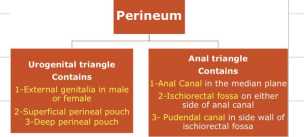
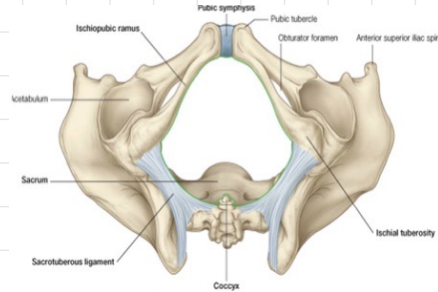
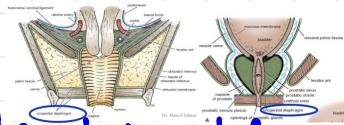


★ Topic 3:- perineum



- perineum:-** diamond-shaped Lower end of the trunk.
 - Glossary:-** peri:-around, ino:-discharge, evacuate.
 - Location:-** Below pelvic diaphragm, Between the upper parts of thighs.
 - Boundaries (outlet)**
 - Anteriorly:-** Inferior margin of symphysis pubis.
 - posteriorly:-** Tip of Coccyx.
 - Anterolateral:-** fused rami of pubis, ischium, ischial tuberosity.
 - posterolateral:-** Sacrotuberous Ligament.
 - Longest diameter:-** Anterioposterior
 - Divisions:-** by a line joining the anterior part of ischial tuberosities
 - Anteriorly:-** Urogenital Triangle
 - posteriorly:-** Anal triangle

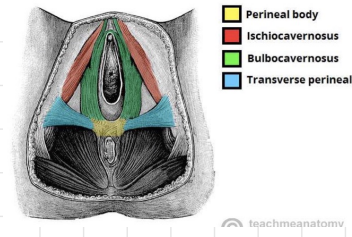
- Urogenital triangle:-** Contains these fascial layers:-
 - Colles fascia:-** membranous layer of the superficial fascia of the perineum
 - perineal membrane (Inferior fascia):-** Triangular fibrous sheet which lies across the pubic arch.
 - Floor of deep perineal pouch.**
 - Roof of superficial perineal pouch.**



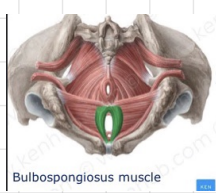
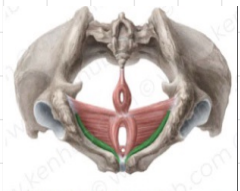
- Urogenital diaphragm:-** triangular musculofascial diaphragm situated in the anterior part of perineum, fills the gap of the pubic arch.
 - formed by:-** sphincter urethra (external) & deep transverse perineal
 - enclosed between superior & inferior layer (perineal membrane) of fascia of urogenital diaphragm.**

- 2 Fibromuscular masses**
 - Anococcygeal raphe (Body):-** from tip of coccyx → rectoanal Junction
 - easily stretched during defaecation & labour, recalcid by coccygeus M, supports lower rectum.**
 - perineal Body (central tendon):-** remnants of urorectal septum. in median plane, front of anus
 - Relations**
 - M:-** Between anal canal & bulb of penis.
 - F:-** Between anal canal & lower part of vagina.
 - importance:-** support the uterus & vagina. Rupture → prolapse of uterus.
 - muscles attached:-**

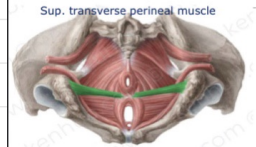
3 paired muscles	3 single muscles
1. Superficial transverse perineal.	1. Bulbospongiosus.
2. Deep transverse perineal.	2. Superficial part of external urethral sphincter (sphincter urethrae).
3. Levator prostate or sphincter vaginae part of levator ani.	3. Superficial part of external anal sphincter



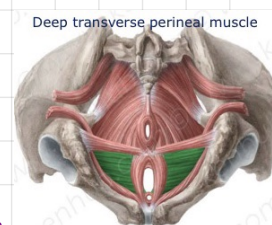
- muscles of perineum:-**
 - Nerve supply:-** perineal branch of pudendal N.



- 1 muscles of superficial perineal pouch.**
 - Ischiocavernosus**
 - site:-** covers the crus penis.
 - Action:-** Compresses crus penis to maintain erection of penis.
 - Bulbospongiosus**
 - site**
 - M:-** covers bulb of penis.
 - F:-** 2 parts covers bulb of vestibule.
 - Action**
 - M:-** Assist erection & eject last drop of urine during micturition.
 - F:-** act as sphincter vagina & help in erection of clitoris.
 - Superficial transverse perineal**
 - site:-** on posterior edge of perineal membrane, front of anus.
 - Action:-** fixation the perineal body.



2 muscles of the Deep perineal pouch (urogenital diaphragm).



- Sphincter urethrae**
 - Site**: Surrounds membranous urethra.
 - Attachment**
 - Inferior (superficial) part.
 - Superior (deep) part.
 - Action**: represents the voluntary control of urethra.
- Deep transverse perineal**
 - Site**: Deep surface of posterior border of perineal membrane.
 - Action**: fixation of perineal body.

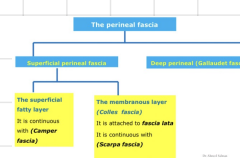
• Perineal Fascia:-

→ Superficial perineal fascia

- Superficial fatty layer**
 - M**: replaced with dartos muscle, continuous with subcutaneous tissue of Ab.
 - F**: make up substance of Labia majora & mons pubis, continuous with Camper.
 - Both**: continuous posteriorly with ischio-anal fat pad in anal region.

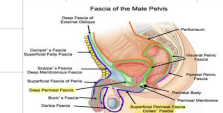
→ membranous layer (Colles fascia)

- posteriorly**: posterior margin of perineal membrane & body.
- Laterally**: fascia lata (deep fascia) of upper medial aspect of the thigh.
- Anteriorly**: in males → continuous with the fascia of penis & scrotum.
- on each side of scrotum**: membranous layer of Abdomen (Scarpa fascia).



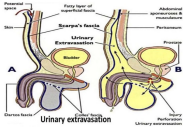
→ perineal fascia (deep perineal, investing, Gallaudet fascia)

- invests the ischiocavernosus, bulbospongiosus & superficial transverse perineal muscles.
- Laterally**: ischio-pubic rami.
- Anteriorly**: fused to the suspensory ligament of the penis.



• Rupture of the urethra:-

1 Spongy urethra



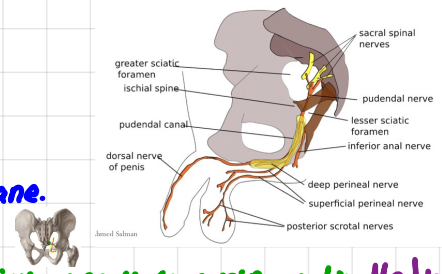
- cause (straddle injury)**: sever blow to perineum, falling on mental beam.
- The urine extravasates into the superficial pouch & then passes forward into loose CT of the scrotum, around the penis beneath the membranous layer of Lower part of anterior abdominal wall.

2 membranous part

- cause**: fracture pelvis, fault catheterisation.
- The urine escapes into the deep perineal pouch & may pass upward around the prostate & bladder (extra peritoneal) through urogenital hiatus.

- Both cases**: The urine cannot pass into thigh because attachment of Colles fascia with fascia lata below inguinal ligament, also cannot pass posteriorly to anal triangle due to fusion of superficial & deep layer of perineal fascia around posterior edge of perineal membrane.

★ Topic 4:- perineum - 2



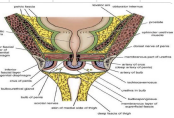
• Pudendal canal

- **Location**:- fascial canal in Lower lateral wall of ischioanal fossa.
- **Extends**:- Lesser sciatic foramen to the posterior border of perineal membrane.
- **pudendal N**:- somatic nerve from (S2, S3, S4).
 - **course**:- pelvic → greater sciatic foramen (Below piriformis) → gluteal Region → cross sacrospinous Lig Medial to vessels → Lesser sciatic → pudendal canal
- **Branches**
 - **Inferior rectal (mixed)**:- motor to external anal sphincter, sensory to Anal canal below pectinate line & skin around anus.
 - **perineal N (mixed)**:- Motor to all perineal M, sensory → 2 scrotal (labial) → 2/3 posterior scrotum (Labium majora).
 - **Dorsal N of penis (clitoris) (sensory)**:- inter deep perineal pouch → superficial perineal pouch → dorsum of penis, supplying its skin & glans.
- **Internal pudendal Artery**:- from anterior internal iliac A.
 - **course**:- Same as nerve → Deep perineal pouch → superficial perineal pouch → close to pubic arch.
 - **Branches**
 - **2 canal**
 - **Inferior rectal A**:- anal canal below the pectinate line.
 - **perineal A**
 - **2 scrotal (labial)**:- to scrotum (Labia majora)
 - **Transverse perineal A**:- anastomoses with its corresponding one.
 - **2 DPP**
 - **Artery of bulb**:- bulbourethral gland & bulb of penis (vestibule).
 - **urethral A**:- → SPP → supply corpus spongiosum & urethra.
 - **2 SPP**
 - **Dorsal A**:- skin, fascia & glans.
 - **Deep A**:- runs in corpus cavernosum → supply cavernous tissue.

Internal pudendal artery	Internal pudendal nerve
Inferior rectal	Inferior rectal N
Perineal A	Perineal N
Two scrotal (or labial)	Two scrotal (or labial)
Transverse perineal A	
Artery of the bulb	
Urethral artery	
Dorsal artery of the penis	Dorsal nerve of penis or clitoris
Deep artery of the penis	

• Deep perineal pouch (DPP)

- **Boundaries**
 - **Floor**:- perineal membrane (Inf. urogenital diaphragm).
 - **Roof**:- Inferior fascia of pelvic Diaphragm (Levator ani).
 - **either side**:- obturator fascia
 - **posteriorly**:- Roof + floor → closed.
 - **Anteriorly**:- Roof + floor → closed below symphysis pubis to form **Transverse perineal Lig (TPL)**
- **TPL**:- male → deep dorsal v (+prostatic venous plexus), female:- deep dorsal vein of clitoris (+vesical venous plexus).

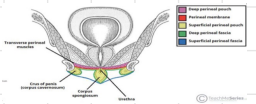


	Male	Female
Urogenital Structures	<ul style="list-style-type: none"> • Membranous urethra • Bulbourethral glands 	<ul style="list-style-type: none"> • Part of the urethra • Part of vagina
Muscles	<ul style="list-style-type: none"> • Sphincter urethrae • Deep transverse perineal muscles (These two muscles form the urogenital diaphragm.) 	
Vessels	<ul style="list-style-type: none"> • Internal pudendal A. • Artery of bulb. • Urethral A. • Perineal A. 	<ul style="list-style-type: none"> • Internal pudendal A. • Artery of bulb of vestibule. • Perineal A.
Nerves	<ul style="list-style-type: none"> • Dorsal N. of penis. • Perineal N. 	<ul style="list-style-type: none"> • Dorsal N. of clitoris. • Perineal N.

N.B. : the greater vestibular glands of the female lie in the superficial perineal pouch, the bulbourethral glands of the male lie in the deep perineal pouch

• Superficial perineal pouch (SPP)

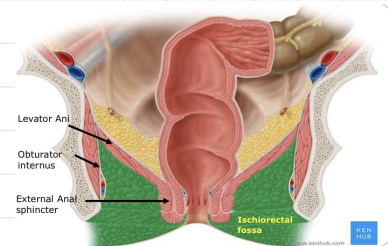
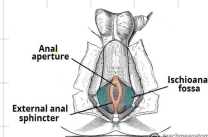
- **Boundaries**
 - **Floor**:- Colles fascia
 - **Roof**:- perineal membrane
 - **either side**:- Roof + floor to side of pubic arch.
 - **posteriorly**:- Roof + floor → closed.
 - **Anteriorly**:- opened & continuous between membranous layer of anterior abdominal wall & external oblique aponeurosis



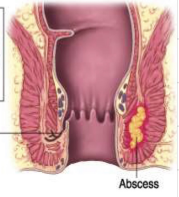
	Male	Female
Urogenital Structures	<ul style="list-style-type: none"> • Root of penis (2 crura + Bulb) • Penile urethra in corpus spongiosum (bulb of penis) 	<ul style="list-style-type: none"> • Root of clitoris (2 crura) • Two bulbs of vestibule • Greater vestibular glands.
Muscles	<ul style="list-style-type: none"> • Two ischiocavernosus muscles cover the 2 crura • Bulbospongiosus muscle covers bulb of penis. • Two superficial transverse perineal muscles. 	<ul style="list-style-type: none"> • Two ischiocavernosus • Bulbospongiosus muscle • Two superficial transverse perineal muscles.
Vessels	<ul style="list-style-type: none"> • Dorsal A. of penis. • Deep A. of penis. • Two scrotal arteries 	<ul style="list-style-type: none"> • Dorsal A. of clitoris. • Deep A. of clitoris. • Two labial arteries.
Nerves	<ul style="list-style-type: none"> • Dorsal N. of penis. • Two scrotal nerves 	<ul style="list-style-type: none"> • Dorsal N. of clitoris. • Two labial nerves

• Ischioanal fossa (IRF)

- **Location**:- wedge shape space on either side of anal canal
- **Boundaries**
 - **Apex**:- white line (origin of Levator ani).
 - **Base**:- skin
 - **Anteriorly**:- perineal membrane.
 - **posteriorly**:- Sacrotuberous Lig + gluteus maximus M.
 - **Lateral wall**:- vertical, by
 - obturator internus M & obturator fascia splitting to form pudendal C
 - medial surface of ischial tuberosity.



Contents
(8)



medial wall:- Levator ani & external anal sphincter.

pudendal nerve & Artery.

Inferior rectal nerve & vessels.

posterior scrotal nerves & vessels.

perforating cutaneous N (S_2, S_3).

pad of fat:- ↑ fibroelastic fibers

→ cushion support of Rectum & Anal canal.

→ allow distension of Rectum & Anal canal during defecation

→ compress them after termination of the act.

→ **Applied Anatomy:-** infection → abscess → Rupture medially into anal canal or downward into the skin at the fossa → anal fistula.