Female Reproductive Organs

Dr. Talib Jawad

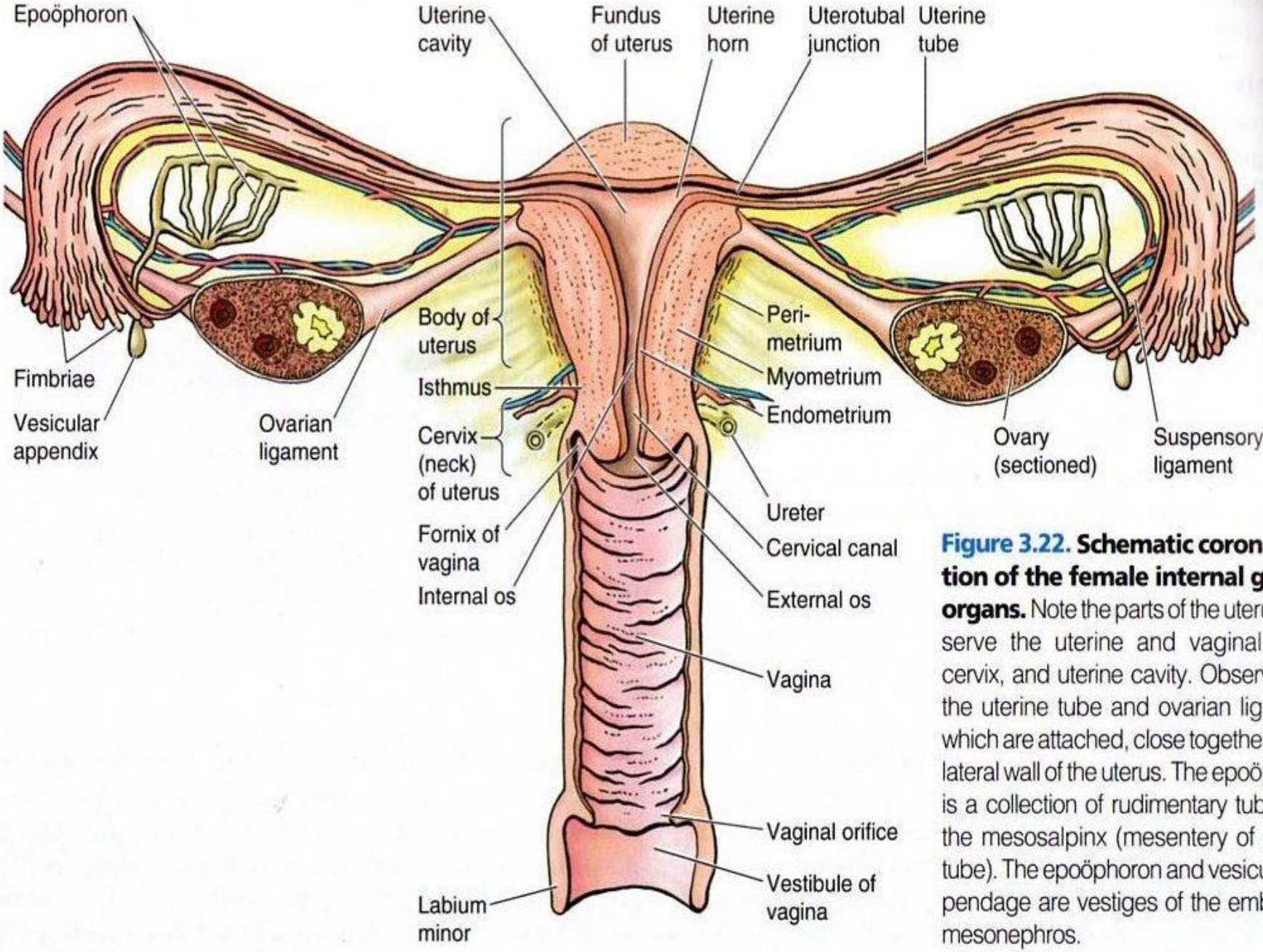
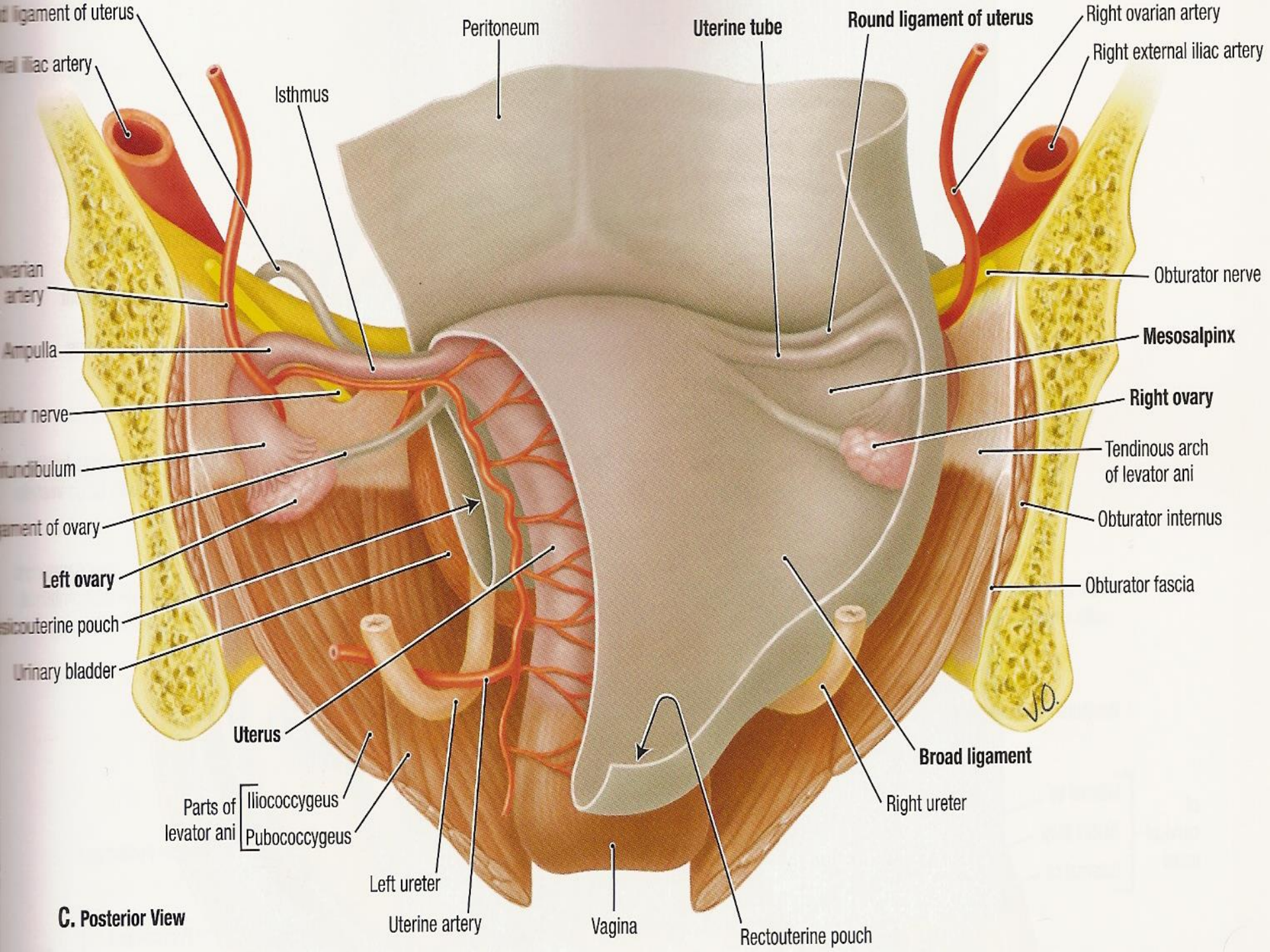


Figure 3.22. Schematic coronal sec tion of the female internal genita organs. Note the parts of the uterus. Ob serve the uterine and vaginal walls cervix, and uterine cavity. Observe als the uterine tube and ovarian ligament which are attached, close together, to th lateral wall of the uterus. The epoöphoron is a collection of rudimentary tubules i the mesosalpinx (mesentery of uterin tube). The epoöphoron and vesicular ap pendage are vestiges of the embryoni mesonephros.

Ovaries

- A pair of female reproductive organs.
- Is almond-shaped اللوزة,3cm long,1.5 cm broad&1cm thick.(1-2-3)
- Each ovary lies in the ovarian fossa on the lateral . pelvic wall.



C. Posterior View

The ovarian fossa bounded:

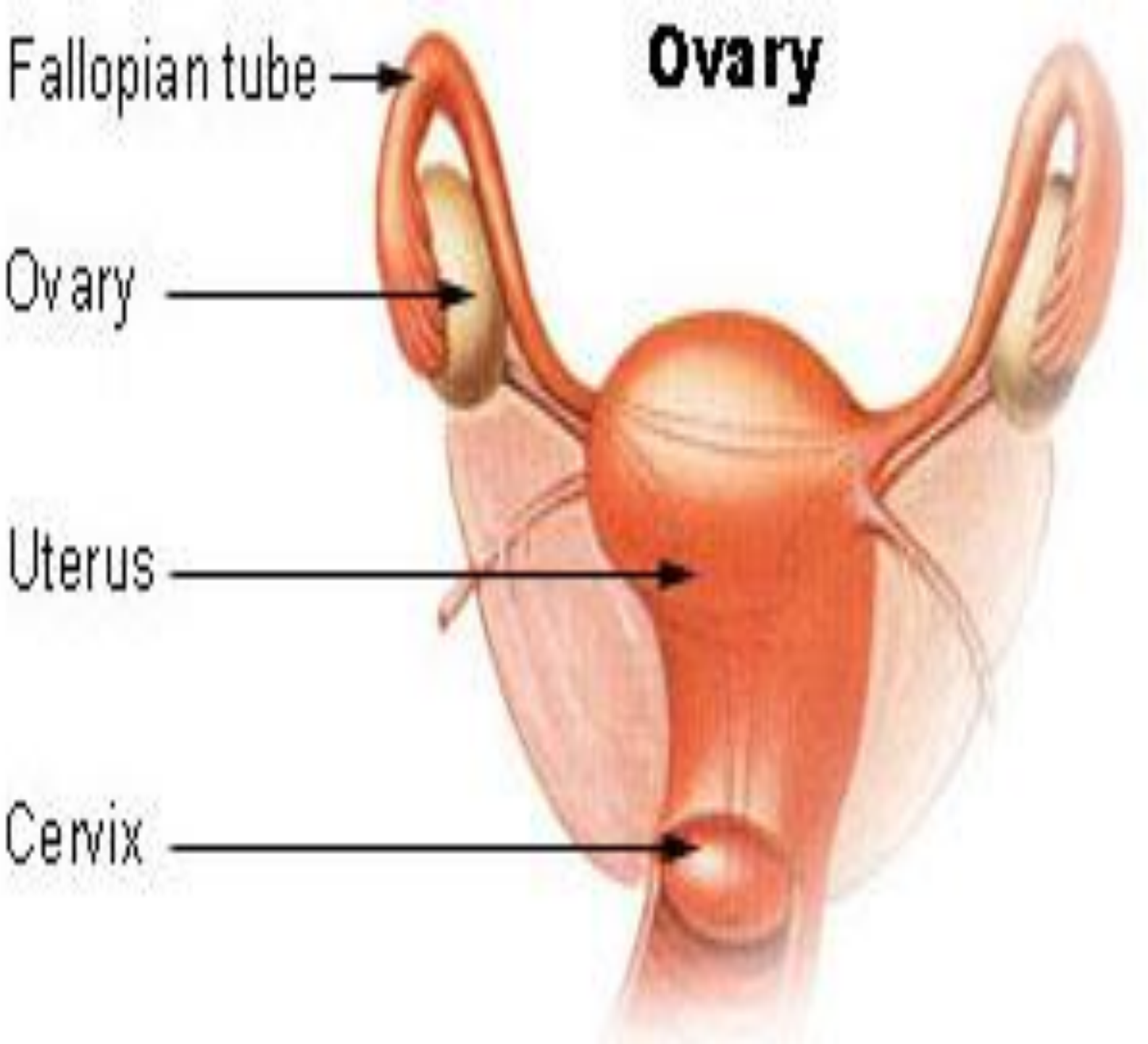
- **(a) Ant obliterated umbilical a.**
- **(b) Post…uerter & int.iliacs a.**
- **The ovary attached to the post or upper layer of the broad lig. of uterus.*&lies below & behind the lateral .(ampullary)part of uterine tube ,on each side of the uterus.**

Position(orientation

- **In nulliparous women ….long axis …vertical,so that the ovary have an upper pole&lower pole.**
- **In multiparous women…..long axis…horizontal, so upper pole points lat. & lower pole med.**

External Features

- **In young girl. before ovulation starts the ov.have smooth surface &pink colour.**
- **After puberty ….ovulation starts, the the surface becomes puckered مجعد…due to scar of successive corpora lutea & color changes to grey .**


Fallopian tube
Ovary
Ovary
Uterus
Cervix

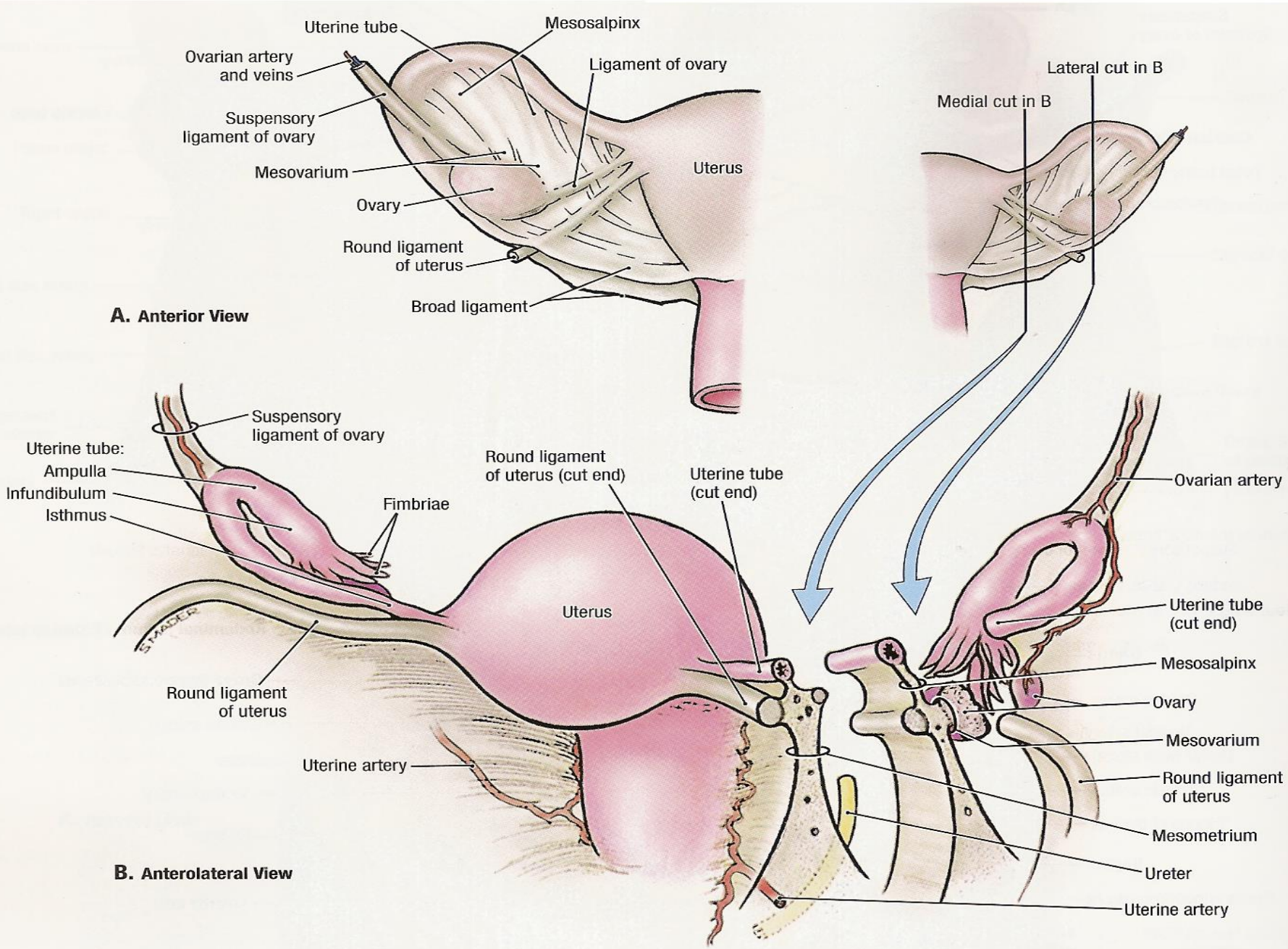
Each ovary has

- (A) Two pole or extremities,upper or tubal pole &lower or uterine pole.
- (B) Two borders, the ant.or mesovarian border & post.or free border (meso- ovarian).
- (C) Two surface.lat.&med.

Relation of ovary

- **A) Peritoneal Relation**
- **Is covered entırely wıth perıtoneum except along the mesovariam(ant.)border where the two layers of covering pert. reflected on to the post. layer of broad ligament.**

- The mesovarium .transmits . the .v,& n.to & from the ovary.
- Suspensory ligament of ovary (lateral part,of broad ligament extend to the infundibulum of the tube & to the upper pole of ovary ….ext. iliac.v.
- it contain ov.v.&n.


Uterine tube
Mesosalpinx
Ovarian artery and veins
Ligament of ovary
Suspensory ligament of ovary
Mesovarium
Uterus
Ovary
Round ligament of uterus
Broad ligament
A. Anterior View
Lateral cut in B
Medial cut in B
Suspensory ligament of ovary
Uterine tube:
Ampulla
Infundibulum
Isthmus
Fimbriae
Round ligament of uterus (cut end)
Uterine tube (cut end)
Ovarian artery
Uterus
Uterine tube (cut end)
Mesosalpinx
Ovary
Mesovarium
Round ligament of uterus
Round ligament of uterus
Uterine artery
Mesometrium
Ureter
Uterine artery
B. Anterolateral View

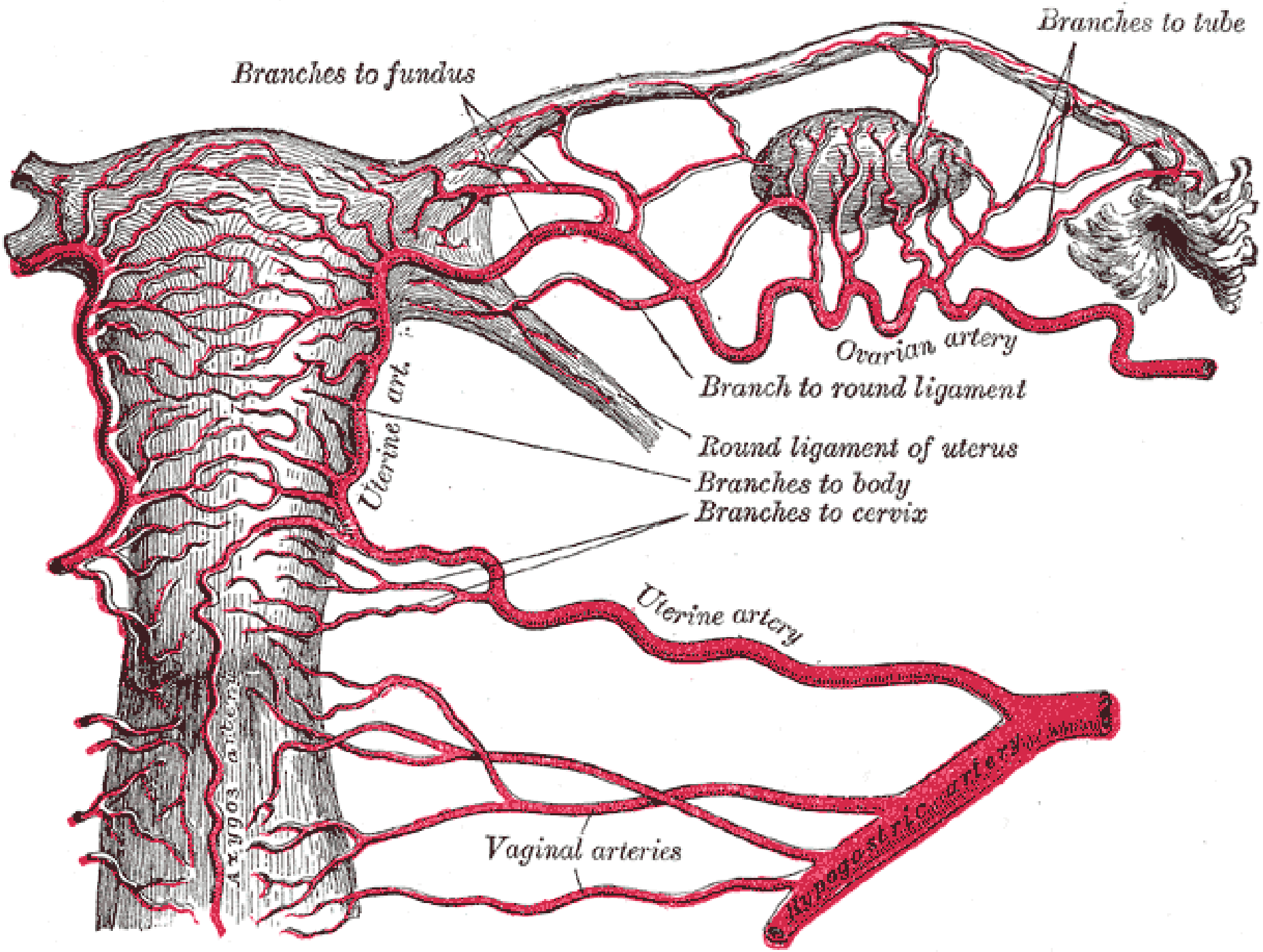
B.Visceral Relation

- (1)upper or tubal pole:is broader than lower pole …is related to ut.tube &ext.iliac .v.(the sup.lig.of ovary.& ov.fimbri. attached to it.)
- (2) lower or ut. Pole:is narrower …related to pelvic floor.it cnnnected by round lig. of.ovary to the lat.angle of uterus.;post.inf.to.the.ut.tube.

- (3) ant.or mesovariam border:is straight ….is related to uterine tube &obliterated umb. A.
- (4) post. Or free border .it convex &is related to the uterine tube &uerter.
- (5) lat.surface .it is related to ovarian fossa which is lined by parietal pert.
- (6) medial surface .it is largely covered by the ut.tube.

Arterial supply

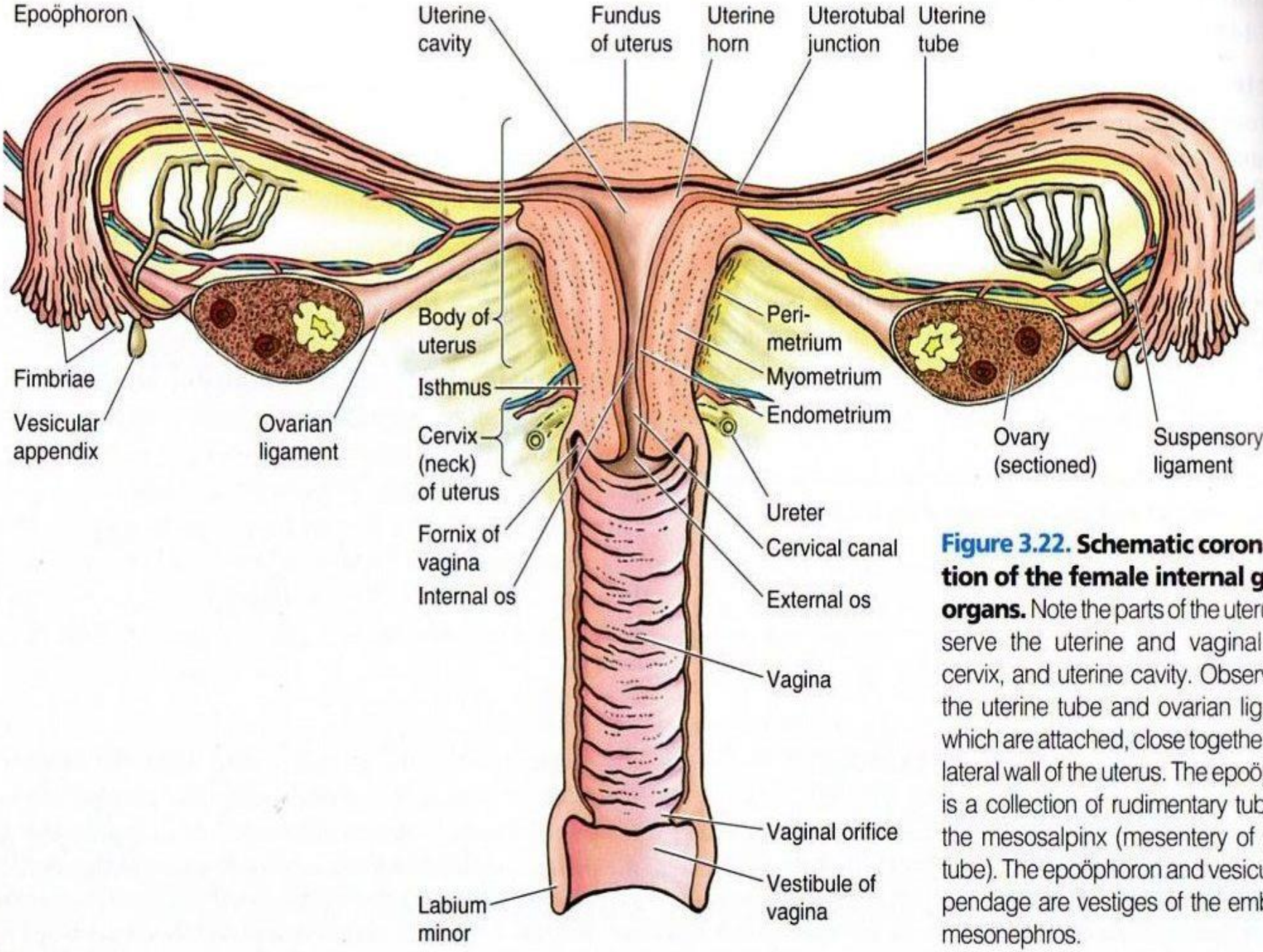
- (1) : ovarian a…..from abdominal aorta ..level 1st v. It descends over the post.abdominal wall.&enters the suspensory lig.of ovary.it sends branches …mesovarium.& con.med ….broad lig.of uterus….. Anastomose ….ut.a.
- (2)uterine a. reach the ovary through the mesovarium.


Branches to tube
Branches to fundus
Ovarian artery
Branch to round ligament
Round ligament of uterus
Uterine art.
Branches to body
Branches to cervix
Uterine artery
Vaginal arteries

- Venous drainage: the ovarian vein .drains into the inf.vena cava on the R side & L.side into L.renal v .
- Lymphatic drainage : the Lymphatics comm. with lymph. from uterine . tube & fundus of the uterus .&follow the ovarian a. & drain into para-aortic nodes at level if 1st. V.

Nerve supply

- The ovarian plexus ,derived from the renal,aortic &hypogastric plexus ,acomp. ovarian v. containe both symp.& parasymp
- Symp:(T10,11) are afferent for(pain)as well as efferent(vasomotor)
- Parasymp.(S2,3.4)are vasodilator.



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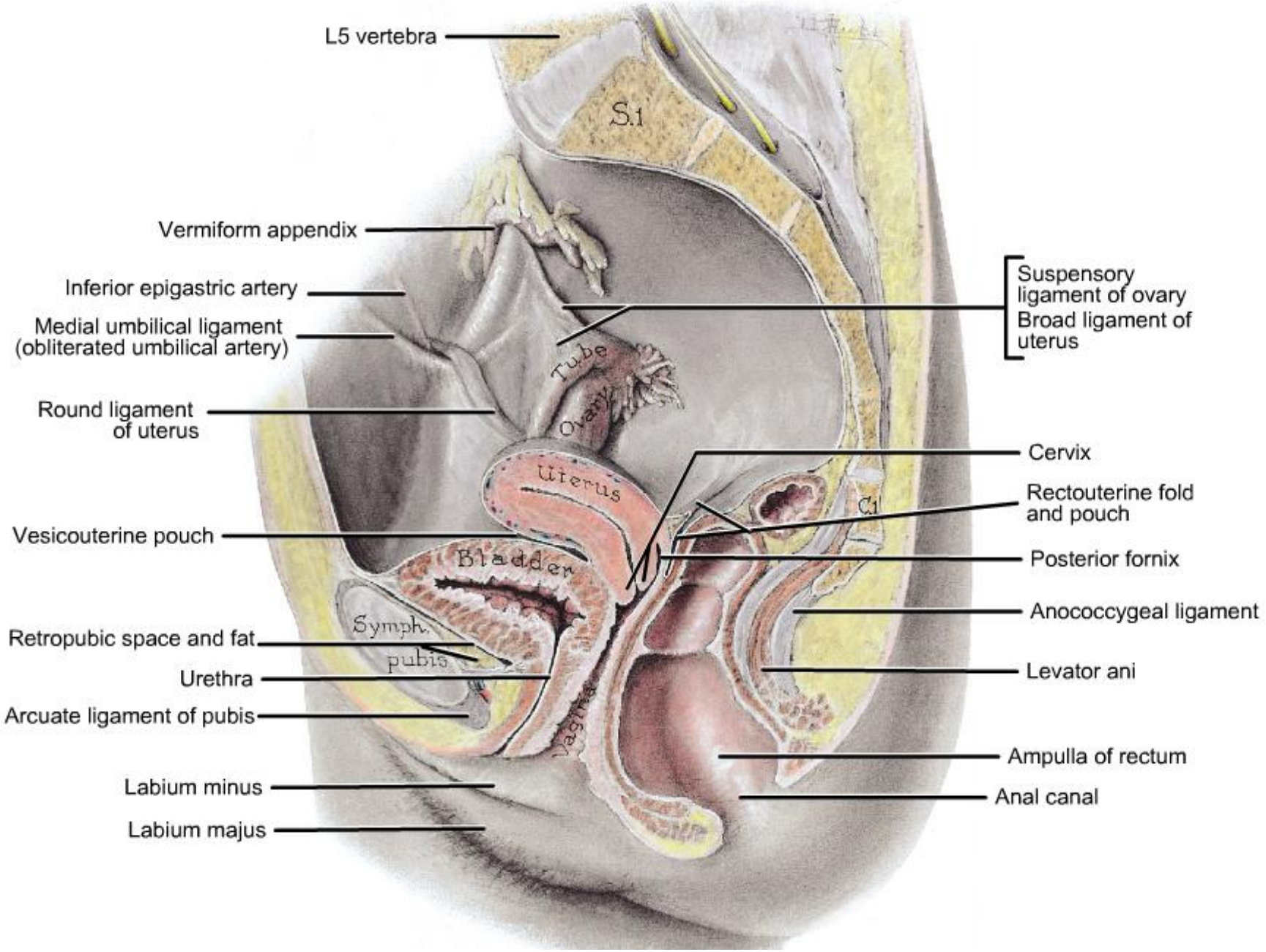

L5 vertebra
S.1
Vermiform appendix
Inferior epigastric artery
Medial umbilical ligament
(obliterated umbilical artery)
Round ligament
of uterus
Vesicouterine pouch
Retropubic space and fat
Urethra
Arcuate ligament of pubis
Labium minus
Labium majus
Tube
Ovary
Uterus
Bladder
Symph.
pubis
Vagina
Suspensory
ligament of ovary
Broad ligament of
uterus
Cervix
Rectouterine fold
and pouch
Posterior fornix
Anococcygeal ligament
Levator ani
Ampulla of rectum
Anal canal

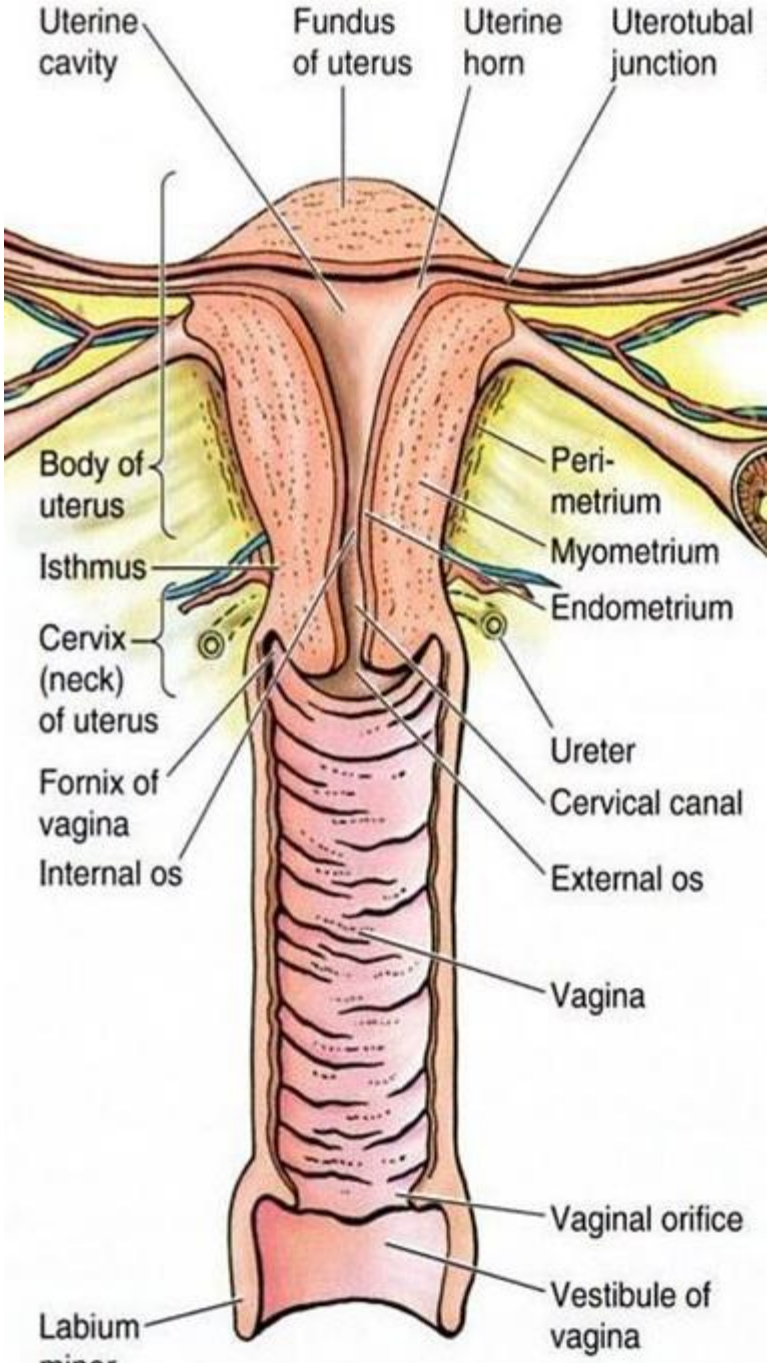
The oviduct, uterus, and vagina are part of the female reproductive system and are specialized organs that serve to transport oocytes to the site of fertilization and implantation, to support fetal growth and nourishment, and to connect the growing fetus to the external environment (outside of the body) at the time of birth. The oviduct, uterus, and vagina are responsive to and produce steroid and protein hormones that may act locally or impact organs at distant sites.

Positions of uterus

The uterus has a normal 130^{o} with the cervix, while the cervix has right angles at the junction with the vagina. These postions are called anteflexion and anteversion respectively

Uterus

Is a hollow, thick-walled, muscular organ situated deeply in the pelvic cavity between the bladder and rectum. Into its upper part the uterine tubes open, one on either side, while below, its cavity communicates with that of the vagina

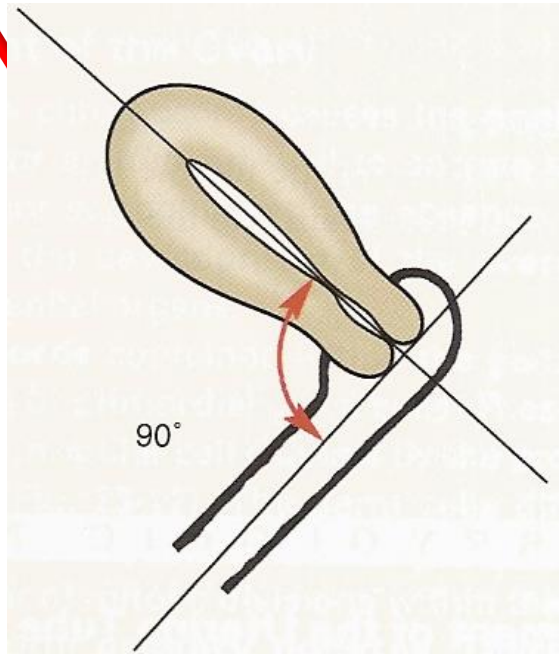


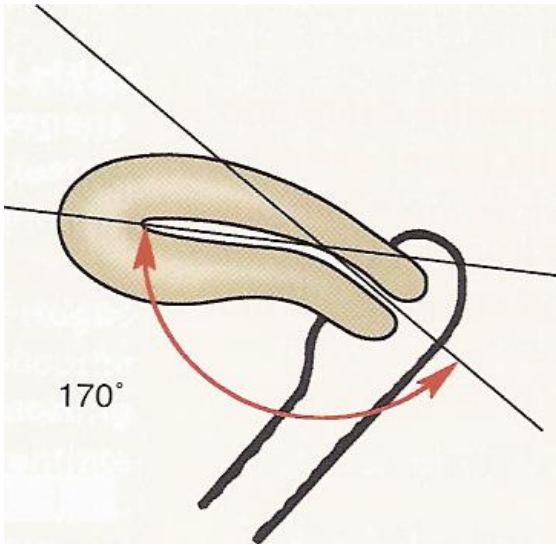
The uterus is flattened anterio-posteriorly and is pyriform in shape (إجاصي او كمثري الشكل), with the apex directed downward and backward

* The uterus measures about 7.5 cm. in length, 5 cm. in breadth, at its upper part, and nearly 2.5 cm. in thickness; it weighs from 30 to 40 gm.

NORMAL POSITION AND ANGULATION

- Normally the uterus is anteverted and ante flexed.
- Forward angulations between the cervix and vagina called of ante version (about 90 degrees)
- Slight forward angulations between the body and cervix is called angle of ante flexion (170 degrees)

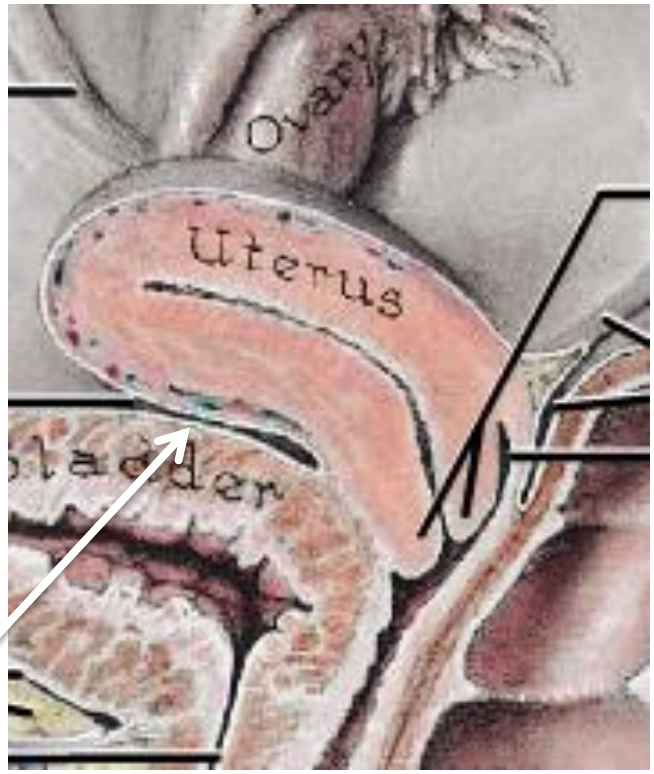


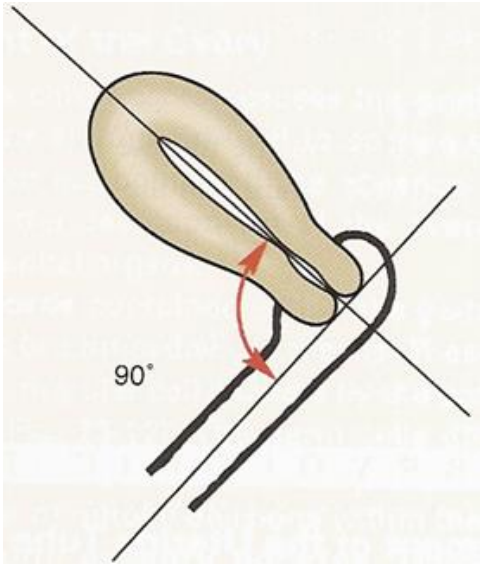


Gross Features

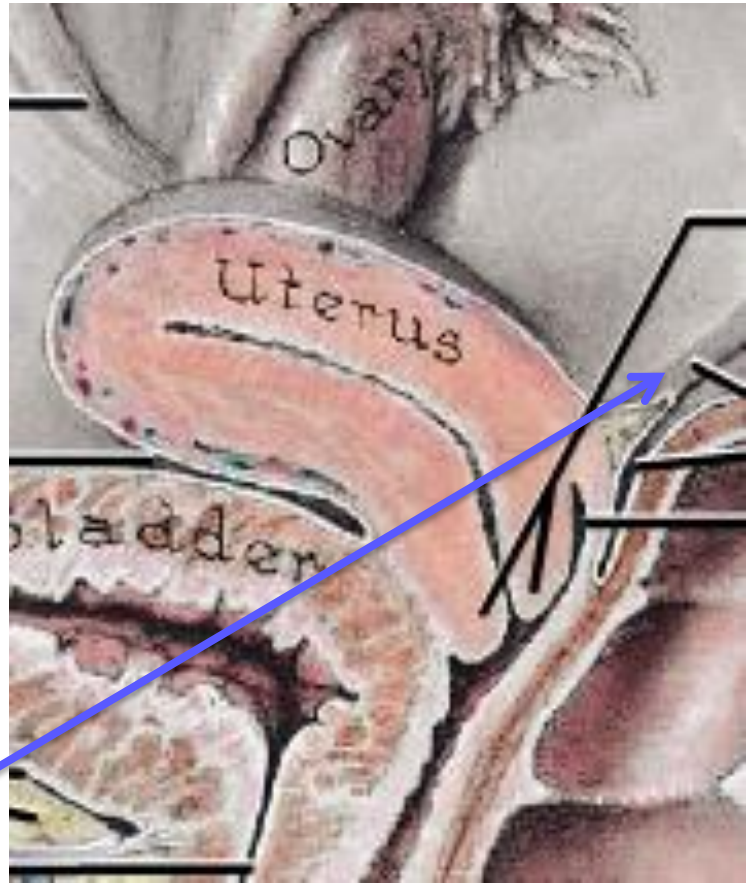
- The uterus is divided into :
- A- Body of uterus (upper 2/3) has:
- (a) Fundus
- (b) 2 Surfaces, anterior or vesical and post. or intestinal.
- (c) 2 Lat borders.
- B- Cervix of uterus (lower 1/3) .

- FUNDUS : convex like a dome قبة.it covered with peritoneum and is directed forwards when the bladder is empty.
- ANT.SURFACE : is flat and related to urinary bladder. It is covered with peritoneum and forms the post. (super.) wall of the **vesico-utrine pouch**.

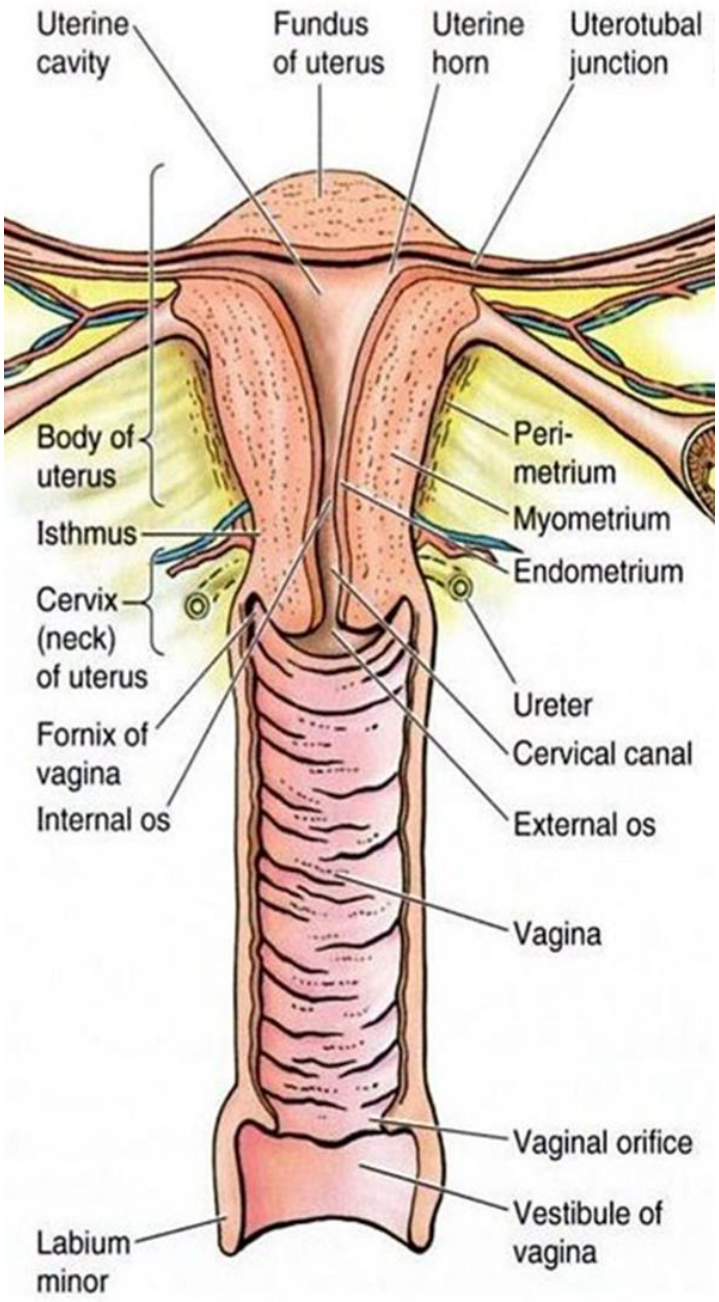


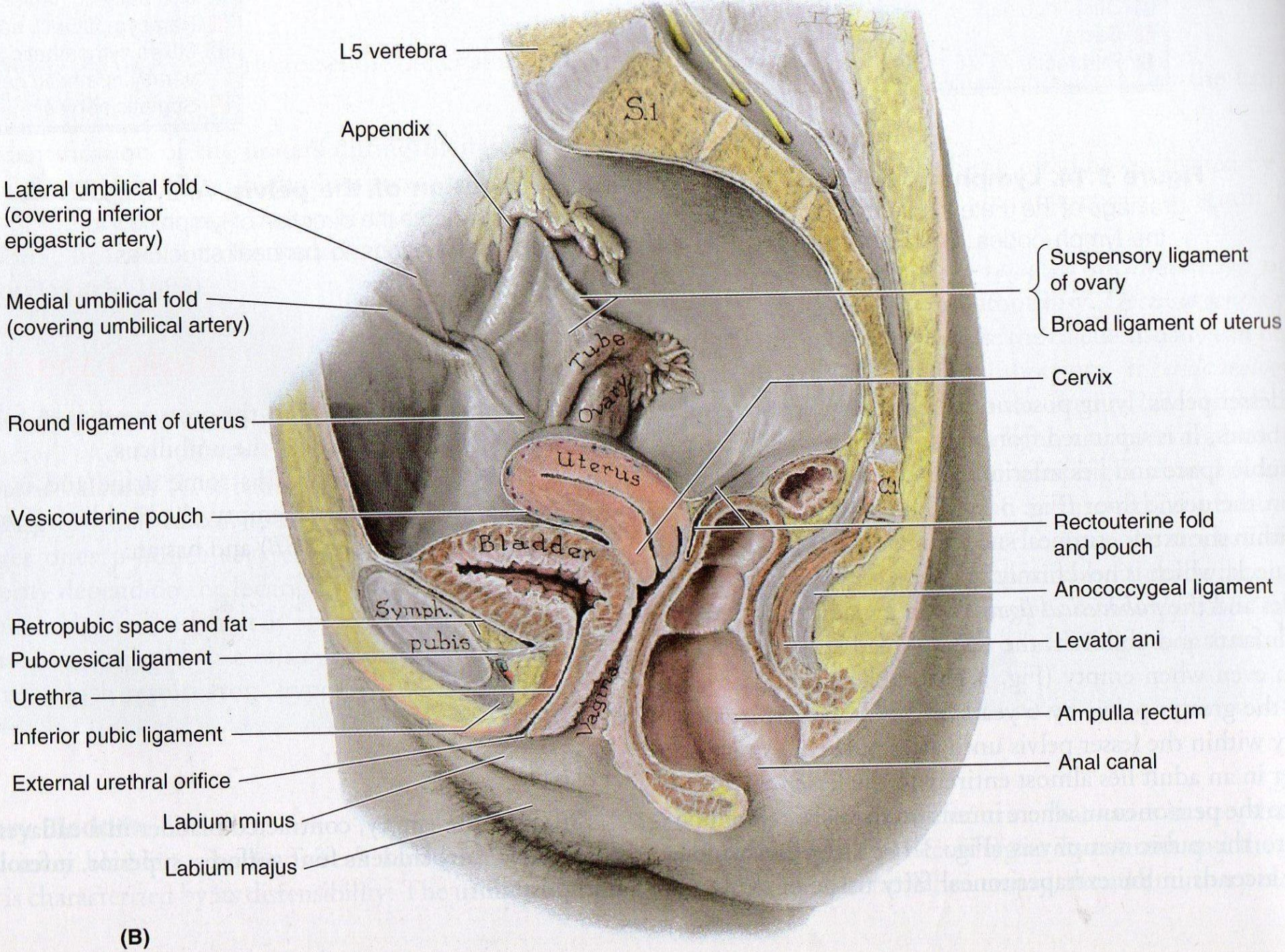


- POST. SURFACE : is convex and related to terminal coils and sigmoid colon. It is covered with peritoneum and forms the ant.wall of the **recto uterine pouch (douglas pouch).**

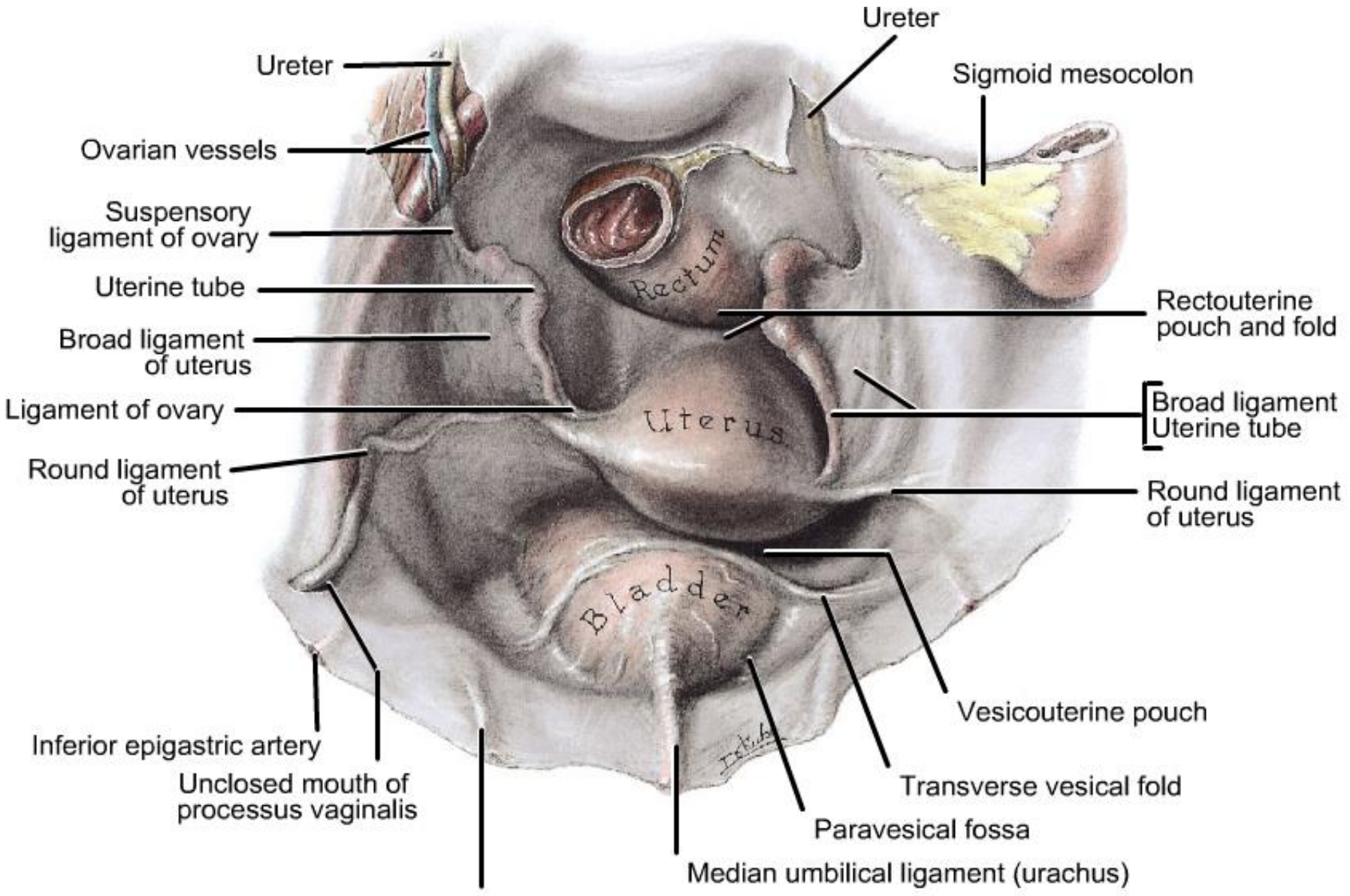


- **LAT .BORDER : is rounded and convex ,it provides attachment to the broad lig. Of uterus. Which extends to the lateral pelvic wall . uterine artery ascends along the lateral border of uterus between the two layers of the broad lig.**

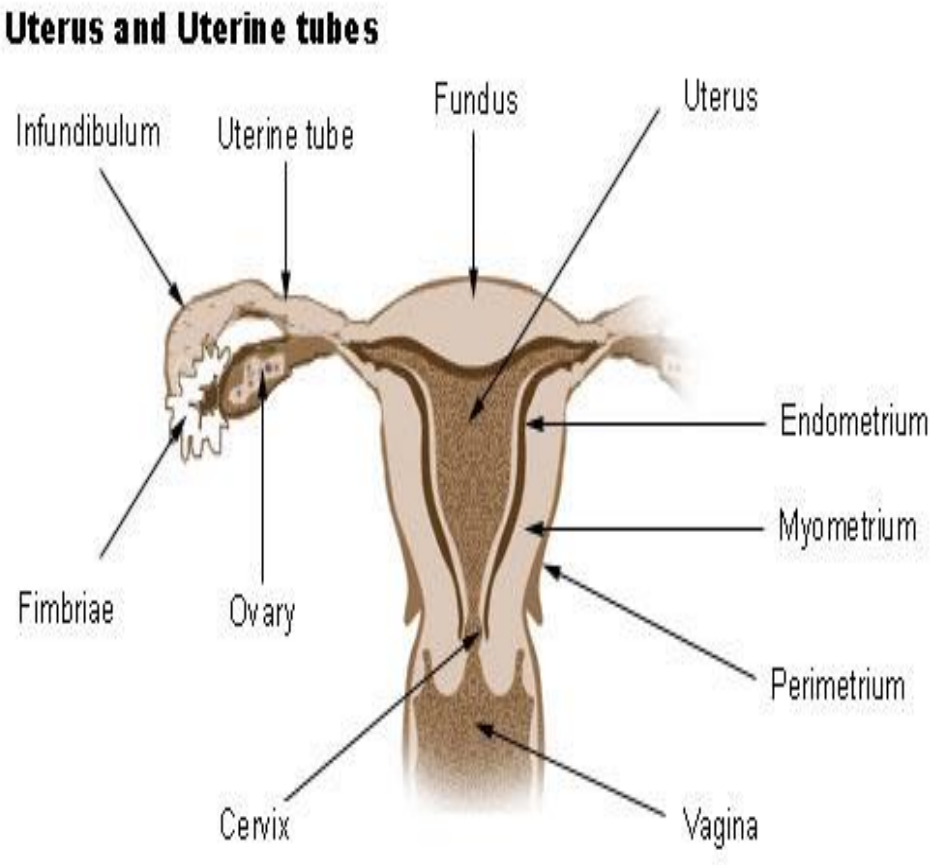


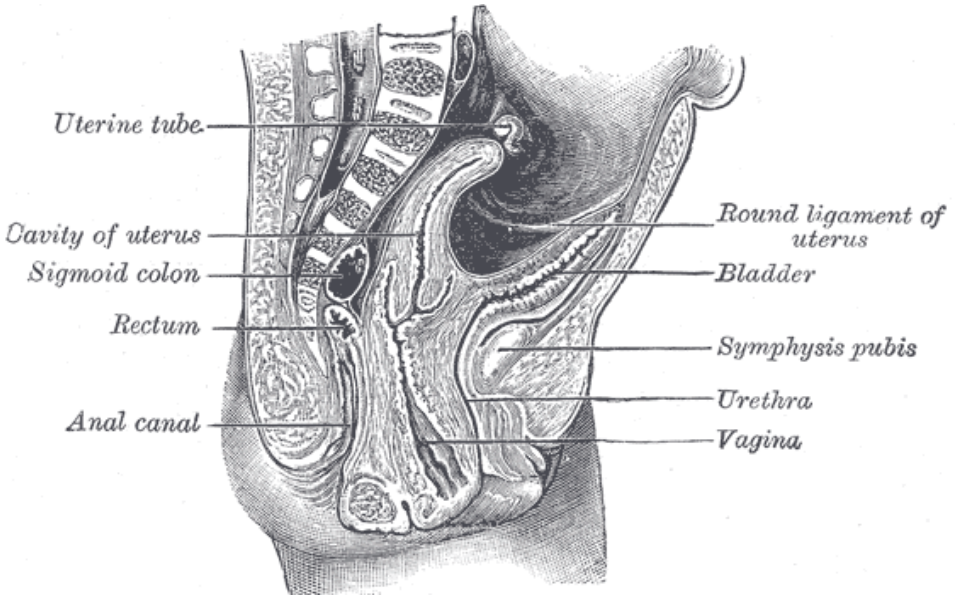

L5 vertebra
S1
Appendix
Lateral umbilical fold (covering inferior epigastric artery)
Medial umbilical fold (covering umbilical artery)
Round ligament of uterus
Vesicouterine pouch
Retropubic space and fat
Pubovesical ligament
Urethra
Inferior pubic ligament
External urethral orifice
Labium minus
Labium majus
Tube
Ovary
Uterus
Bladder
Symph. pubis
Vagina
Cl
Suspensory ligament of ovary
Broad ligament of uterus
Cervix
Rectouterine fold and pouch
Anococcygeal ligament
Levator ani
Ampulla rectum
Anal canal

(B)


Ureter
Ureter
Sigmoid mesocolon
Ovarian vessels
Suspensory ligament of ovary
Rectum
Uterine tube
Rectouterine pouch and fold
Broad ligament of uterus
Broad ligament
Uterine tube
Ligament of ovary
Uterus
Round ligament of uterus
Round ligament of uterus
Bladder
Vesicouterine pouch
Inferior epigastric artery
Unclosed mouth of processus vaginalis
Transverse vesical fold
Paravesical fossa
Median umbilical ligament (urachus)

- THE CAVITY OF THE BODY OF UTERUS: is a mere slit in sagital section because uterus is compressed anteroposterioly
- Coronal section is ▲ shape ,with internal os at the inferior angle and uterine openings at the superolateral angle .





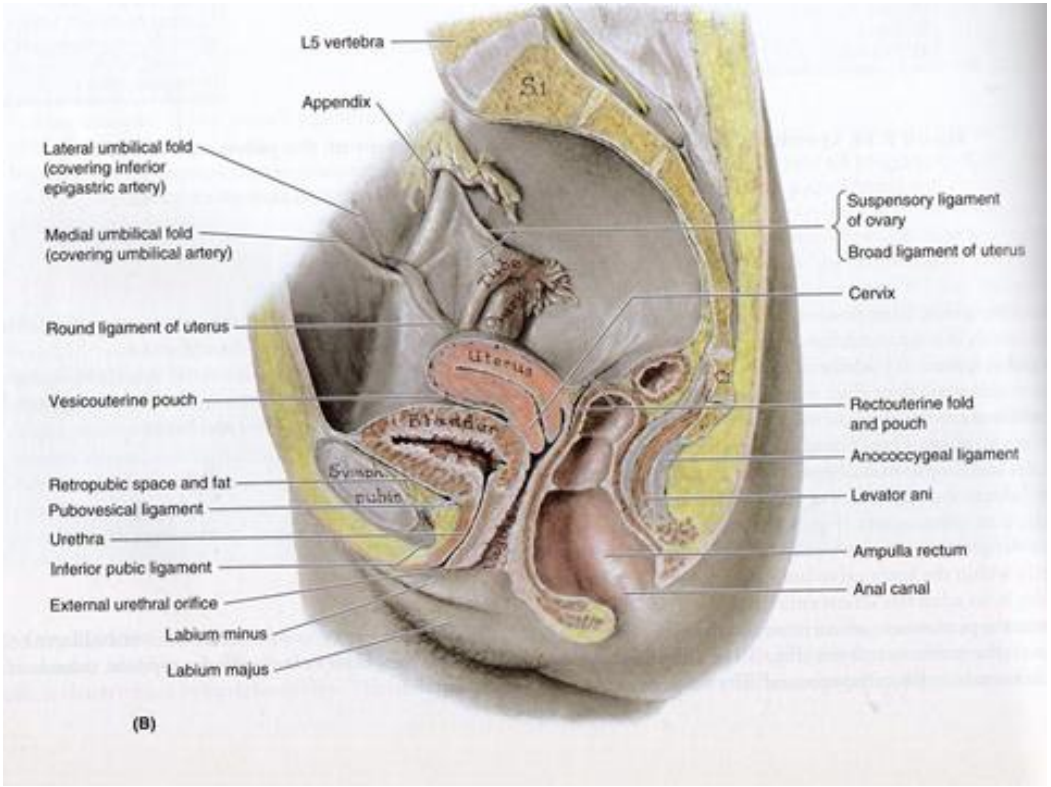
cervix of uterus

- Is the lower cylindrical part of the uterus which is less mobile than the body.
- A bout 2.5cm long ,and is slightly wider in the middle than at either end .
- The lower part of cervix projects into the anterior wall of the vagina .which divides it into .

A- superavaginal part of cervix : is related

- a)anteriorly to bladder.
- b)posteriorly to rectoutrine pouch with intestinal coils and rectum.
- c) on the each site to ureter and uterine artery embedded in parametrium.

B- Vaginal part of cervix : projects into the ant. Wall of vagina forming the vaginal fornices.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Broad ligament of uterus
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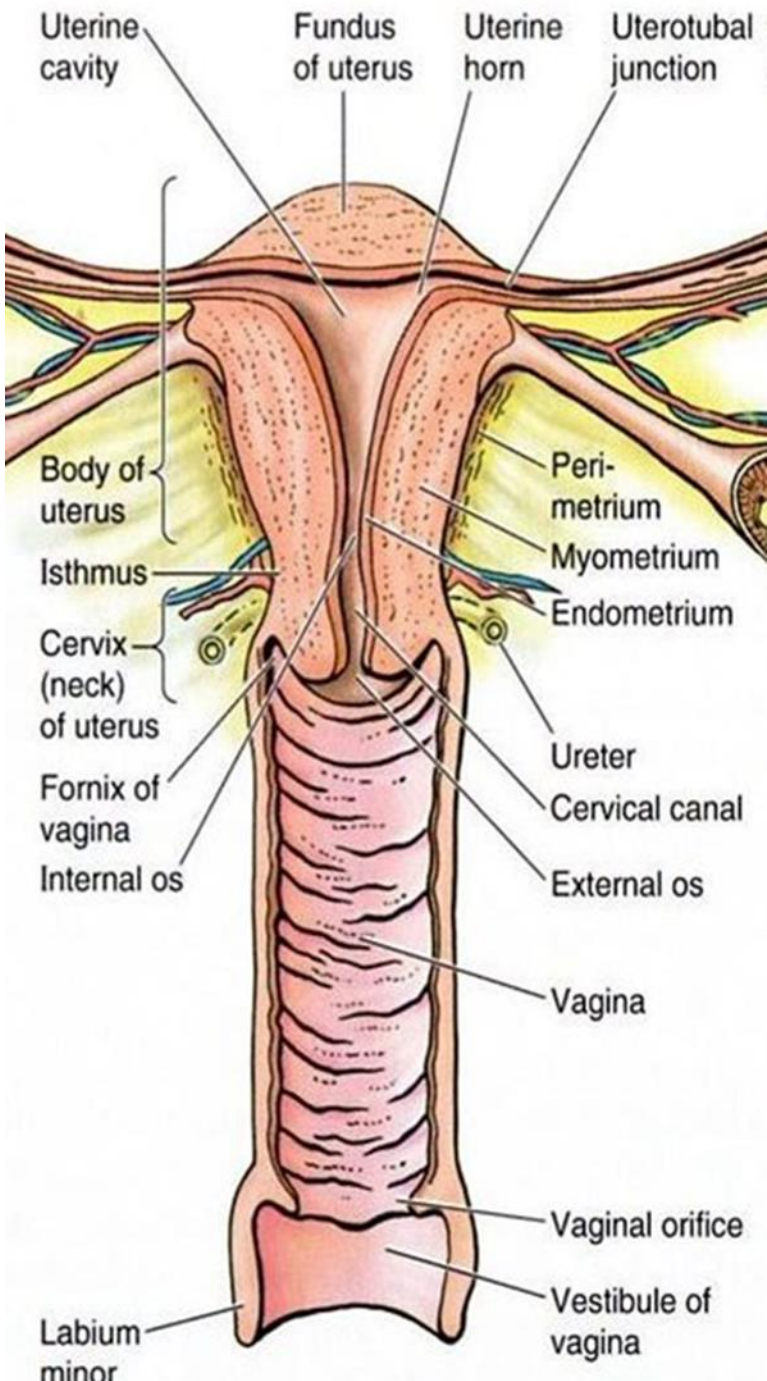
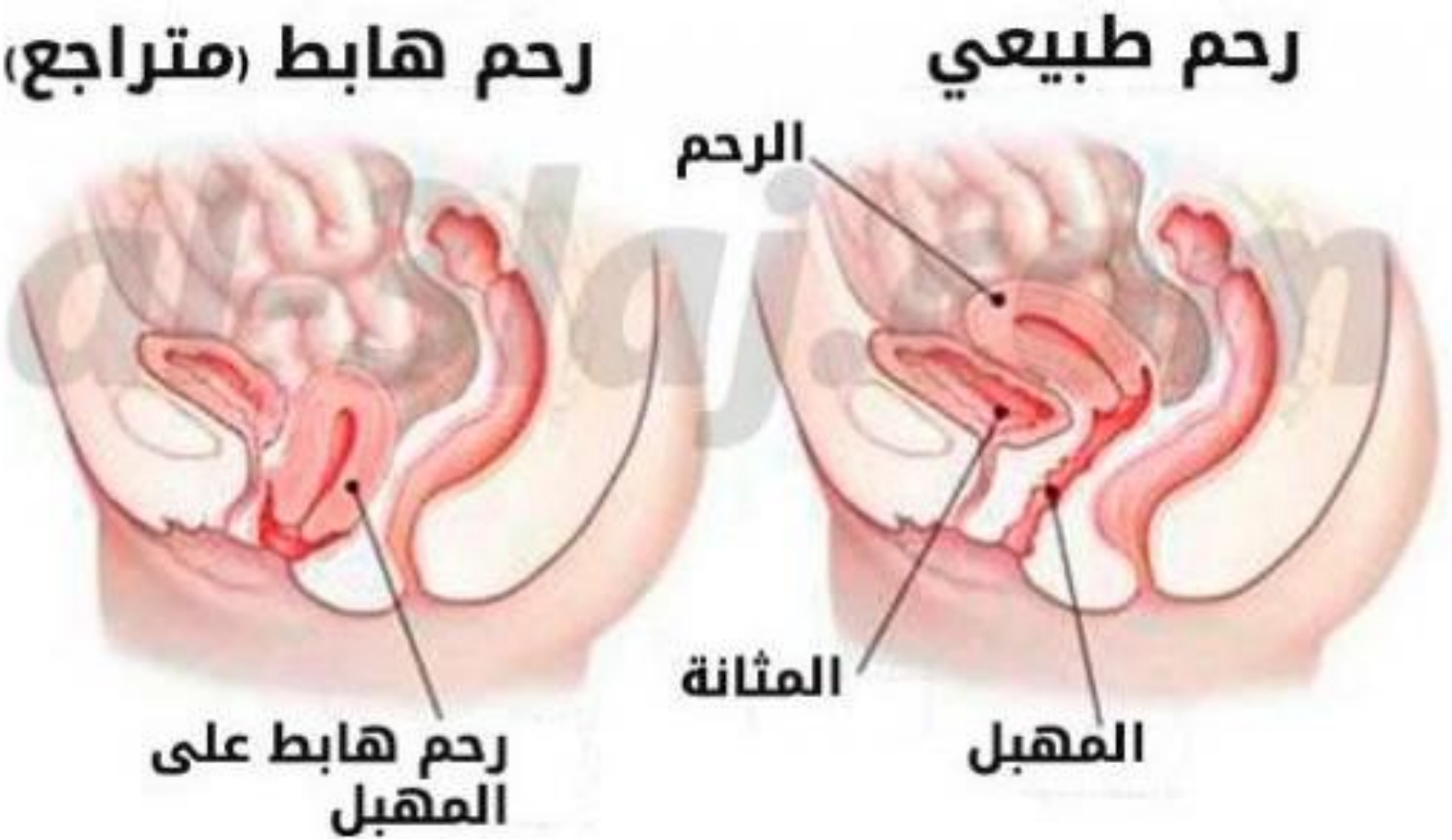
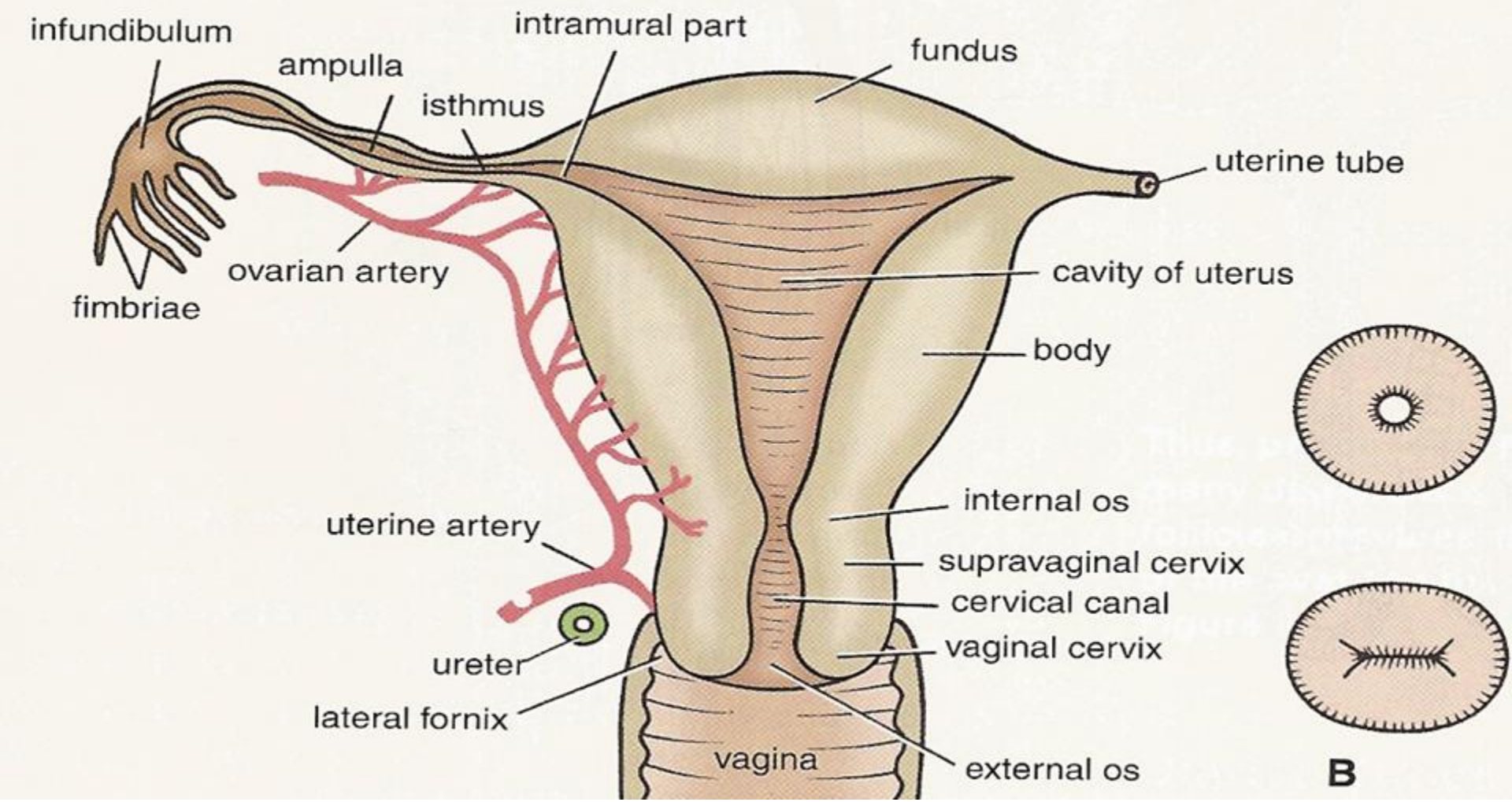
Rectouterine fold and pouch
Anococcygeal ligament
Levator ani
Ampulla rectum
Anal canal
S1
Uterus
Bladder
(B)


Uterine cavity
Fundus of uterus
Uterine horn
Uterotubal junction
Body of uterus
Isthmus
Cervix (neck) of uterus
Fornix of vagina
Internal os
Peri-metrium
Myometrium
Endometrium
Ureter
Cervical canal
External os
Vagina
Vaginal orifice
Vestibule of vagina
Labium minor


رحم طبيعي
رحم هابط (متراجع)
الرحم
المثانة
المهبل
رحم هابط على
المهبل

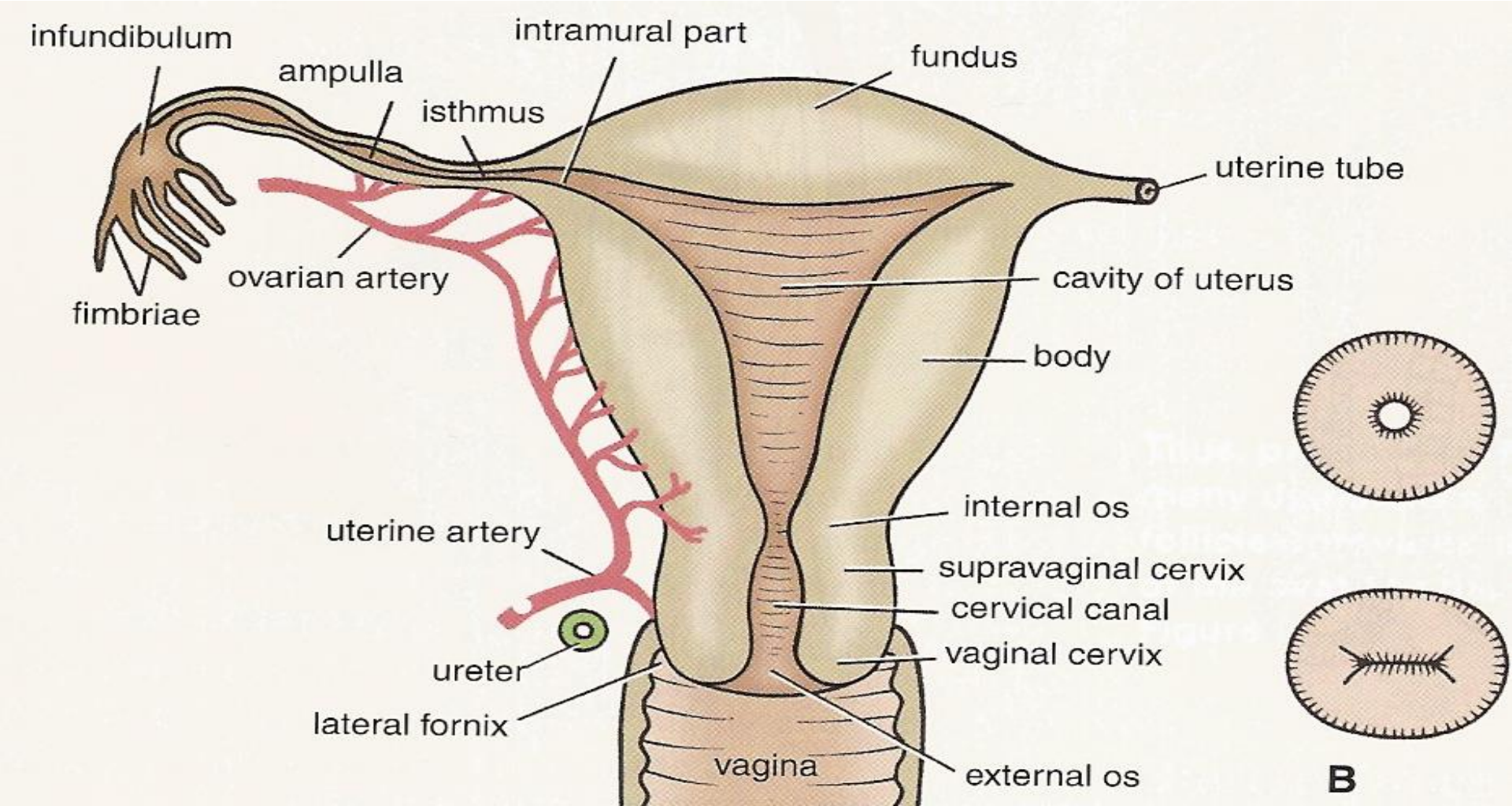
Cervical cannal

- is fusiform in shape ,being flattened from before back wards
- It communicates above with uterine cavity through the internal os and below with vaginal cavity through the external os.
- The mucosal folds in the ant. And post. Walls of cannal resemble the branches of a tree (arbor vita uteri). اغصان متشابكة



- The body is demarcated from the cervix by the ISTHMUS of the uterus ,a relatively constricted segment ,1cm long.

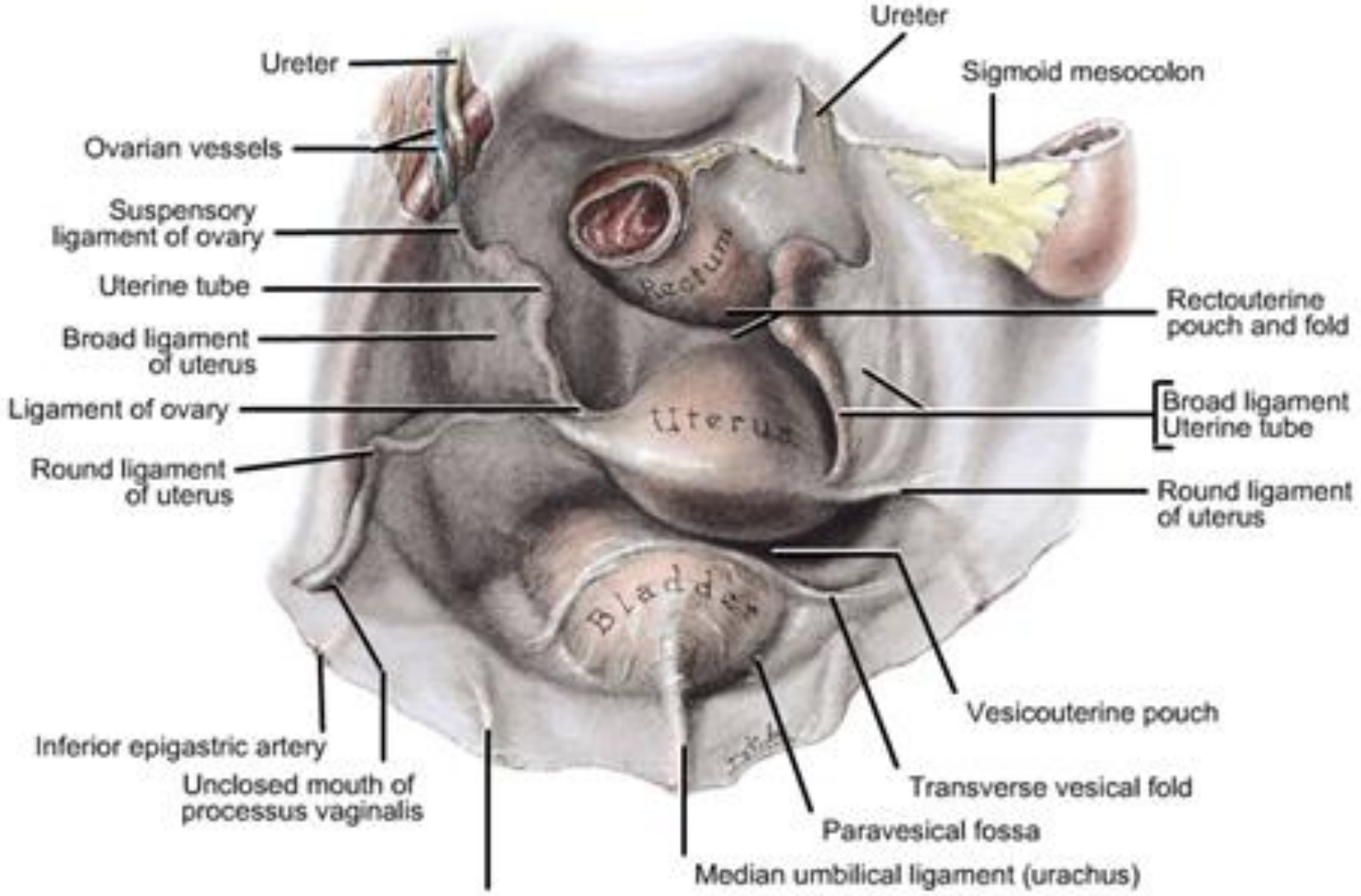
- In nulliparous women the external os is small and circular ,while in multiparous the external os is bounded by the ant. and post. Lips, both os are in contact with post. Wall of vagina.



- The wall of the body of uterus: consists of three coats or layers
- A- Perimetrium: outer serous coat consists of preiton. Supported by thin layer of con. T.
- B- Myometrium: the middle coat of smooth m. becomes greatly distended during pregnancy. the main branches of the b.v.&n. are located in this coat.
- C- Endometrium: inner mucous coat.is actively involved in the ministerial cycle .
- The myometrium thickness in the cervix is markedly less than the body of uterus so it composed mainly of collagen & small amount of smooth m. & elastin.

Ligament of uterus

- ***A- Peritonal lig`s:***
- These are mere peritonal folds which donot provide any support to the uterus.
- (1) Ant. Lig: Consist of uterovesical fold of peritonum.
- (2) Post.Lig: Consist of rectovaginal fold of peritonum.
- (3) Two broad Lig.


Ureter
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Ovarian vessels
Suspensory ligament of ovary
Uterine tube
Broad ligament of uterus
Ligament of ovary
Round ligament of uterus
Rectum
Uterus
Bladder
Rectouterine pouch and fold
Broad ligament
Uterine tube
Round ligament of uterus
Vesicouterine pouch
Transverse vesical fold
Paravesical fossa
Median umbilical ligament (urachus)
Inferior epigastric artery
Unclosed mouth of processus vaginalis

Broad Ligaments

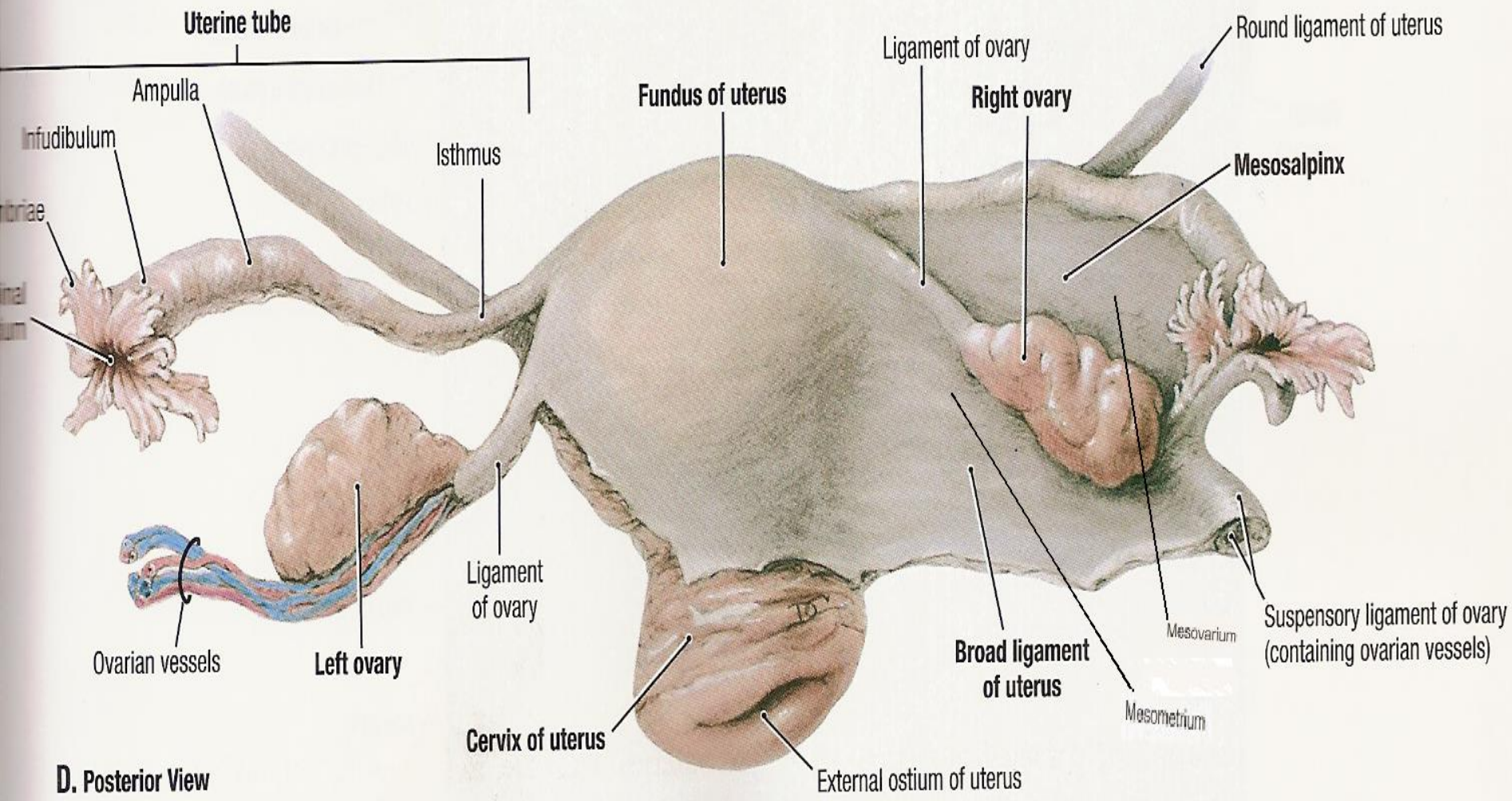
- Are two broad folds of peritoneum which suspend the uterus to the lat.pelvic wall.
- When the bladder full ,lig. Has ant. and post. surfaces and free upper border ,the other 3 borders (inf.,medial,and lat.)are attached to pelvic floor, uterus and lat. Pelvic wall.

- Divided into:
- (a)mesosalpinx.
- (b)mesometrium.
- (c)infundibulo pelvic lig.
- (d)mesovarium.
- Broad lig. Contain the following :
- 1.ut.tube.
- 2.two lig,(a).round lig.of uterus.(b)lig.of ovary.
- 3.two v.(a)utrine v.(b)ovarian v.
- 4.two n.(a)uterovaginal plexus.(b)ovarian plexus.

- 5.Two miscellaneous stru تراكيب مختلفة ;(a)lymphatics and lymph nodes.(b) fibroareoelar tissue or parametrium.
- 6.two embryological remnants .(a)epoophoron and the duct of epoophoron(Gartners).(b)paroophoron.
- ((A collection of rudimentary tubules in the mesosalpinx between the ovary and the uterine tube;))
- ***(B) fibromuscular lig :***
- (a) round lig. of uterus.
- (b) transverse cervical lig`s
- (c) uterosacral lig`s

Round lig. Of uterus

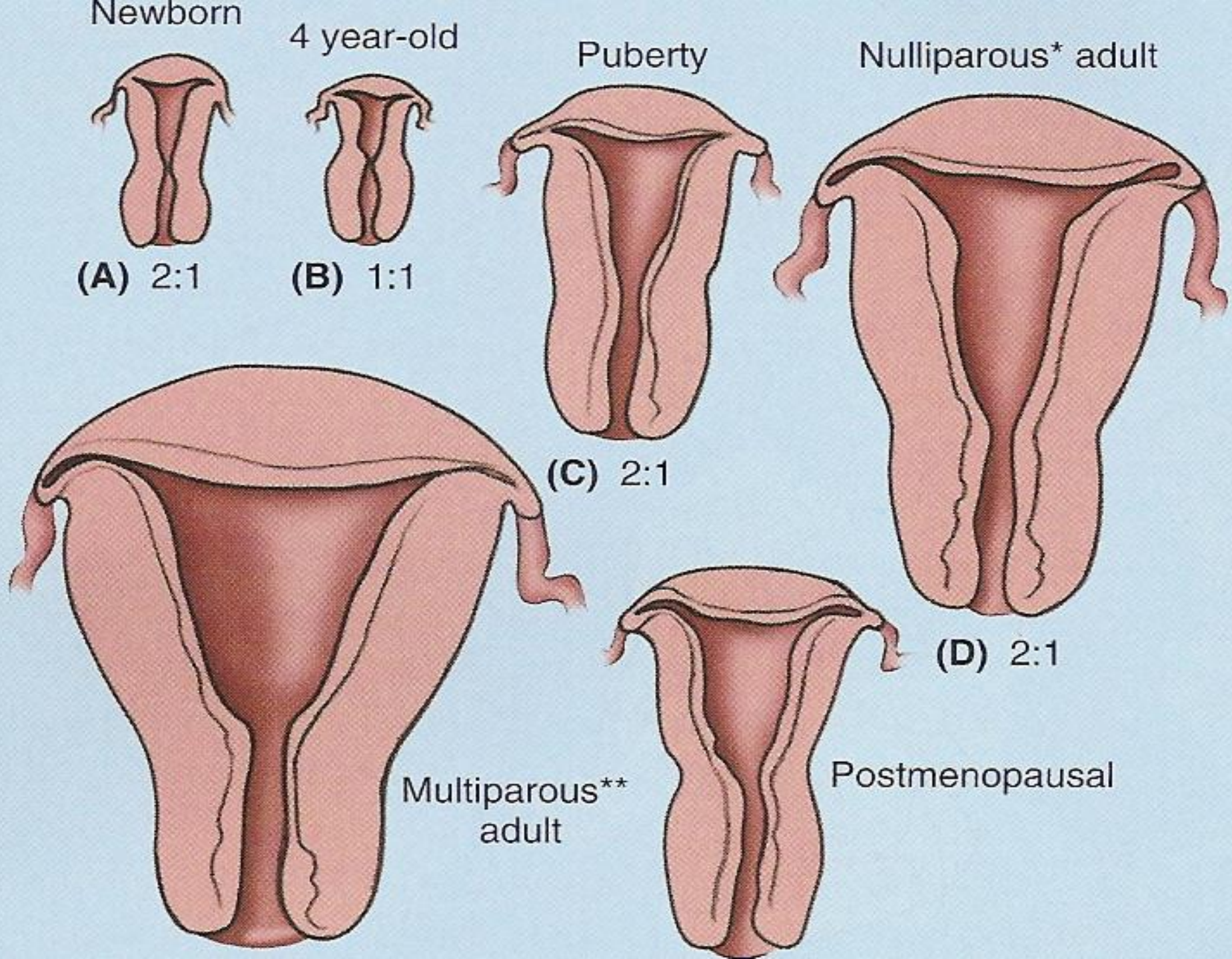
- Are two flattened bands between 10 and 12 cm, in length, situated between the layers of the broad ligament in front of and below the uterine tubes.
- This ligament is directed forward, upward, and lateralward over the external iliac vessels.
- It then passes through the abdominal inguinal ring and along the inguinal canal to the labium majus, in which it becomes lost.
- This lig. Keeps the fundus pulled forwards & maintains the angle of anteversion against the backwaed pull of the uterosacral lig.s.



3.35 Uterus and broad ligament *(continued)*

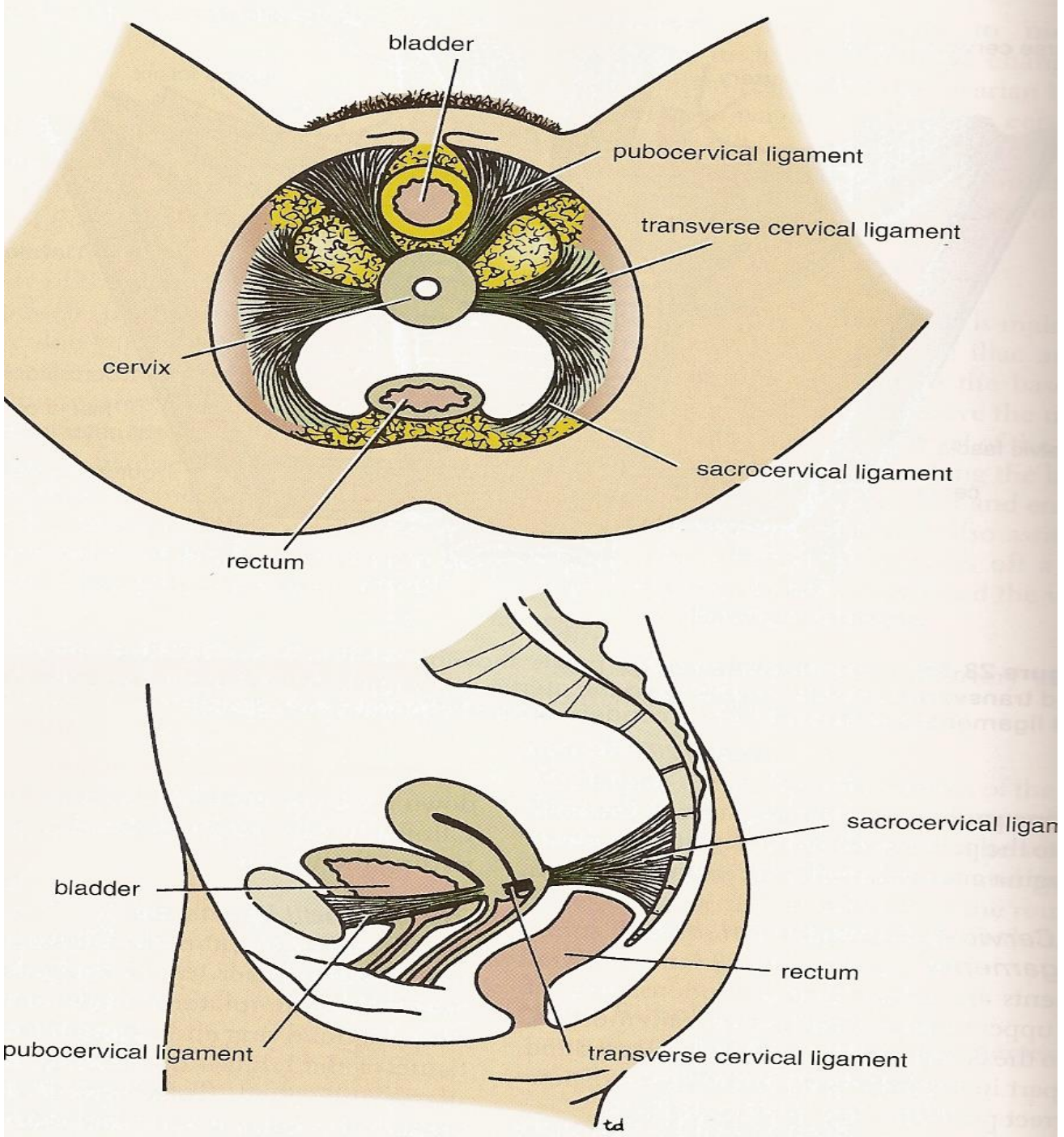
Age and Reproductive changes

- In fetal life; the cervix is large than the body which projects a little above the pelvic brim.
- At puberty the uterus enlarges and descends to adult position.
- During menstruation is slightly enlarged and becomes more vascular. The arbor vitae uteri also appear.((in the mucous membrane lining the cervix uteri, from which numerous secondary folds, or rugae, branch off.))
- During pregnancy is becomes more enlarged ,due to hypertrophy of the m. fibers and partly hyperplasia.
- In old age uterus


Newborn
4 year-old
Puberty
Nulliparous* adult
(A) 2:1
(B) 1:1
(C) 2:1
(D) 2:1
Multiparous** adult
Postmenopausal

Supports of Uterus

- A- Muscular or active:
- (1)pelvic diaphragm.
- (2)perineal body.
- (3)urogenital diaphragm.
- B- Fibromuscular or mechanical:
- ((1)pubocervical lig(connect the cervix to post.Sur.Of pubis
- (2)Transverse cervical lig.(lat. Cervical lig.,mackenrodts lig. cardinal lig.extendd from the cervix &lat.parts of the fornix of the vagina to the lat. Wall.of **thepelvis.**
- (3)Uterosacral lig(pass sup.&slightly post.from the sides of the crevix to the middle of the sacrum..


bladder
pubocervical ligament
transverse cervical ligament
cervix
sacrocervical ligament
rectum
sacrocervical ligan
bladder
rectum
pubocervical ligament
transverse cervical ligament
td

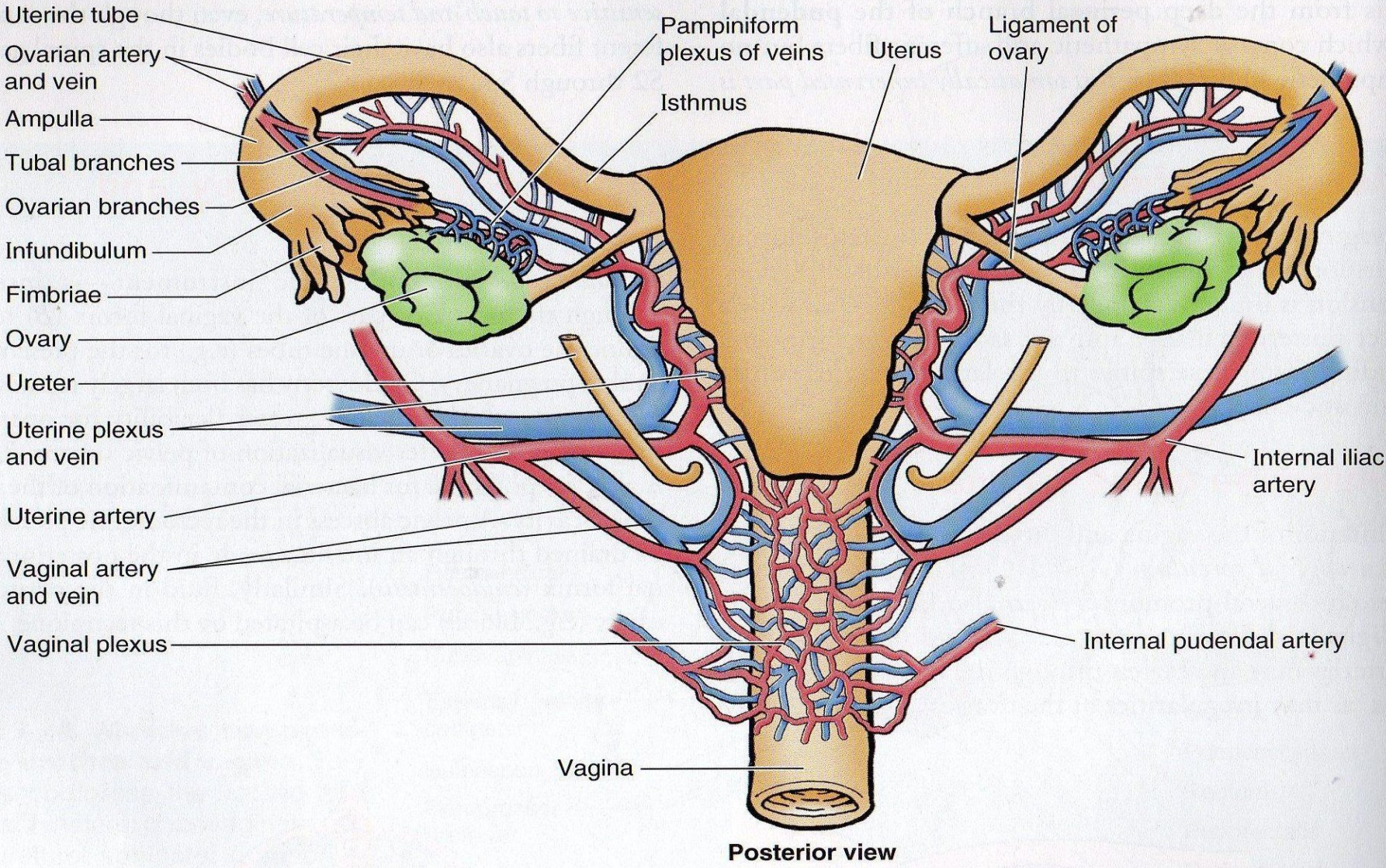


Figure 3.25. Blood supply and venous drainage of the uterus, vagina, and ovaries. The broad ligament of the uterus is removed to show the ovarian artery from the aorta and the uterine artery from the internal iliac artery supplying the ovary, uterine tube, and uterus. Observe also the anastomosing tubal and ovarian branches within the broad ligament (removed). Examine the pampiniform plexus and ovarian vein and the uterine plexus and vein.

Arterial supply

- (1)chieflyby two uterine a.
- (2)partly by the ovarian a .
- Uterine a. is branch from the ant.division.of int.iliac a.
- 1st it runs medially towards the cervix ,crossing the ureter above the lat. fornix of vagina & 2cm lat.to cervix .then the a. ascends along the side of the uterus ,with tortuous course.
- L finally it runs lat.to the hilus of the ovary &anast.with the ovarian a.
- It supp.(1)uterus……helicine a.(2)vagina…….ant.&post. azygosa.(3)medial 2/3 ut.tube.(4)ovary.(5)uerter.(6)contents of broad lig.

Lymphatic drainage

- Begin as 3 intercomm. Networks. Namely endo. Myom. Sub peritoneum .
- These plexuses drain into lymph.on the side of the uterus.
- Upper lymph…….(fundus&upper part of the body pass to…aortic nodes.&partly….to superficial inguinal nodes)
- Lower lymph…(cervix to…external and internal iliac &sacral nodes)
- Middle lymph……(lower part of the body pass to….exter. iliac nodes.

Nerve Supply

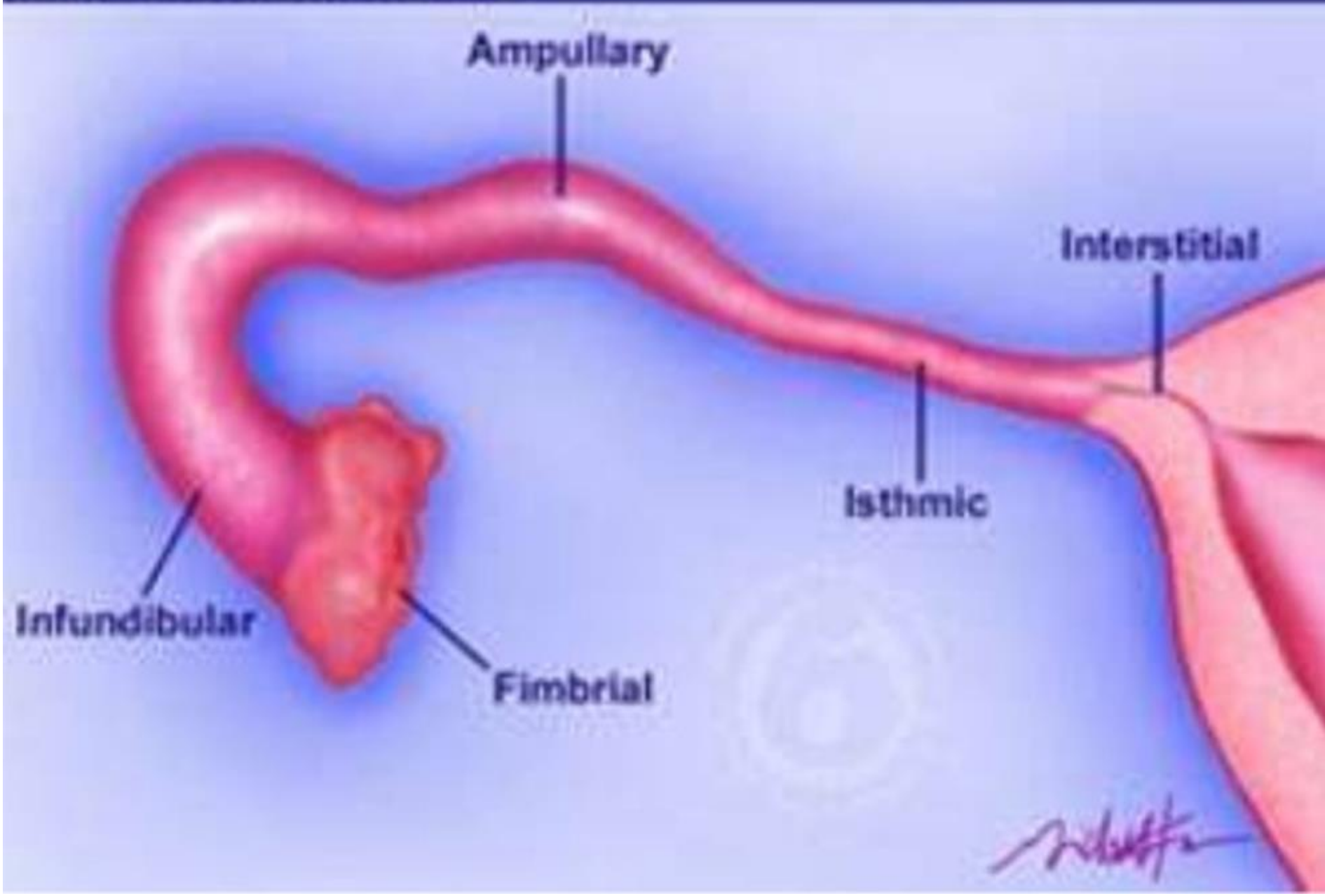
- By both sympathetic &parasympathetic through the inf.hypogastric & ovarian plexuses.
- Symp.(T12,L1).....uterine contraction .& vasoconstrictor .
- **Parasympathetic (S2,3,4).....uterine inhibitory & vasodilator** .

THANK YOU

VAGINA

- The vagina connects the cervix to the external genitals
- It is located between the bladder and rectum
- It functions :
- As a passageway for the menstrual flow
- For uterine secretions to pass down through the introitus
- As the birth canal during labor
- With the help of two Bartholin's glands becomes lubricated during SI

Normal Tube

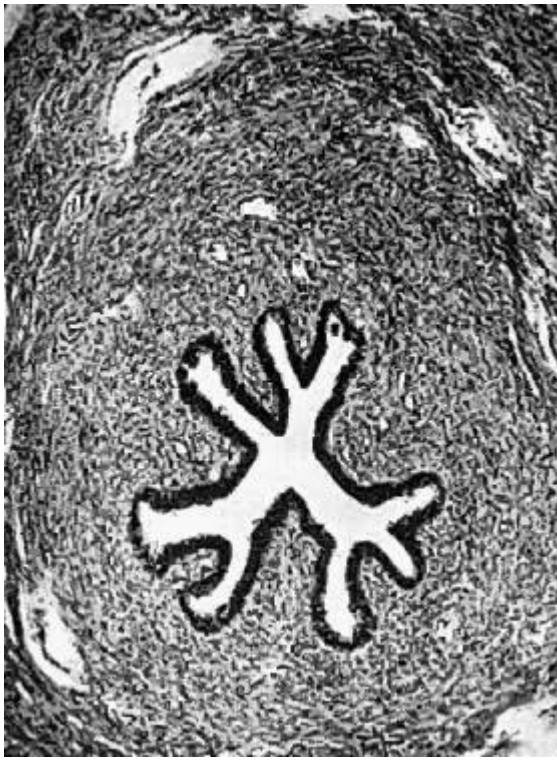


Fallopian tube

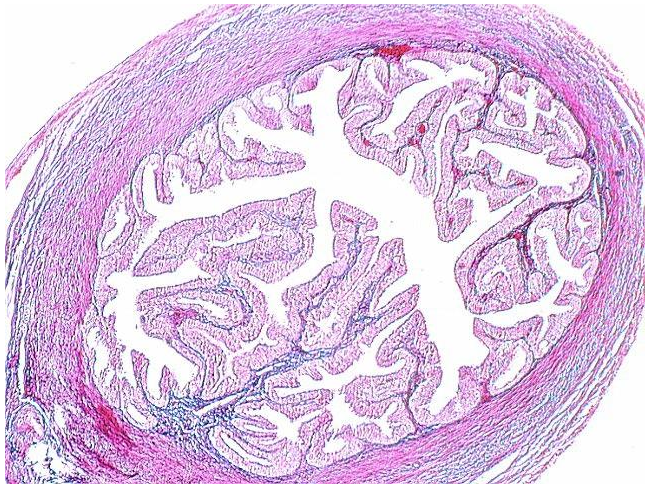
(uterine tube, oviduct)

- 10-14 cm
- Lies within the superior border of broad ligament
- 2 openings
  - Medially into cornua
  - Laterally into abdominal cavity

- **The fallopian tubes are bilateral muscular structures of para mesonephric duct origin. They are from 7 to 12 cm in length and usually less than 1 cm in diameter. The tubes or oviducts have a lumen that varies considerably in diameter. It is extremely narrow, being less than 1 mm at its opening into the uterine cavity.**

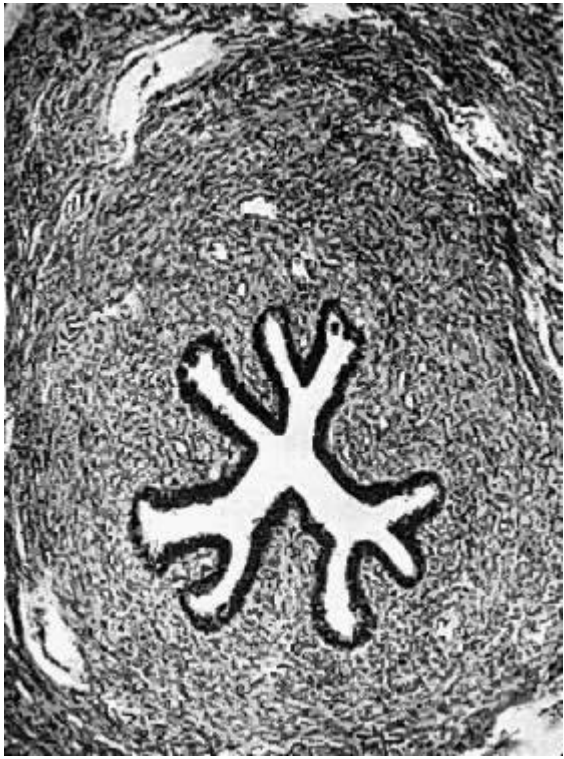


- It is wider in the isthmus (2.5 mm) and in the ampulla is approximately 6 mm in diameter. The tube begins in the uterine cavity at the cornu and penetrates the myometrium (intramural or interstitial portion). r.



- **The second portion is the relatively straight and narrow portion of the tube which emerges from the uterus posterior to and a little above the origin of the round ligament. The lumen of the narrow isthmus is relatively simple, with a few longitudinal folds.**

- This portion of its tube is 2 or 3 cm long. There are three layers of musculature: the inner longitudinal, the middle circular layer, and the outer longitudinal layer. There is some evidence that the isthmus may act as a sphincte



The ampulla

- The ampulla is the largest and longest portion of the tube, approximately 5 cm or more in length. The lumen enlarges from 1 or 2 mm near the isthmus to over a centimeter at the distal portion. The mucosa has multiple longitudinal folds. The ampulla is the portion usually involved in gonorrheal salpingitis and tubo-ovarian abscesses and is the site of most ectopic pregnancies

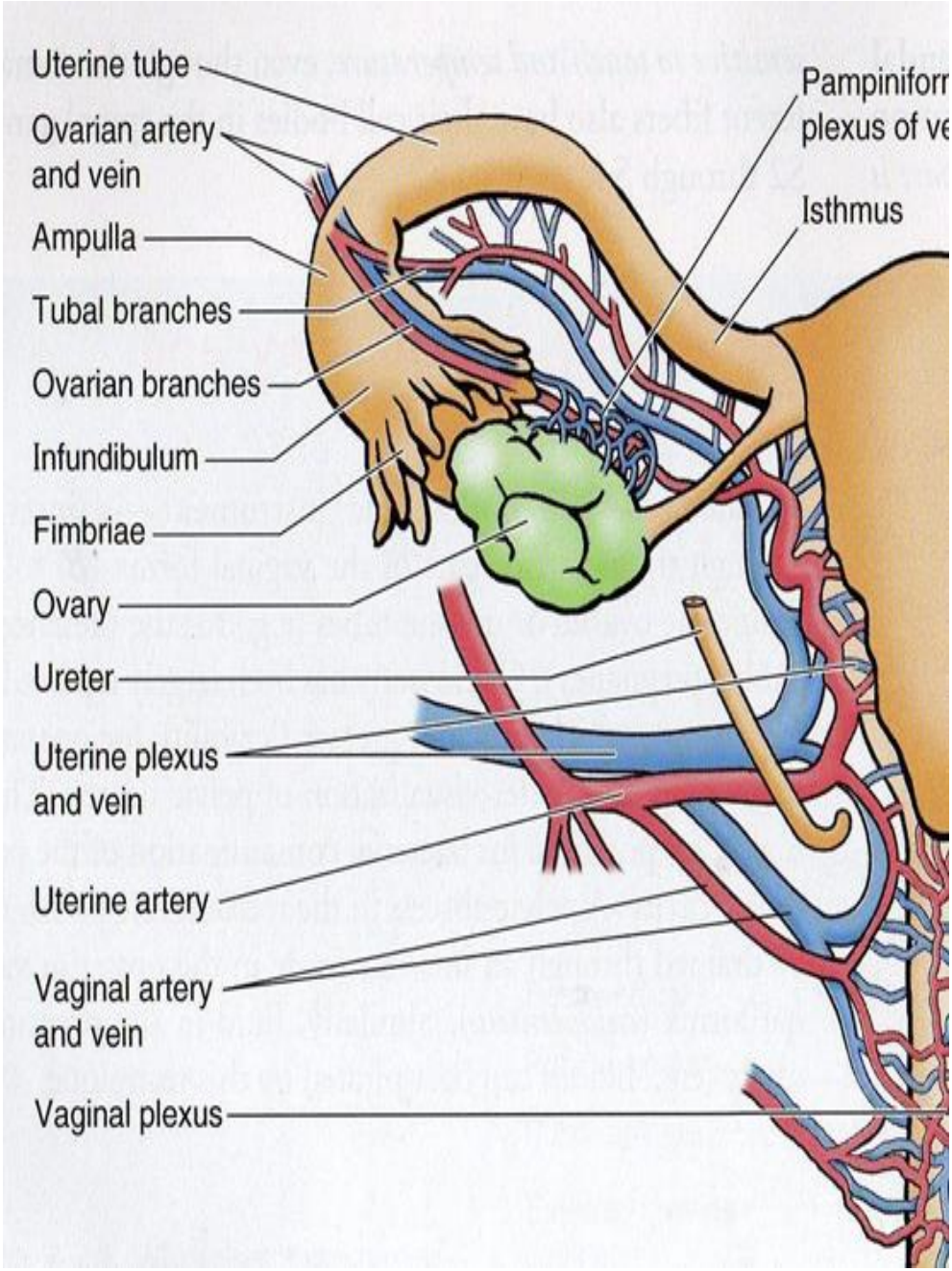
- At the distal end of the tube is the trumpet shaped infundibulum. The tube ends in a number of fimbriae or frond-like projections; the largest of these is ordinarily in contact with the ovary and is known as the ovarian fimbria. The peritoneal cavity in the female is connected with the exterior of the body through the patent distal end of the tube by way of the uterus and vagina.

Gonorrhea

- **Gonorrhea is a sexually transmitted disease ().You get it from having sex with someone who is infected with it. Some people call it “the clap.” Gonorrhea usually causes pain and other symptoms**

- **The ovum must enter through the open end of a tube if fertilization is to occur in the ampullary portion, where sperm have collected by migrating "upstream" against the current. This opening is of considerable clinical importance as blood, ascending infections, or pus can pass out of the tube to invade the abdominal cavity, with resultant pain, endometriosis, or pelvic infection.**

- **The principal blood supply of the tube is from the upper end of the uterine artery, which bifurcates and sends a large branch or ramus below the tube to anastomose with the ovarian artery**
- **The proximal two-thirds of the tube is chiefly supplied by the uterine artery**

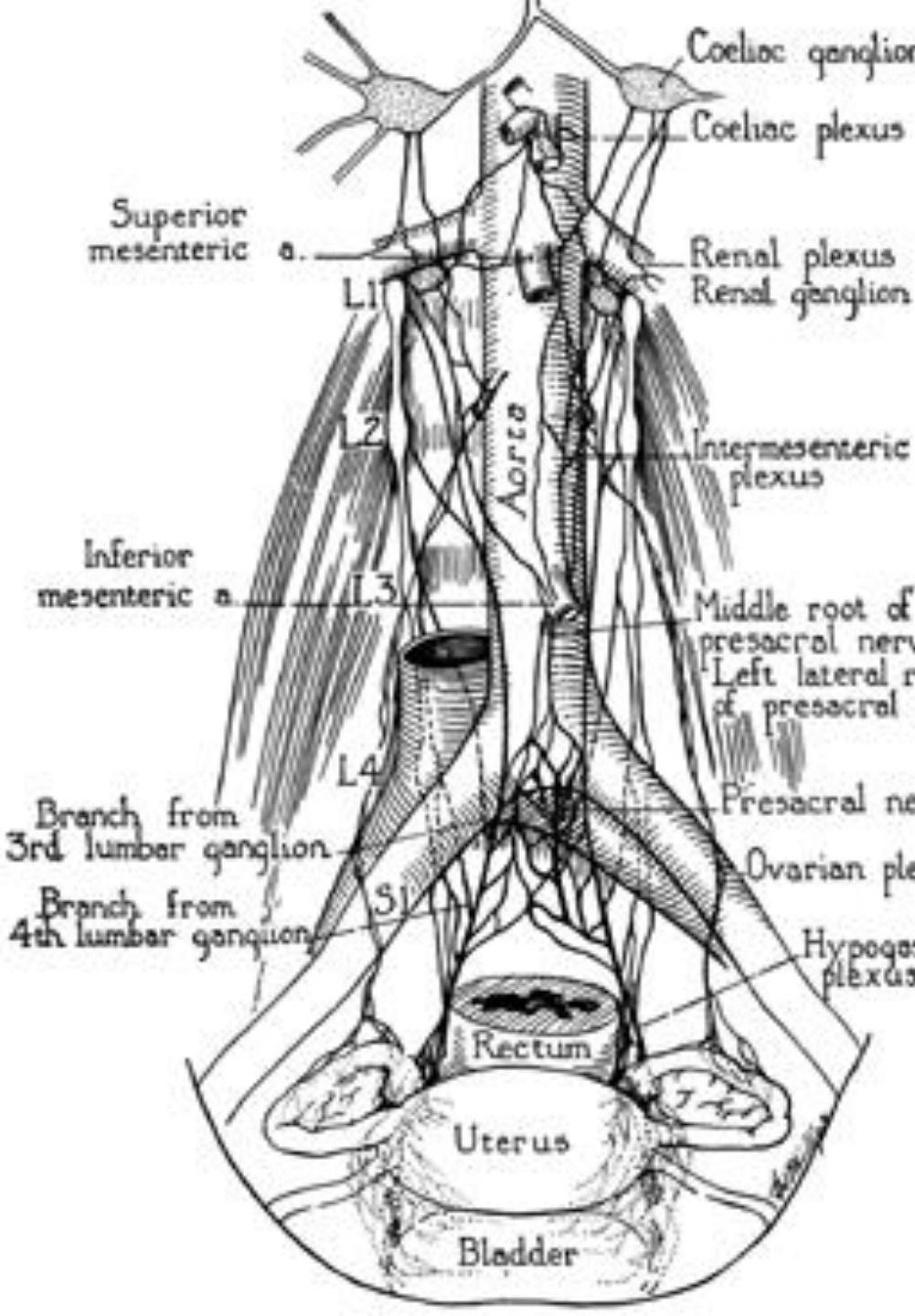


- **The venous system accompanies the arterial distribution. Capillary networks are to be found in subserosal, muscularis, and mucosal layers**
- **The lymphatic drainage runs along the upper edge of the broad ligament to the lymphatic network below the hilus of the ovary. From here the flow from uterus, tube, and ovary drains to the para-aortic or lumbar nodes.**

Nerve supply

- The tube is provided with both sympathetic and parasympathetic innervation. Sympathetic fibers from T10 through L2 reach the inferior mesenteric plexus. Postganglionic fibers then pass to the oviduct. The fibers from the inferior mesenteric plexus pass to the cervicovaginal plexus, which in turn sends fibers to the isthmus and part of the ampulla.

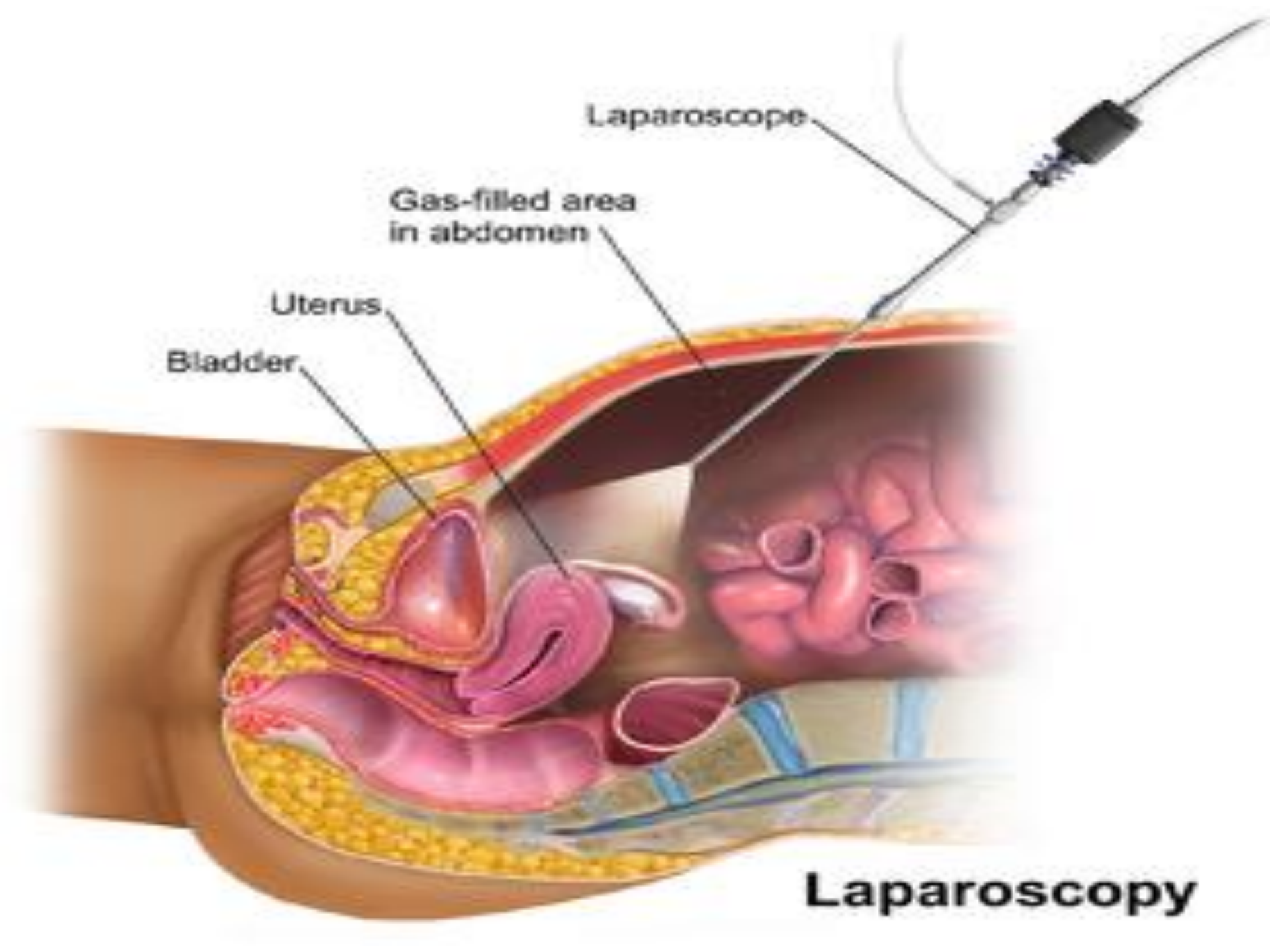
- The tube is provided with both sympathetic and parasympathetic innervation. Sympathetic fibers from **T10 through L2 reach the inferior mesenteric plexus..**

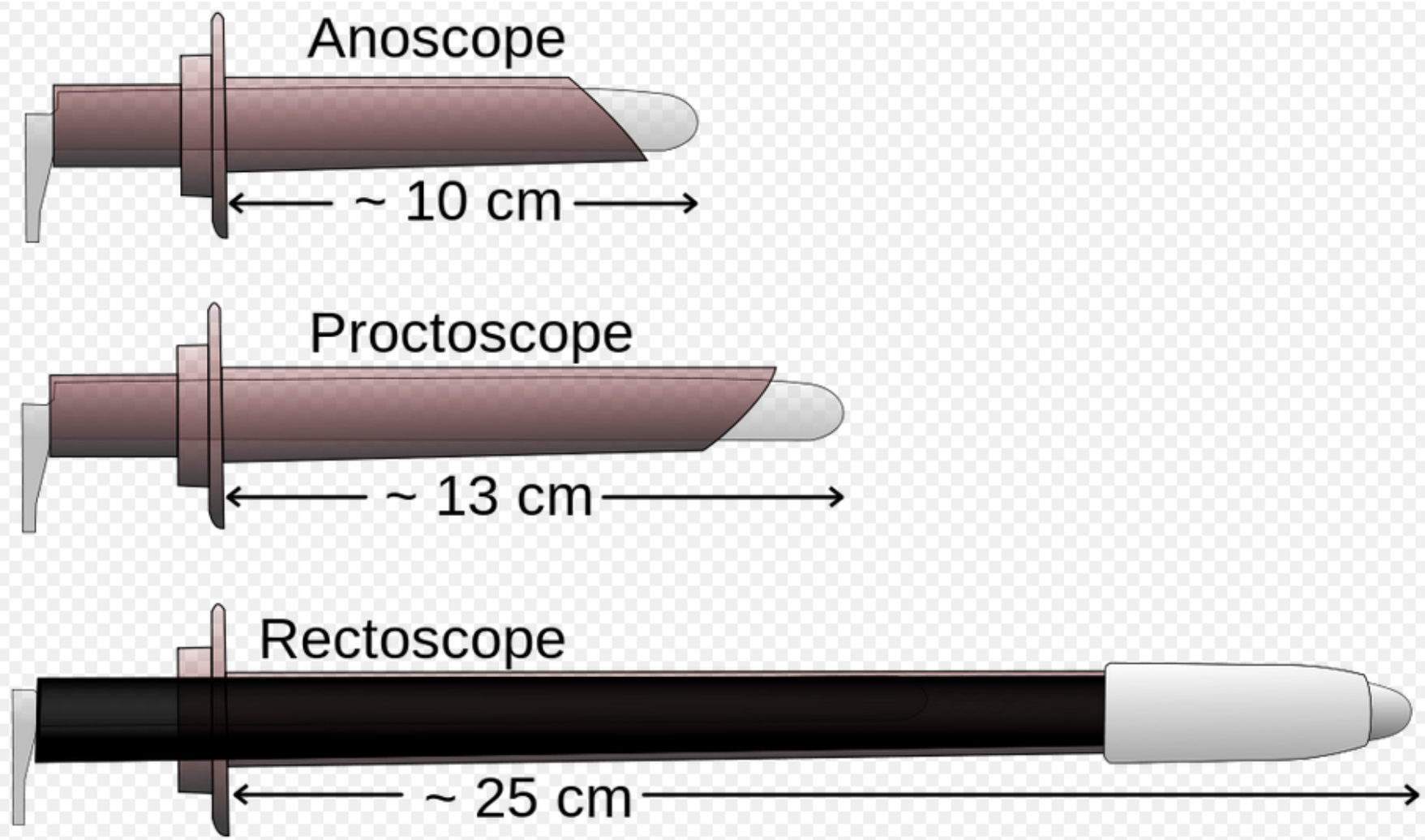


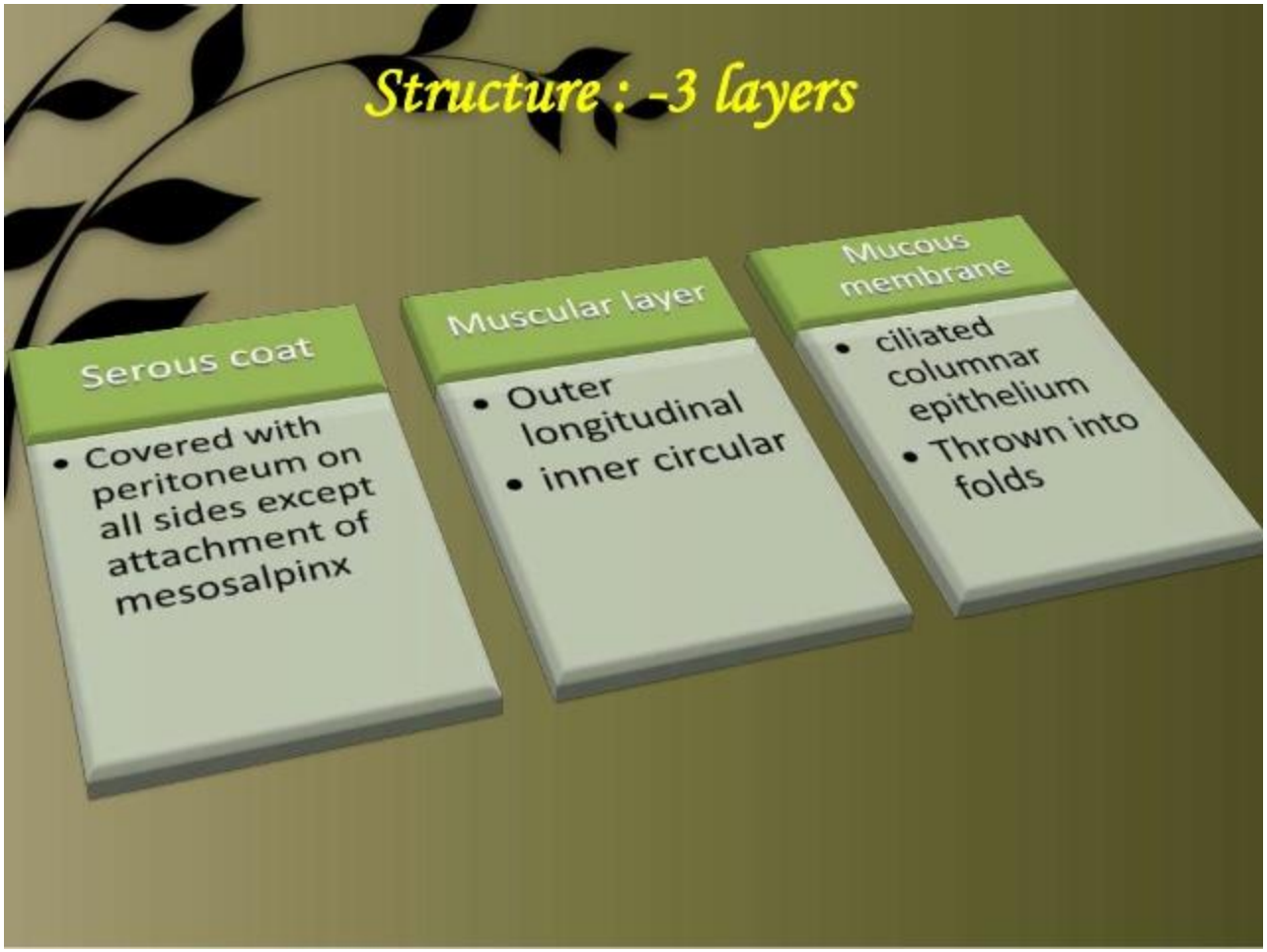
- Postganglionic fibers then pass to the oviduct. The fibers from the inferior mesenteric plexus pass to the cervicovaginal plexus, which in turn sends fibers to the isthmus and part of the ampulla

- **Some sympathetic fibers from T10 and T11 reach the celiac plexus and provide postganglionic fibers to the ovarian plexus, which supplies the distal ampulla and fimbriae.**

- The parasympathetic supply is by vagal fibers from the ovarian plexus supplying the **distal portion of the tube**. Part of the isthmus receives its parasympathetic supply from **S2, S3, and S4 via the** pelvic nerve and the pelvic plexuses.


Laparoscope
Gas-filled area in abdomen
Uterus
Bladder
Laparoscopy


Anoscope
~ 10 cm
Proctoscope
~ 13 cm
Rectoscope
~ 25 cm


Structure : -3 layers
Serous coat
• Covered with peritoneum on all sides except attachment of mesosalpinx
Muscular layer
• Outer longitudinal
• inner circular
Mucous membrane
• ciliated columnar epithelium
• Thrown into folds

- Blood Supply
  - Arteries
    - Uterine A
    - Ovarian A
  - Veins
    - Through pampiniforn plexus into ovarian veins
- Lymphatics
    - Para-aortic nodes
- Nerve supply

  Uterine & ovarian nerves

CERVIX

- The cervix connects the uterus to the vagina
- The cervical opening to the vagina is small
- This acts as a safety precaution against foreign bodies entering the uterus
- During childbirth, the cervix dilates to accommodate the passage of the fetus
- This dilation is a sign that labor has begun

FALLOPIAN TUBES

- Serve as a pathway for the ovum to the uterus
- Are the site of fertilization by the male sperm
- Often referred to as the oviducts or uterine tubes
- Fertilized egg takes approximately 6 to 10 days to travel through the fallopian tube to implant in the uterine lining

Other Sex Organs

- Any area can be arousing depending on the type of stimulation and the perceptions of the recipient
- Breasts (mammary glands) – modified sweat glands that produce milk; fatty tissue, 15 to 20 lobes, and milk-producing glands (alveoli)

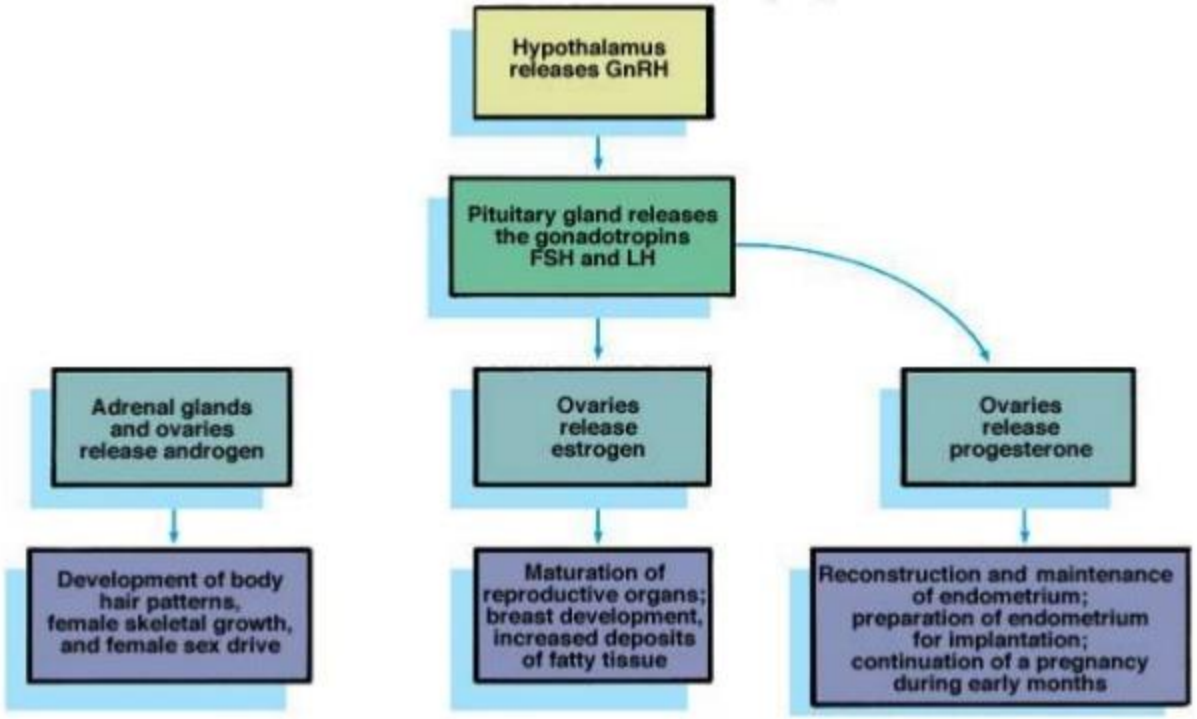
  Nipple, areola
  - Sucking stimulates pituitary gland to release prolactin (begin milk synthesis) and oxytocin (release of milk)

BREASTS

- Organs of sexual arousal
- Contain mammary glands
- Consist of connective tissue that serves as support
- Each breast contain 15-25 clusters called lobes
- Each lobule is connected by ducts that open into the nipples
- The nipples are made up of erectile tissue
- The pigmented around the nipples are called the areola

- Breast size is determined primarily by heredity
- Size also depends on the existing fat and glandular tissue
- Breasts may exhibit cyclical changes, including increased swelling and tenderness prior to menstruation
- Benign breast changes refer to fibrocystic disease
- Lumps or masses that are noncancerous

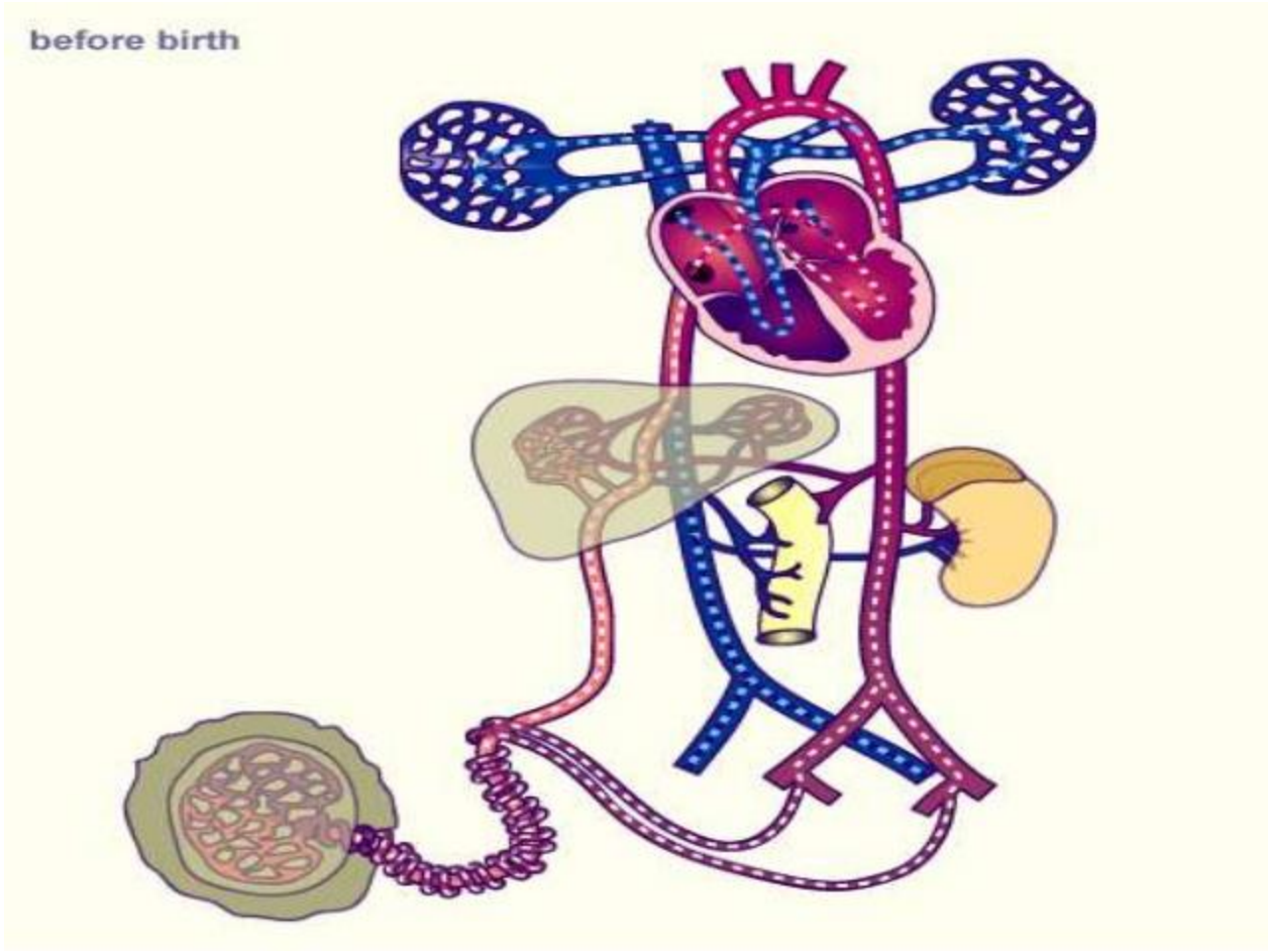
Hormones, Sexual Development & Functions(F)



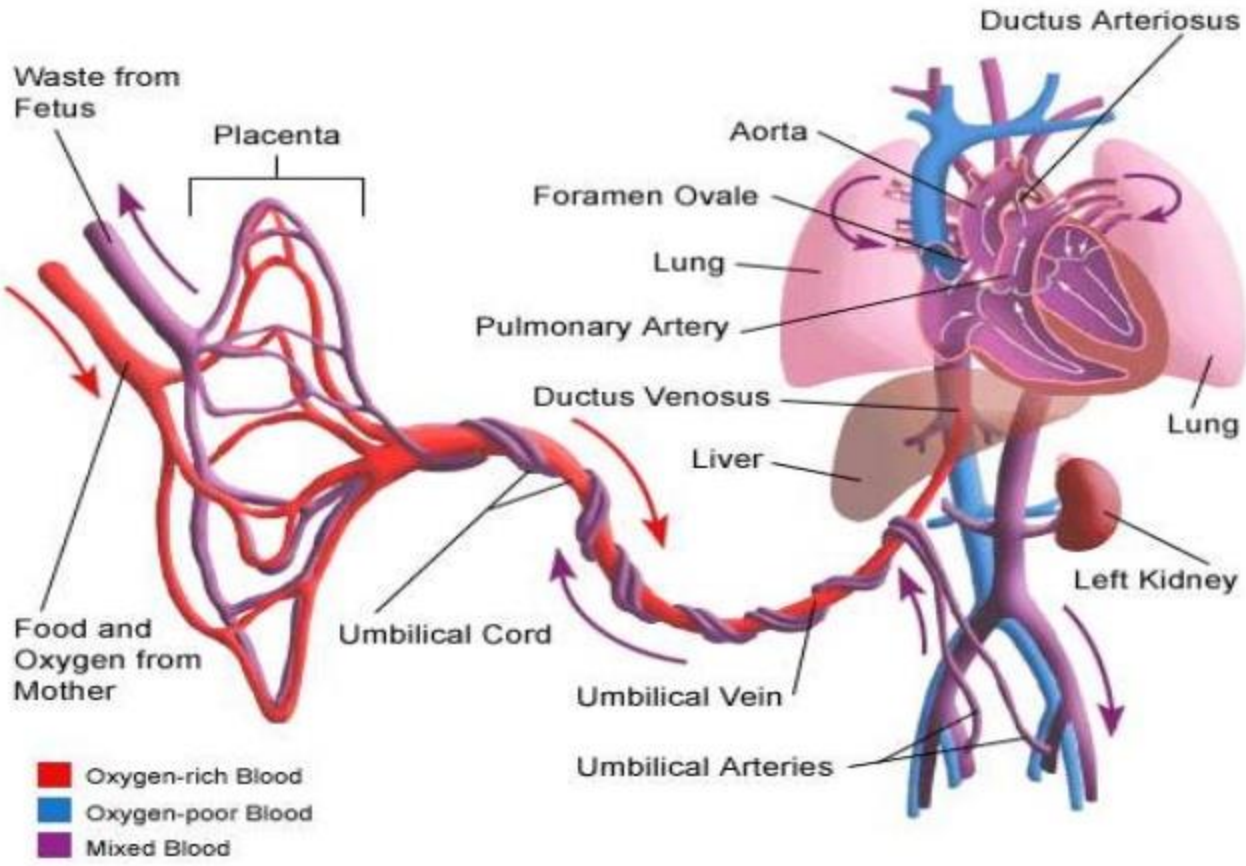
Hormones & Female Reproductive Processes

HORMONES IMPORTANT TO THE FEMALE REPRODUCTIVE PROCESSES

HORMONE	SOURCE	ACTION
GnRH	Hypothalamus	Stimulates anterior pituitary to secrete FSH and LH
FSH	Anterior pituitary	Stimulates ovaries to develop mature follicles (with ova); follicles produce increasingly high levels of estrogen
LH	Anterior pituitary	Stimulates the release of the ovum by the follicle; follicle then converted into a corpus luteum that secretes progesterone
Estrogen	Ovary (follicle); placenta	Stimulates repair of endometrium of uterus; negative feedback effect inhibits hypothalamus production of GnRH
Progesterone	Ovary (corpus luteum); placenta	Stimulates thickening of and maintains endometrium; negative feedback inhibits pituitary production of LH
Prolactin	Anterior pituitary	Stimulates milk production after childbirth
Oxytocin	Posterior pituitary	Stimulates milk "letdown"
Androgens	Adrenal glands	Stimulates sexual drive
hCG	Embryo (if pregnancy)	Stimulates production of progesterone

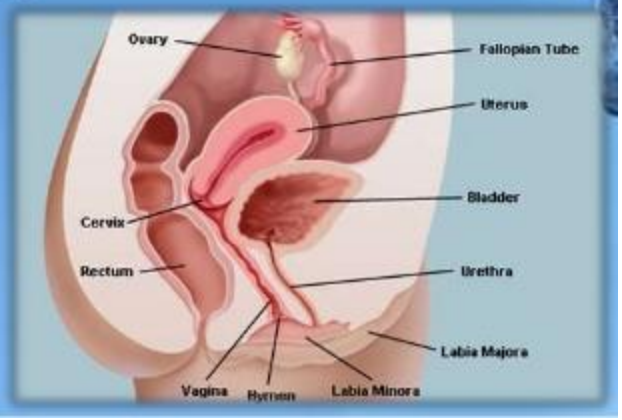

before birth

Fetal Circulation

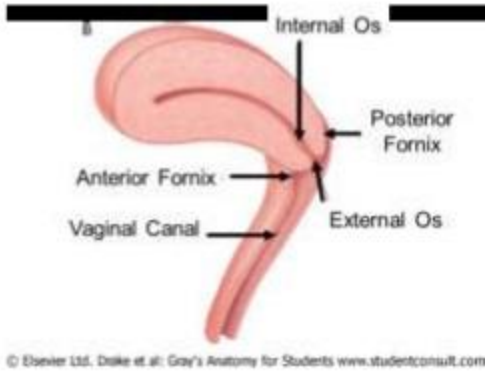


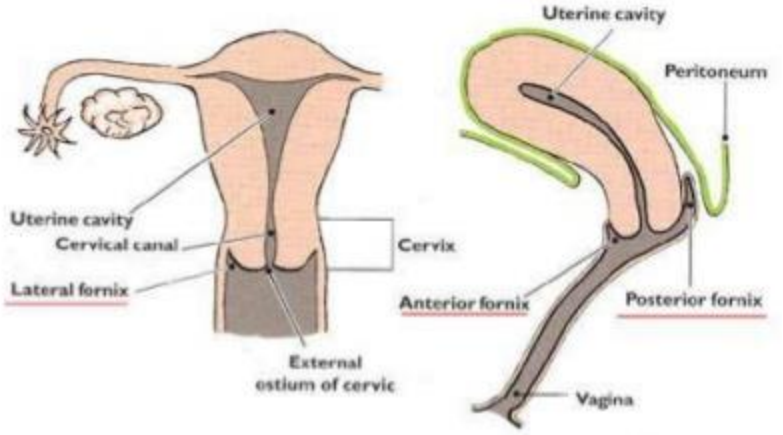
Vagina

- Fibromuscular membranous sheath
- Excretory channel
- Organ of copulation
- Birth canal of parturition
- 45 horizontal
- 2.5cm diameter
- distensibility



- **Walls**
  - Ant : 7.5 cm
  - Post : 9cm
  - 2 lateral walls
- **Fornices :**
  - Ant : shallow
  - 2 lateral
  - Post : deep





VAGINA - RELATIONS

ANTERIOR
- Bladder
- Urethra

POSTERIOR
- Pouch of Douglas
- Ampulla of rectum
- Perineal body
- Anal canal

LATERAL
- Ureter
- Uterine artery
- Levator ani
- Urogenital diaphragm

- Structure
  - mucous coat
  - Submucous layer of loose areolar vascular tissues
  - Muscular layer
  - Fibrous coat (from endopelvic fascia) :highly vascular
- Vaginal secretion
  - Doderlein's bacilli : lactic acid from glycogen

- Blood Supply
  - Arteries
    - Cervicovaginal br. Of uterine A
    - Vaginal A
    - Middle rectal A
    - Internal pudendal
    - Anastomose---form 2 azygos arteries
  - Veins drain into:
    - Internal iliac V
    - Internal pudendal V

- Lymphatics drain into
  - Upper 1/3rd : internal iliac nodes
  - Middle 1/3rd: external iliac nodes
  - Lower 1/3rd (below hymen) : superficial inguinal gp.

- Nerve supply
  - Parasympathetic : S234
  - Sympathetic: hypogastric plexus
  - Lower end : pudendal N (sensory)

- **Relation**
  - **Anterior**
    - Above int.os : uterovesic
    - Below int.os: separated from UB by loose areolar tissue
  - **Posterior**
    - Pouch of Douglas with coils on intestine
  - **Lateral**
    - Broad ligament
    - Mackenrodt's ligan
    - Uterine A & ureter