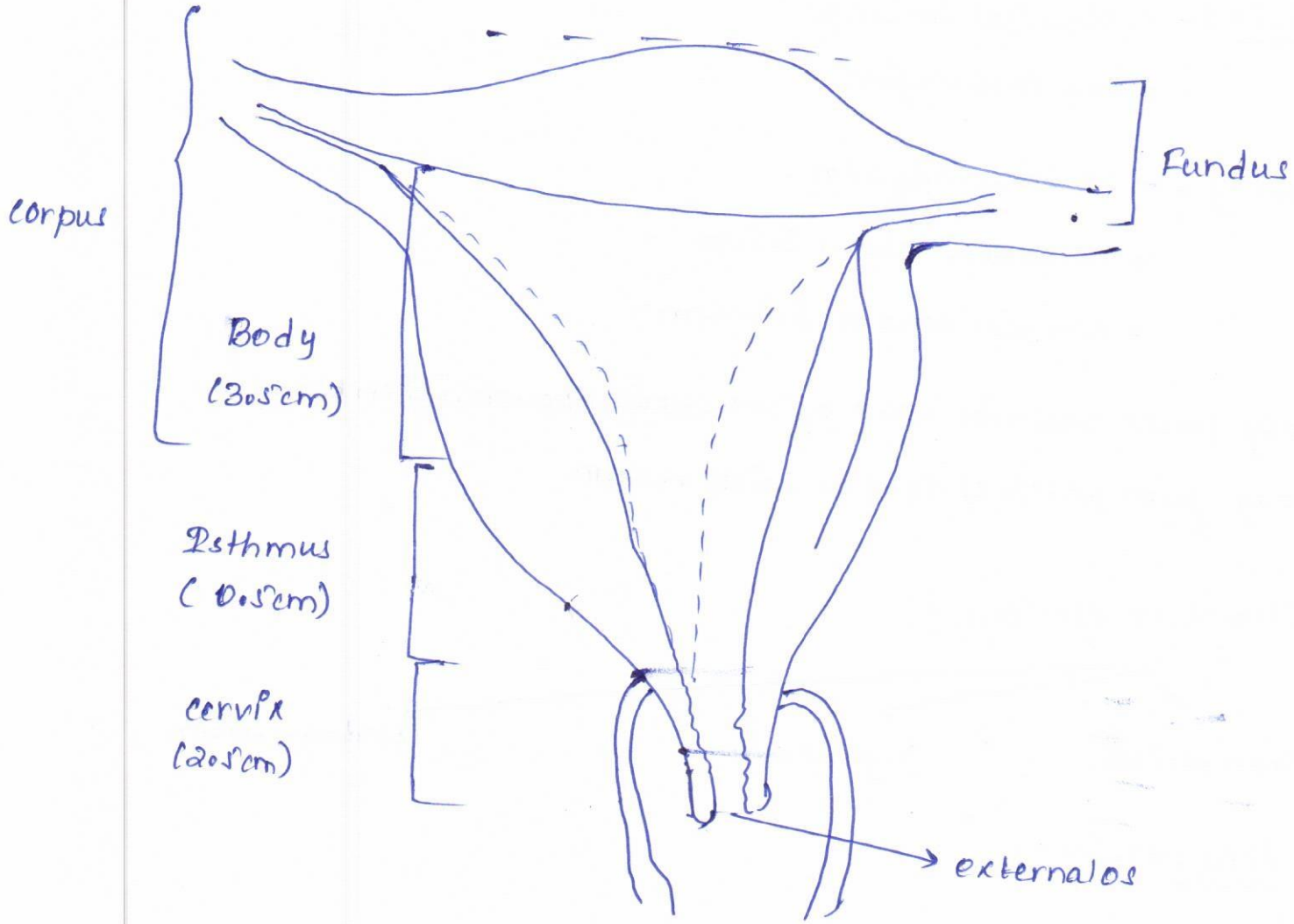




Fig: parts of uterus

a) Body or corpus :

- The body furthur divided into fundus - part lies above opening of uterine tubes.
- superolateral angles of body of uterus project outwards from fundus & body & is called cornua of uterus.
- uterine tube, round ligament & ligament of ovary are attached to it.

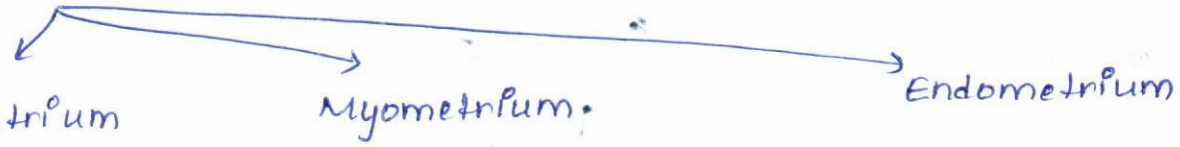
b) Isthmus : - constricted part measuring 0.5cm.
- situated b/w body & cervix
- considered as lower portion of uterus

c) Cervix : - cylindrical in shape
- opens into vagina

- cavity : - It is triangular.
  - measures about 3.5cm
  - Normal length 6.5-7cm

- Body forms posterior wall of uterovesical pouch. with bladder
- Body form pouch of douglas with rectum

→ Structure of uterus :




a) Parametrium :

- It is a serous coat.

b) Myometrium:

- It consists of thick bundles of smooth muscle fibres held by connective tissues

c) Endometrium:

- Mucous lining cavity is called endometrium.
- As there is no submucosal layer, endometrium is directly apposed to muscle coat.
- Endometrium changes to decidua during pregnancy.

→ Cervix:

- composed of fibrous connective tissue
- Squamo-columnar function is situated at the internal Os.

→ Secreation:

- endometrial secreation is scanty & watery
- secretion of cervical glands is alkaline & thick.

## ⇒ Fallopian Tube:

Uterine tubes are paired structures, measuring about 10cm.

Each tube has got 2 opening, one communicating with uterine cavity

Parts:

- Intramural or interstitial - lying in uterine wall
- Isthmus - straight
- Ampulla - tortuous part
- Infundibulum

→ Functions:

- Transport of gametes
- To facilitate fertilization.

→ Development:

- Tube is developed from upper vertical part of corresponding Mullerian duct at 6-10 week.

## ⇒ Ovary :

- They are paired sex glands or gonads in female
- They are concerned for: - germ cell maturation, storage & release
  - steroidogenesis
- ovaries are intro-peritoneal structures.
- ovaries is attached to posterior layer of broad ligament by mesovarium to lateral pelvic wall by infundibulo pelvic ligament. & to uterus by ovarian ligament.

### → Structure of ovary :

- ovary is coverd by a single layer of cuboidal cell known as germinal epithelium.
- parts → Inner Medulla.
  → outer cortex

→ Cortex:

- It consists of stromal cell which are thickened beneath the germinal epithelium to form tunica albuginea.
- Structure includes:- primodial follicles
  - maturing follicles
  - Graafian follicles
  - Corpus luteum

→ Medulla:

- Consists of loose connective tissue
- There are small collection of cells called 'hilus cells' which are homologous to interstitial cells of testes.

→ Development:

- Ovary is developed from cortex of undifferenciated genital ridges by 9th week.

## * Breast:

- They are large, modified sebaceous gland
- It usually extends from 2nd - 6th rib.
- Breast weighs abbut 200-300gm during child bearing age.

→ Structures:

Areola:- placed about the centre of breast & is pigmented
- Montogomery glands around periphery of areola
- They can secrete milk

b) Nipple: - muscular projection covered by pigmented skin
- It accomodates 15-20 lactiferous ducts & their openings.

- whole breast is embedded in subcutaneous fat.
- fat is absent beneath nipple & areola.
- Breast is composed of 12-20 lobes
- Each lobe has one excretory duct that opens at nipple
- Each ~~ear~~ lobe has 10-100 lobules
- Cooper's ligaments are fibrous septa, that extend from skin to the underlying pectoral fascia.

→ Development:
- parenchyma of breasts is developed from ectoderm.
- connective tissue stroma is from mesoderm.