



Reproductive System



Anatomy Team

430

This lecture is done by:

Haya al-otaibi

Ghada al-saleh

Organized by : Samar Shetawe

Female Perineum and External Genitalia

- ✓ **THE PERINEUM**: is the region of the body below the pelvic diaphragm (**levator ani, coccygeus muscles & their covering fasciae**).
- ✓ If the perineum region is seen from below(inferiorly) in a position where both thighs are abducted (directed laterally away from the body midline) it appears to be a diamond shaped area located **between four boundaries**:

1)anteriorly : mons pubis.

2) posteriorly : intragluteal cleft.

3)laterally: from both sides right and left : medial surfaces of the thighs.

- ✓ **The perineum contains the following:**

- lower ends of **urethra, vagina & anal canal and the external genitalia**

Group of definitions you may refer to :-

1)Mons pubis : is the adipose tissue lying above the pubic bone of adult females, anterior to the pubic symphysis.

2)Intragluteal cleft: is the groove between the buttocks that runs from just below the sacrum to the perineum,

• **The perineal and anococcygeal bodies :**

Structure	Perineal body	The anococcygeal body
The structure	<ul style="list-style-type: none"> An irregular mass of variable size and consistency, located at midpoint of the line between the ischial tuberosities 	It is a complex <u>musculotendinous</u> structure
Location	<ul style="list-style-type: none"> Forms the central point of the perineum 	
Boundaries	<ul style="list-style-type: none"> Lies in the subcutaneous tissue, <u>posterior to vestibule and anterior to the anal canal & anus</u>, blends anteriorly with the perineal membrane 	situated between the <u>anterior aspect of the coccyx</u> and the <u>posterior wall of the anorectal canal</u>
Function	<ul style="list-style-type: none"> Gives attachment to perineal muscles <u>Plays an important role in visceral support especially in female</u> 	<ul style="list-style-type: none"> Receives insertion of fibers of levator ani muscle

- **Boundaries & Division of perineum :**

<ul style="list-style-type: none">• Its bony boundaries are: <u>-Anterior:</u> Symphysis pubis. <u>-Posterior:</u> Coccyx. <u>-Lateral:</u> Ischiopubic rami, ischial tuberosities & sacrotuberous ligament.	<ul style="list-style-type: none">• Divided by an imaginary line passing through two ischial tuberosities, into: <u>-Urogenital triangle</u> anteriorly. <u>-Anal triangle</u> posteriorly.
--	---

- **Urogenital Triangle:**

BOUNDARIES :

- **Anteriorly** : Symphysis pubis
- **Posteriorly** : Transverse line passing through the 2 ischial tuberosities.
- **Laterally** : Ischiopubic rami & ischial tuberosities.

CONTENTS :

- Lower part of urethra & vagina.
- External genitalia (vulva).

• Urogenital Diaphragm

✓ Describe this structure ?

A triangular musculofascial diaphragm located in the anterior part of the perineum that fills in the gap between the pubic arch.

✓ What is Composed of?

1- Sphincter urethrae .

2- the deep transverse perineal muscles enclosed within the superior and inferior layers of fascia of the urogenital diaphragm . **The inferior layer of the fascia is formed by the perineal membrane" Important" .**

• Fascia of Urogenital Triangle (Perineal Fascia)

Defention :

The perineal fascia is continuous anteriorly with the fascia of abdomen and consists of superficial and deep layers

-Superficial perineal fascia: consists of

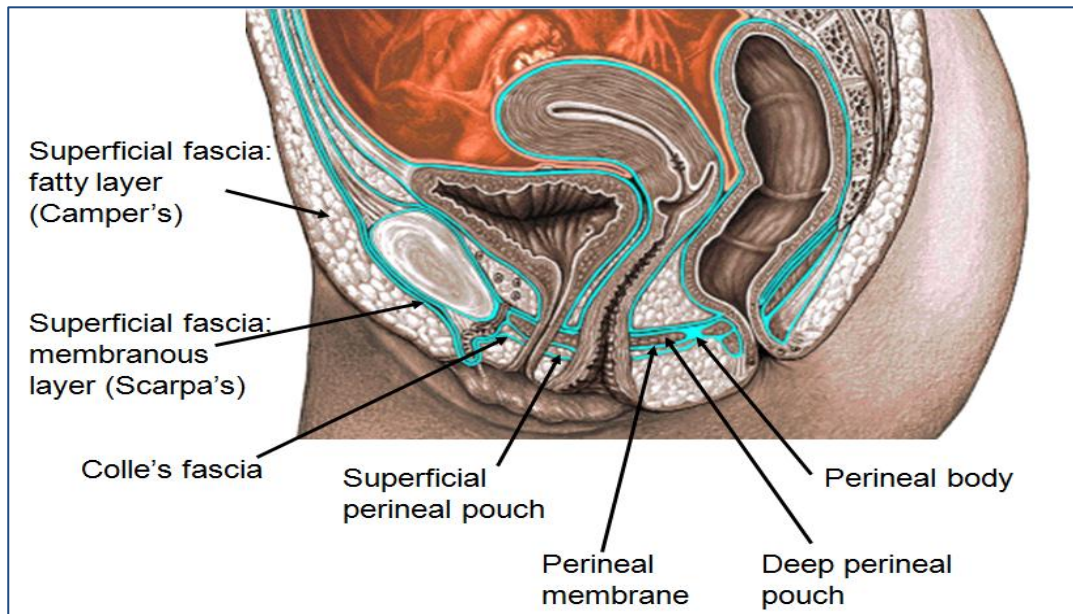
- 1- **Superficial fatty layer (Camper's fascia)** makes up the substance of mons pubis & labia majora and extends into the anal region
- 2- **Deep membranous layer (Colles' fascia):** Does not extend to anal region. Becomes fused with the posterior margin of the perineal membrane.

-Deep perineal fascia invests the muscles in the superficial perineal pouch.

- Superficial & Deep perineal pouches :

	Superficial Perineal Pouch	Deep Perineal Pouch
	It is the space between the deep membranous layer of superficial fascia and the perineal membrane	It is a completely closed space deep to the perineal membrane
Boundaries	<ul style="list-style-type: none"> • Inferiorly: membranous layer of superficial fascia. • Superiorly: perineal membrane. • Laterally: ischiopubic rami 	<ul style="list-style-type: none"> • Inferiorly: Inferior fascia of the urogenital diaphragm (Perineal membrane) • Superiorly: Superior fascia of the urogenital diaphragm • Laterally: Inferior portion of obturator internus fascia
Contents	<p>-Bulbs of vestibule: on each side of vaginal orifice.</p> <p>-Crura of clitoris.</p> <p>-Superficial perineal muscles:</p> <p>1- Bulbospongiosus muscle, surrounds orifice of vagina and covers <u>vestibular bulb</u>.</p> <p>2-Ischiocavernosus muscle: covers <u>crus of clitoris</u> on each side.</p> <p>3-Superficial transverse perineal muscles.</p> <p>-Greater vestibular glands: on each side of vaginal orifice.</p> <p>-Perineal body</p> <p>-Perineal branch of pudendal nerve supplying muscles & skin</p>	<p>-Part of urethra .</p> <p>-Part of vagina.</p> <p>-Sphincter urethrae muscle, which is pierced by urethra & vagina.</p> <p>-Deep transverse perineal muscles</p> <p>-Internal pudendal vessels.</p> <p>Dorsal nerve of clitoris</p>

Look to this picture to understand the layers and pouches of urogenital diaphragm



● Anal Triangle:

Boundaries :

- **Anteriorly:** Transverse line passing through the 2 ischial tuberosities.
- **Posteriorly :** coccyx.
- **Laterally :** ischial tuberosity & sacrotuberous lig. overlapped by _gluteus maximus.

CONTENTS:

1. Lower part of Anal canal (upper part lies in pelvis).
2. Ano-coccygeal body (or raphe) :a fibrofatty mass that extends from anus to tip of coccyx.
3. Ischiorectal fossa on each side.

- **Anal Canal:**

-It is about 1.5 in. long, descending from the rectal ampulla to the anus.

Relations (In female):

- **Anteriorly:** Perineal body, urogenital diaphragm, and lower part of vagina.
- **Posteriorly:** Anococcygeal body.
- **Laterally:** Ischiorectal fossae.
- The upper and lower parts of the anal canal differ in:
 - Origin , Epithelial lining , Arterial supply, Venous drainage , Innervation , Lymph drainage

	Upper part of anal canal	Lower part of anal canal
Origin	derived from hindgut (endoderm)	derived from the proctodeum (ectoderm)
Epithelial lining	lined by columnar epithelium, thrown into vertical folds called anal columns	lined by stratified squamous epithelium, No columns
Arterial supply	superior rectal artery (continuation of the inferior mesenteric artery)	inferior rectal artery
Venous drainage	superior rectal vein drained into the inferior mesenteric vein	<ul style="list-style-type: none"> • inferior rectal vein drained into the internal pudendal vein • Important site of portal-systemic anastomosis

Innervations	Sensitive only to stretching Supplied by inferior hypogastric plexus	Sensitive to pain, temperature, touch and pressure Supplied by inferior rectal nerve
Lymph drainage	pararectal nodes>> inferior mesenteric lymph nodes	superficial inguinal lymph nodes

- **Involuntary internal sphincter** supplied by:

inferior hypogastric plexus (sympathetic) & pelvic splanchnic nerves (parasympathetic)

- **Voluntary external sphincter** supplied by :

inferior rectal nerve (branch of internal pudendal nerve) and perineal branch of the S4 nerve.

- **Female External Genitalia (Vulva):-**

1. **Mons pubis** : a collection of fat overlying the pubes.
2. **Labia majora.**
3. **Labia minora.**
4. **Clitoris.**
5. **Vestibule of vagina:** The interval between the two labia minora. Vagina & urethra open into it through urethral orifice anteriorly and vaginal orifice posteriorly.

- **Ischiorectal Fossa**

-A fascial lined wedge-shaped space on each side of the anal canal.

Boundaries:

- **Base:** Skin of the perineum.
- **Medial wall:** Levator ani & anal canal.
- **Lateral wall:** Obturator internus, covered with pelvic fascia.

Contents:

1. Dense fat.
 2. Pudendal nerve & internal pudendal vessels within the pudendal canal
 3. Inferior rectal nerve & vessels crossing the fossa to reach anal canal
- **Pudendal Canal:** A fascial canal formed by obturator fascia, located on the lateral wall of the ischiorectal fossa, on the medial side of the ischial tuberosity. Contains pudendal nerve and internal pudendal vessels .

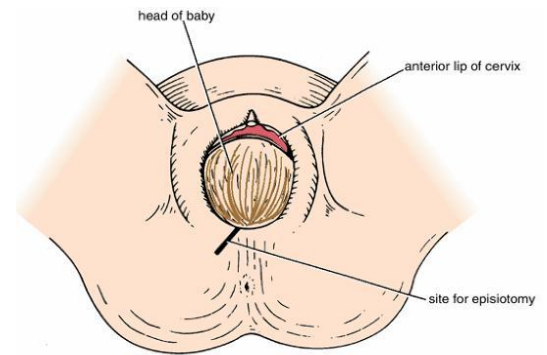
- **Vagina:**

- ✓ The vagina (female genital canal) serves as the excretory duct for the menstrual flow & forms part of the birth canal. It measures about 3 in. (8 cm) long.
- ✓ The vaginal orifice in a virgin possesses a thin mucosal fold, called the **hymen**, which is perforated at its center.
- ✓ **Arteries:** The **vaginal artery, a branch of the internal iliac artery, and the vaginal branch of the uterine artery** .
- ✓ **Veins :** Vaginal veins drain into **the internal iliac veins**.

- Clinical points :

- 1- **Episiotomy:-**

- An **episiotomy** is a surgically planned incision on the perineum and the posterior vaginal wall during second stage of labor.



- 2- **Pudendal Nerve Block "there are 2 methods to block this nerve " :**

- 1- **Transvaginal method:**

The needle is passed through the vaginal mucous membrane toward the ischial spine. After the needle is passed through the sacrospinous ligament, the anesthetic solution is injected around the pudendal nerve

- 2- **Perineal method:**

The ischial tuberosity is palpated subcutaneously through the buttock.

The needle is inserted on the medial side of the ischial tuberosity to a depth of about 1 in. (2.5 cm) from the free surface of the tuberosity. The anesthetic is injected around the pudendal nerve

Summary

-The perineum :-

1)located between four boundaries:

1)anteriorly : mons pubis. **2) posteriorly** : intragluteal cleft. **3)laterally**: from both sides right and left : medial surfaces of the thighs.

2)The perineum contains the following:

lower ends of urethra, vagina & anal canal and the external genitalia

-The perineal body :-

1)boundaries: Lies in the subcutaneous tissue, posterior to vestibule and anterior to the anal canal & anus, blends anteriorly with the perineal membrane.

2) function: Gives attachment to perineal muscles ,plays an important role in visceral support especially in female

-The anococcygeal body :-

1)boundaries: situated between the anterior aspect of the coccyx and the posterior wall of the anorectal canal

2) function: Receives insertion of fibers of levator ani muscle.

-Boundaries & Division of perineum :

1)Its bony boundaries are: Anterior: Symphysis pubis. **Posterior:** Coccyx.

Lateral: Ischiopubic rami, ischial tuberosities & sacrotuberous ligament.

2)Divided by an imaginary line passing through two ischial tuberosities, into:

Urogenital triangle "anteriorly" & **Anal triangle** "posteriorly".

- **Urogenital Triangle:**

1) BOUNDARIES :

- **Anteriorly** : Symphysis pubis
- **Posteriorly** : Transverse line passing through the 2 ischial tuberosities.
- **Laterally** : Ischiopubic rami & ischial tuberosities.

2) CONTENTS :

Lower part of urethra , vagina & External genitalia (vulva).

- **Urogenital Diaphragm:**

1) Composed of:

1- Sphincter urethrae .

2- the deep transverse perineal muscles enclosed within the superior and inferior layers of fascia of the urogenital diaphragm **(The inferior layer of the fascia is formed by the perineal membrane).**

- **Fascia of Urogenital Triangle (Perineal Fascia):**

1) Definition :

The perineal fascia is continuous anteriorly with the fascia of abdomen and **consists of superficial and deep layers**

-Superficial perineal fascia: consists of

- 3- **Superficial fatty layer (Camper's fascia)** makes up the substance of mons pubis & labia majora and extends into the anal region
- 4- **Deep membranous layer (Colles' fascia):** Does not extend to anal region. Becomes fused with the posterior margin of the perineal membrane.

-Deep perineal fascia: invests the muscles in the superficial perineal pouch.

- **Anal Triangle:**

1)Boundaries :

Anteriorly: Transverse line passing through the 2 ischial tuberosities.

Posteriorly : coccyx. **Laterally :** ischial tuberosity & sacrotuberous lig. overlapped by gluteus maximus.

2)CONTENTS: Lower part of Anal canal (upper part lies in pelvis),Ano-coccygeal body (or raphe) :a fibrofatty mass that extends from anus to tip of coccyx , Ischiorectal fossa on each side.

- **Anal Canal:**

-It is about 1.5 in. long, descending from the rectal ampulla to the anus.

1)Relations : (In female):

Anteriorly: Perineal body, urogenital diaphragm, and lower part of vagina.

Posteriorly: Anococcygeal body. **Laterally:** Ischiorectal fossae.

- **Involuntary internal sphincter** supplied by:

inferior hypogastric plexus (sympathetic) & pelvic splanchnic nerves (parasympathetic)

- **Voluntary external sphincter** supplied by :

inferior rectal nerve (branch of internal pudendal nerve) and peineal branch of the S4 nerve.

- **Ischiorectal Fossa:**

1)Boundaries:

Base: Skin of the perineum .**Medial wall:** Levator ani & anal canal.

Lateral wall: Obturator internus, covered with pelvic fascia.

2)Contents: Dense fat., Pudendal nerve & internal pudendal vessels within the pudendal canal, Inferior rectal nerve & vessels crossing the fossa to reach anal canal

- **Vagina:**

Arteries: The vaginal artery, a branch of the internal iliac artery, and the vaginal branch of the uterine artery.

Veins : Vaginal veins drain into the internal iliac veins.