

Inguinal ligament and canal

- dr. Talib

Jawad

Lecture 3 anatomy

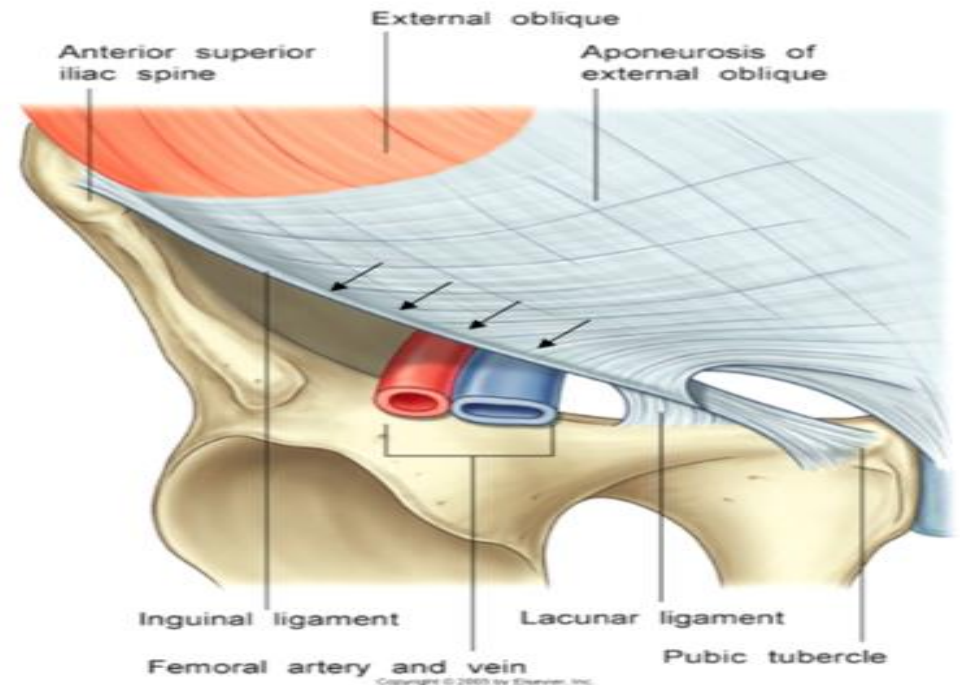
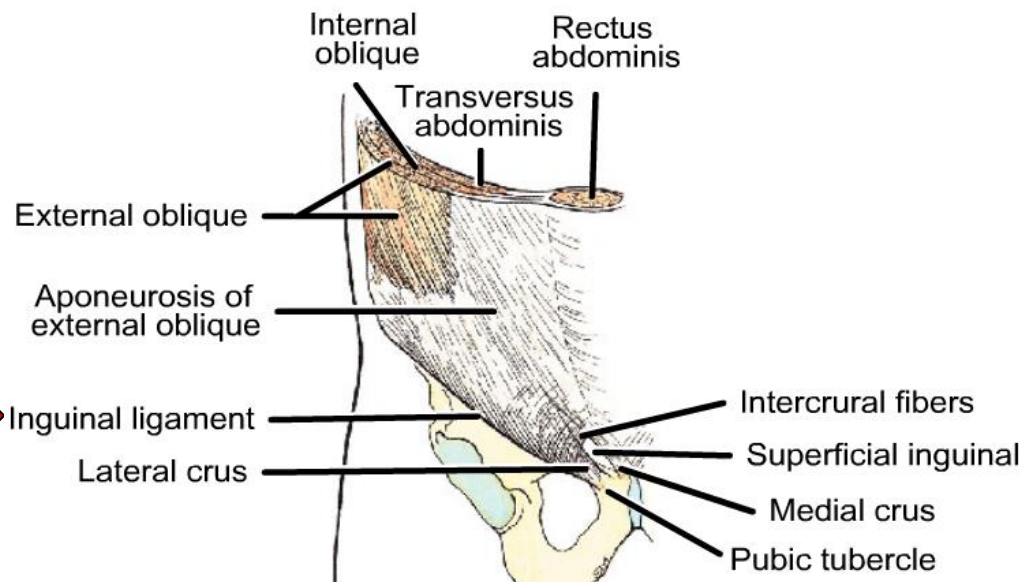
2023- 2024

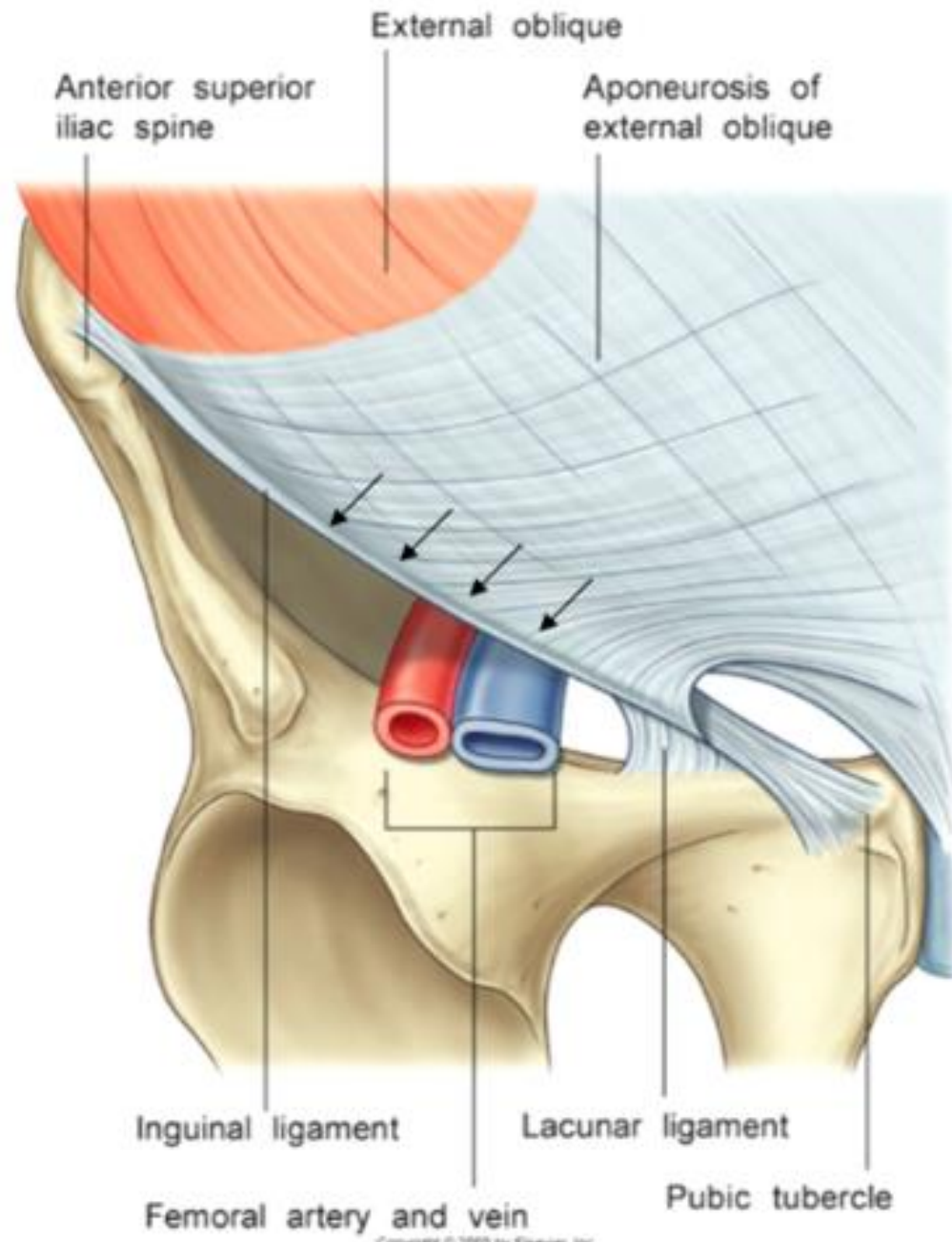


Inguinal Ligament

a- thick, inrolled lower border of the aponeurosis of external oblique, and stretches from the anterior superior iliac spine to the pubic tubercle;

b- forms the 'floor' of the inguinal canal. (It has also been called the **crural arch**. or **Poupart's ligament**.)



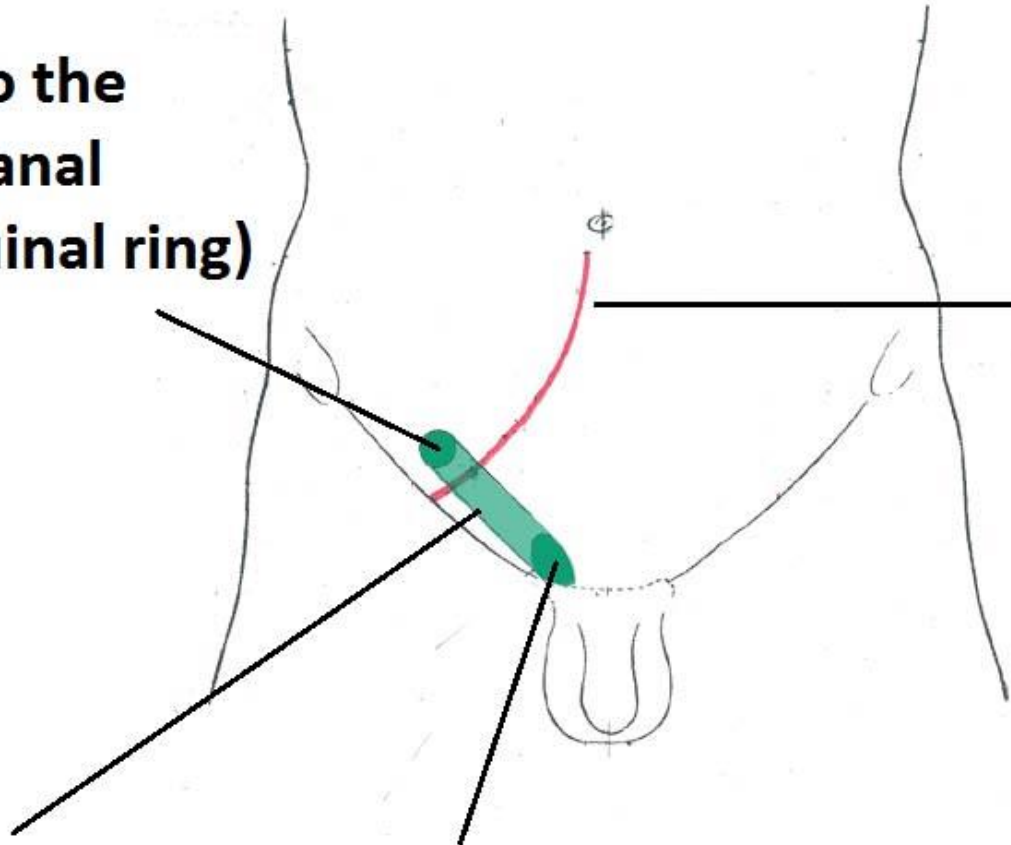


**Opening to the
inguinal canal
(deep inguinal ring)**

**Inferior
epigastric vessels**

Inguinal canal

**Exit from the inguinal canal
(superficial inguinal ring)**



Walls of Inguinal Canal

Anterior wall:

External oblique aponeurosis, reinforced laterally by the origin of internal oblique from the inguinal ligament. It contains superficial inguinal ring medially.

Posterior wall:

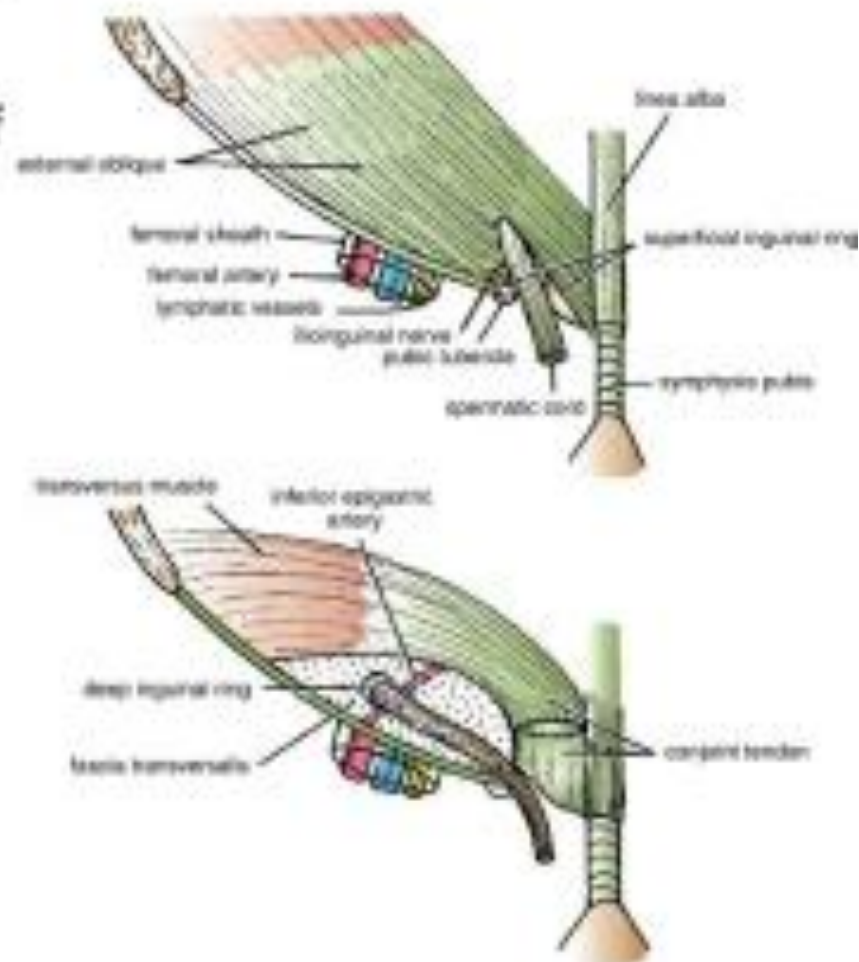
Conjoint tendon medially, fascia transversalis laterally. It contains deep inguinal ring laterally.

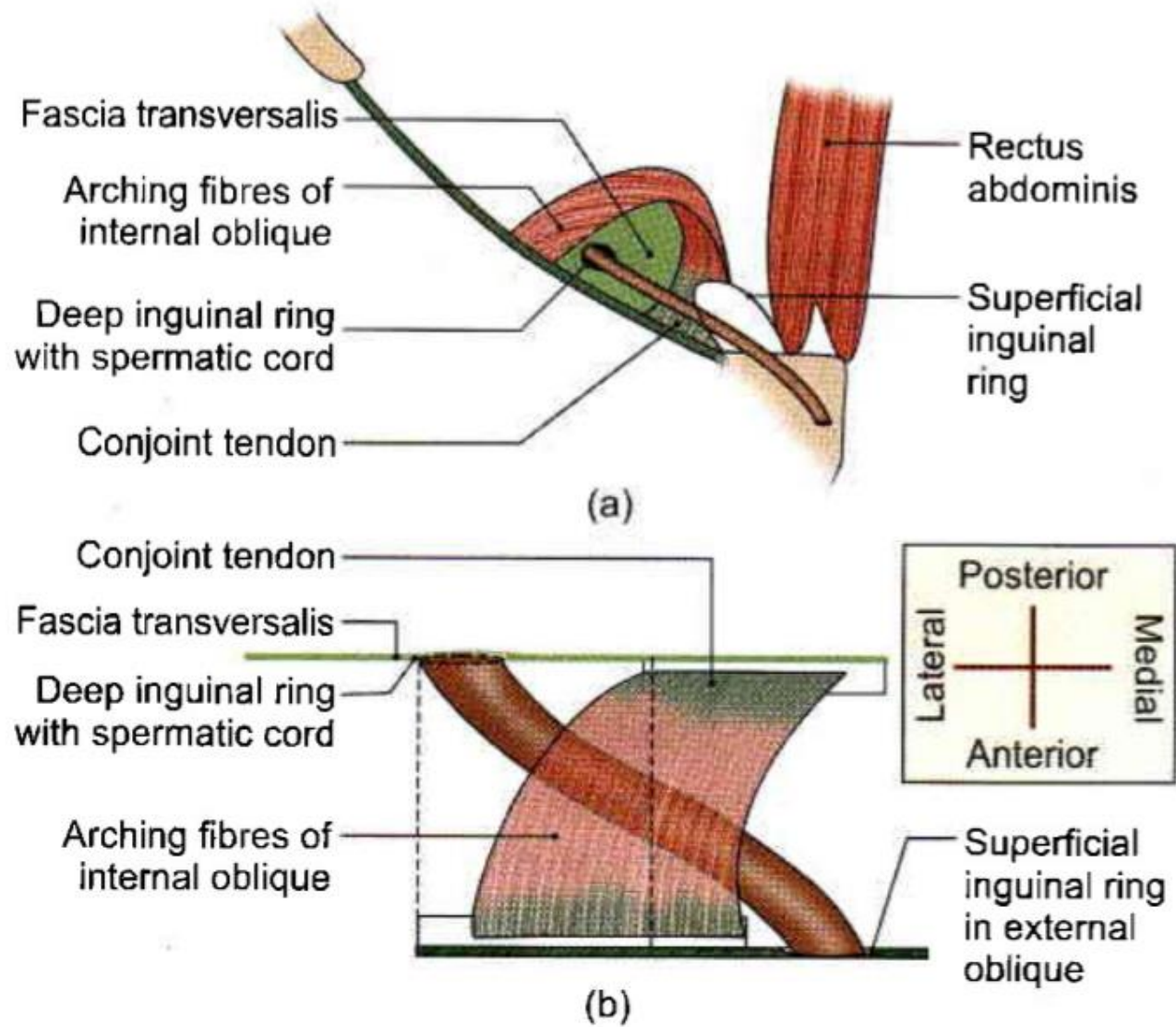
Roof or superior wall:

Arching lowest fibers of internal oblique & transversus abdominis

Floor or inferior wall:

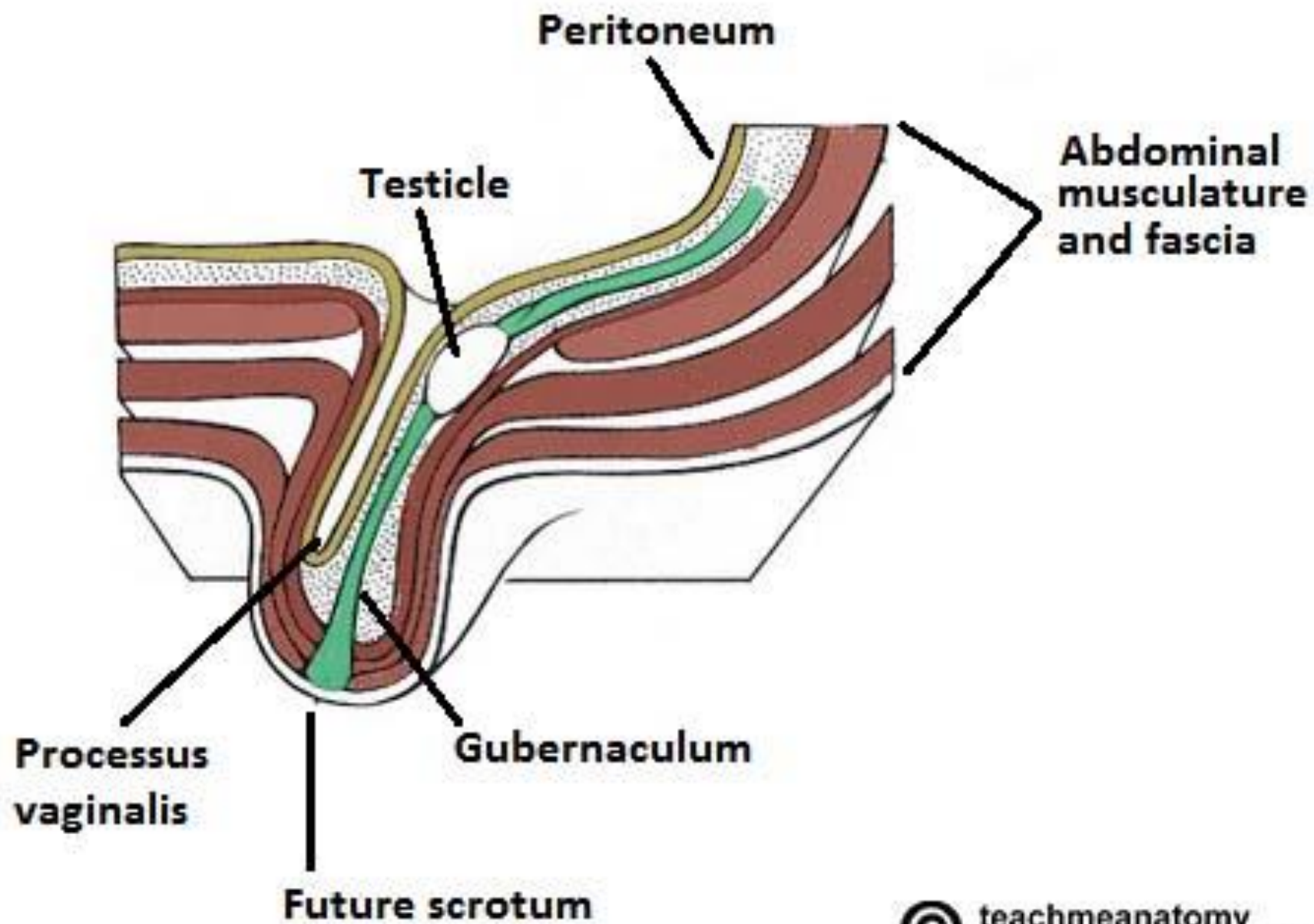
Uprturned lower edge of inguinal ligament and lacunar ligament medially.



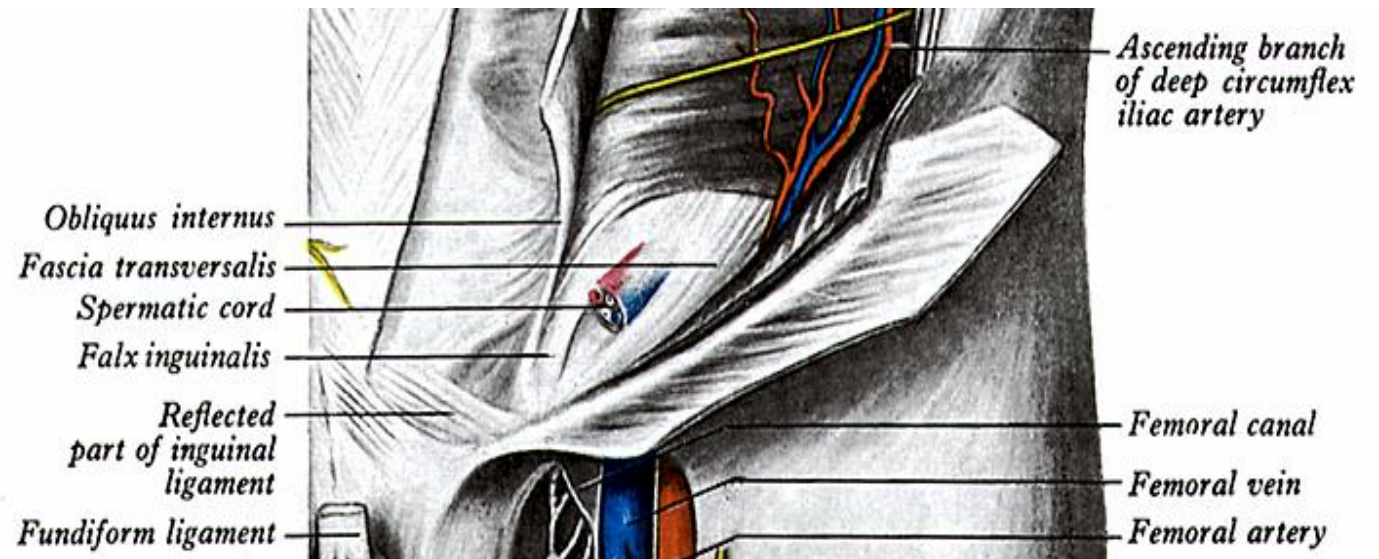


Figs 16.25a and b: (a) Superficial and deep inguinal rings, and (b) formation of the roof of inguinal canal



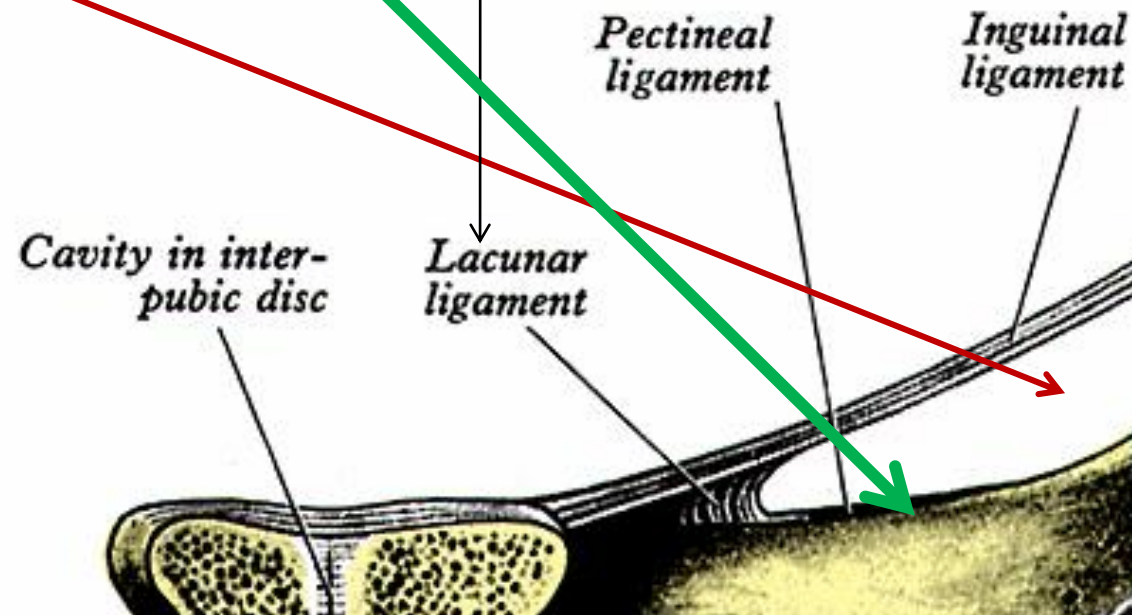


- c- In adults it is 12– 14 cm in length and inclined at 35–40° to the horizontal.
- d- Its lateral half is rounded and more oblique;
- e- Some fibres pass upwards and medially to join the rectus sheath and the linea alba; these constitute the *reflected part of the*
- *Inguinal ligament*



- At the medial end of inguinal ligament , some of it's fibers extend posteriorly and laterally to the pectin pubis is known as the lacunars ligament complex.

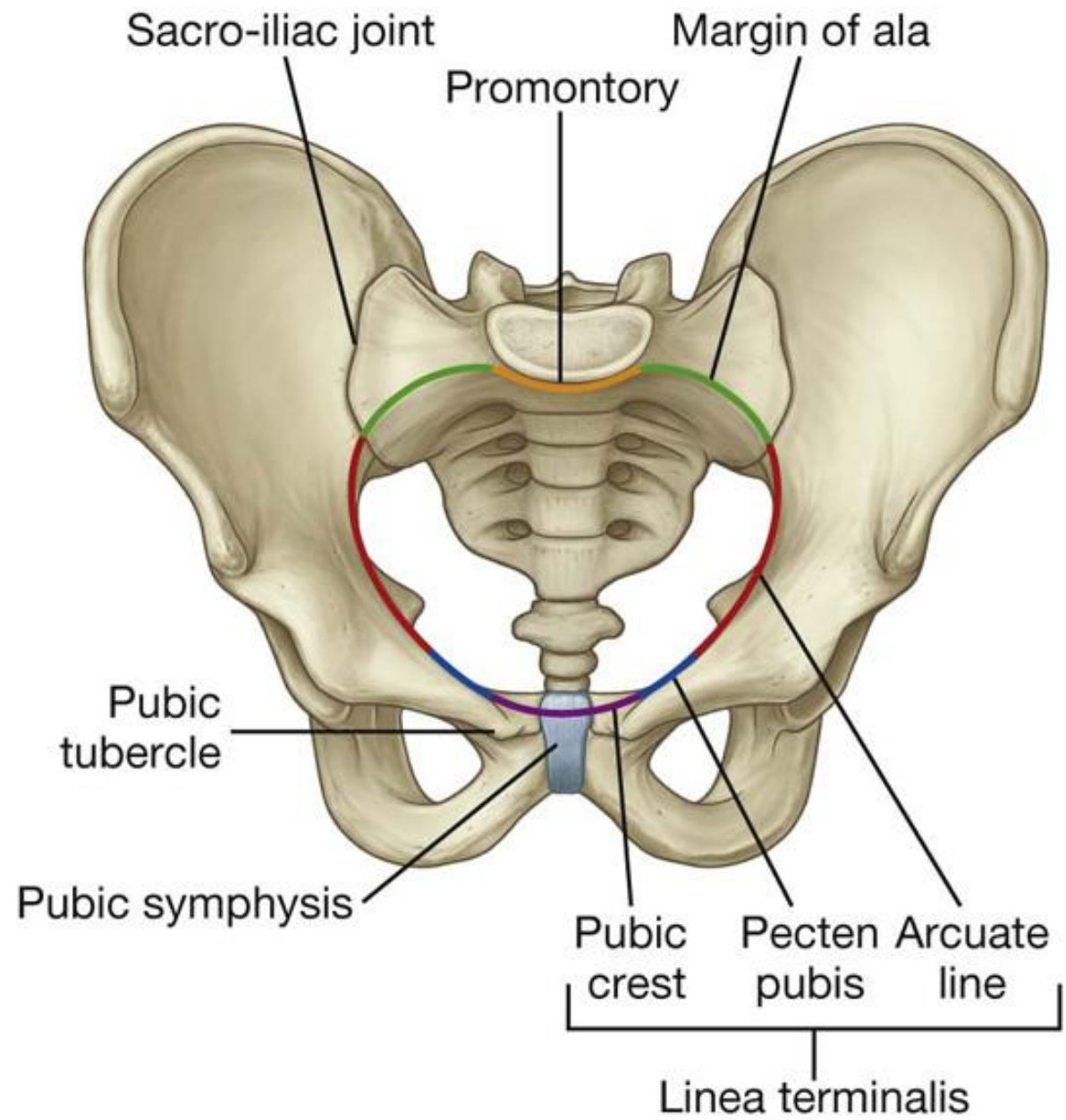
it” posterior fibers extend laterally and is concave and forms pectineal ligament which form the medial boundary of the femoral ring;



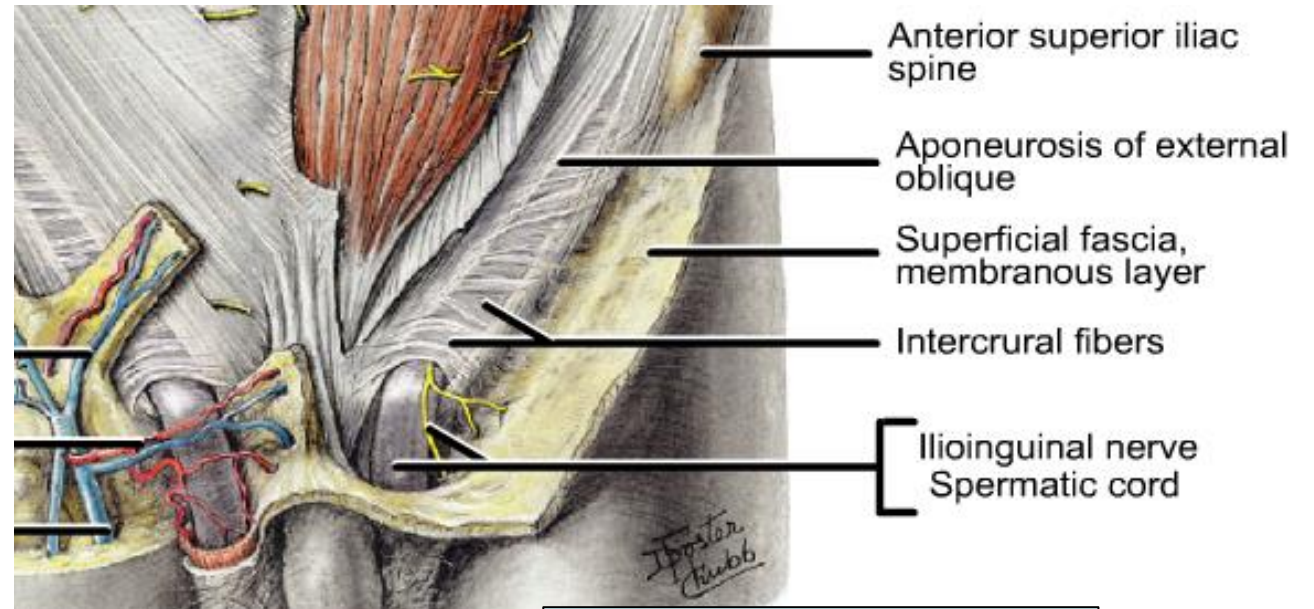
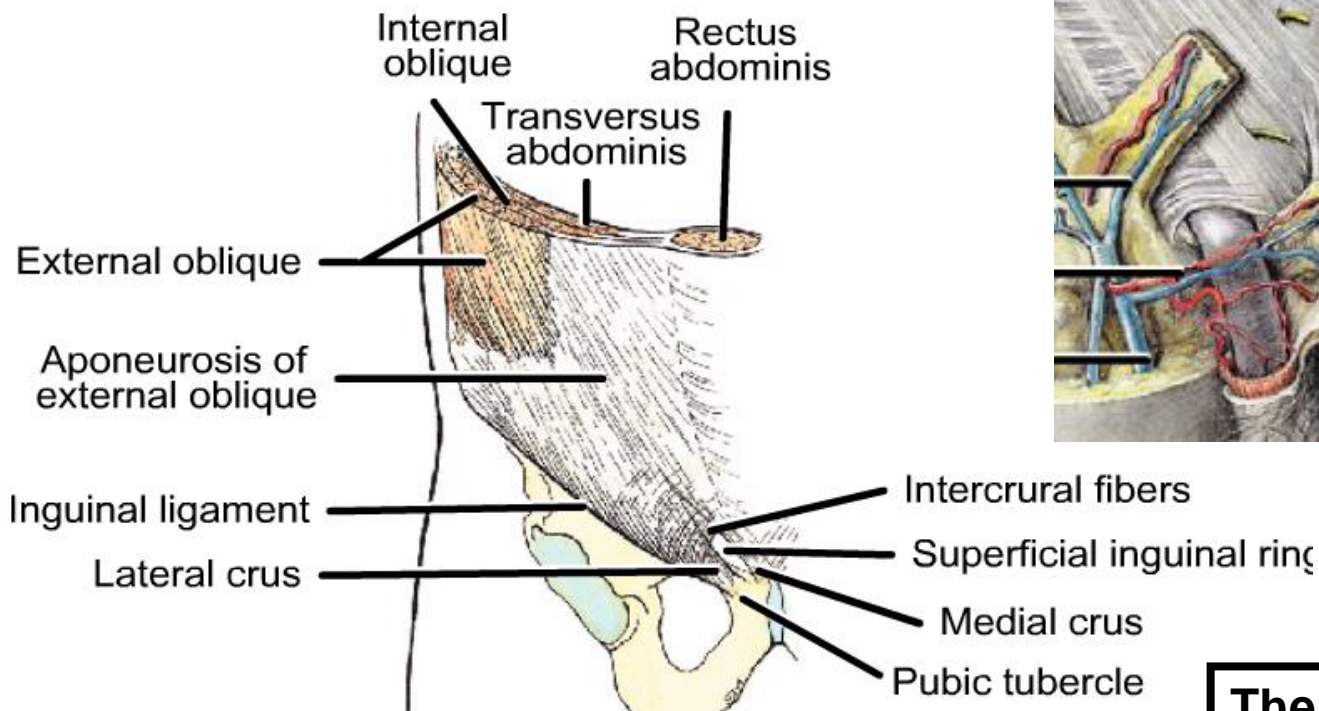
Inguinal canal

- ***1.5 inch(4 cm)***
- ***Oblique passage in lower abdominal wall for structures passes to and from the testis and round ligament of the uterus in the female .***
- ***Deep inguinal ring: half in fascia transversalis***
- ***No canal in child (2 rings apposite each other***

Protrusion of the intestine into the inguinal canal is known as an oblique or indirect inguinal hernia



- Superficial Inguinal Ring:
- - is a hiatus in the aponeurosis, just above and lateral to the tubercle of the pubis. It transmits the spermatic cord in the male, the round ligament of the uterus in the female and the *ilio-inguinal nerve in both*. - somewhat triangular

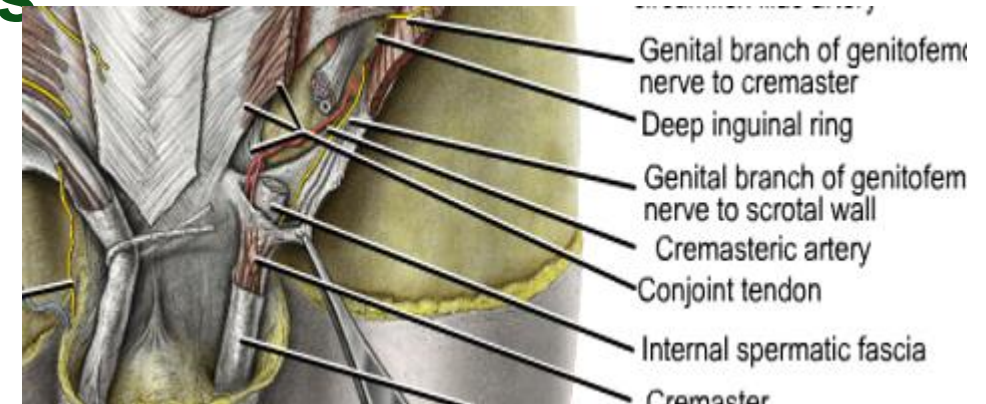


Give attachment to external spermatic fascia, Have two crura

The ring is smaller in the female.

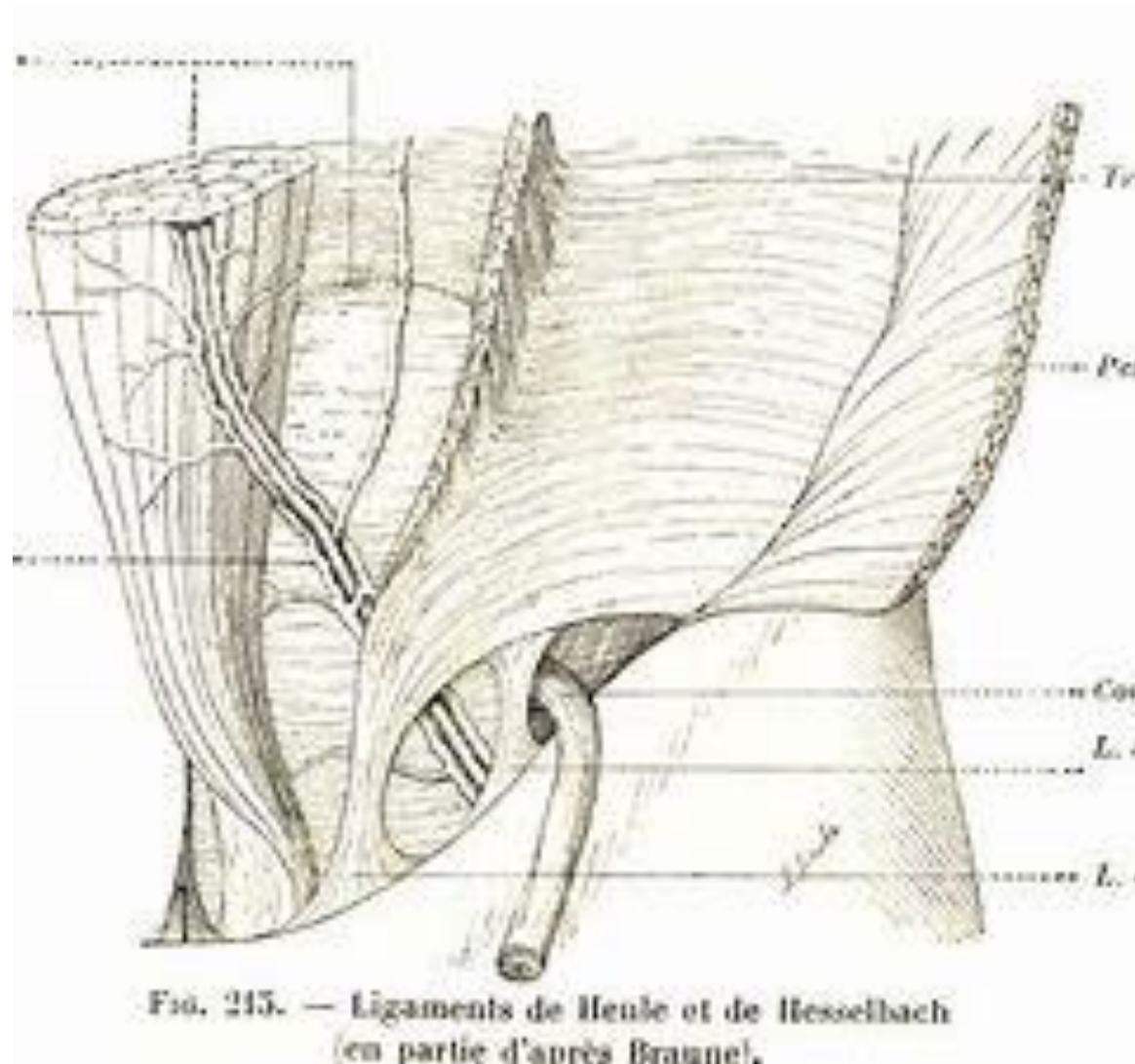
- **Deep inguinal ring :**
- **Oval (0.5) inches (1.3 cm) above inguinal ligament**
- **Give attachment to internal spermatic fascia**
- **midway between the anterior superior iliac spine and the symphysis pubis and about 1.25 cm above the inguinal ligament.**
- **It is related *above to the arched lower margin of transversus abdominis, and medially to the inferior epigastric vessels and the inter foveolar ligament, when present.***

Lateral to the conjoint tendon, previously known as the inguinal aponeurotic falx, there is a ligamentous band originating from the lower margin of the transversalis fascia and extending down in front of the inferior epigastric artery to the superior ramus of the pubis; it is termed the interfoveolar ligament of Hesselbach and sometimes contains a few muscular fibers.

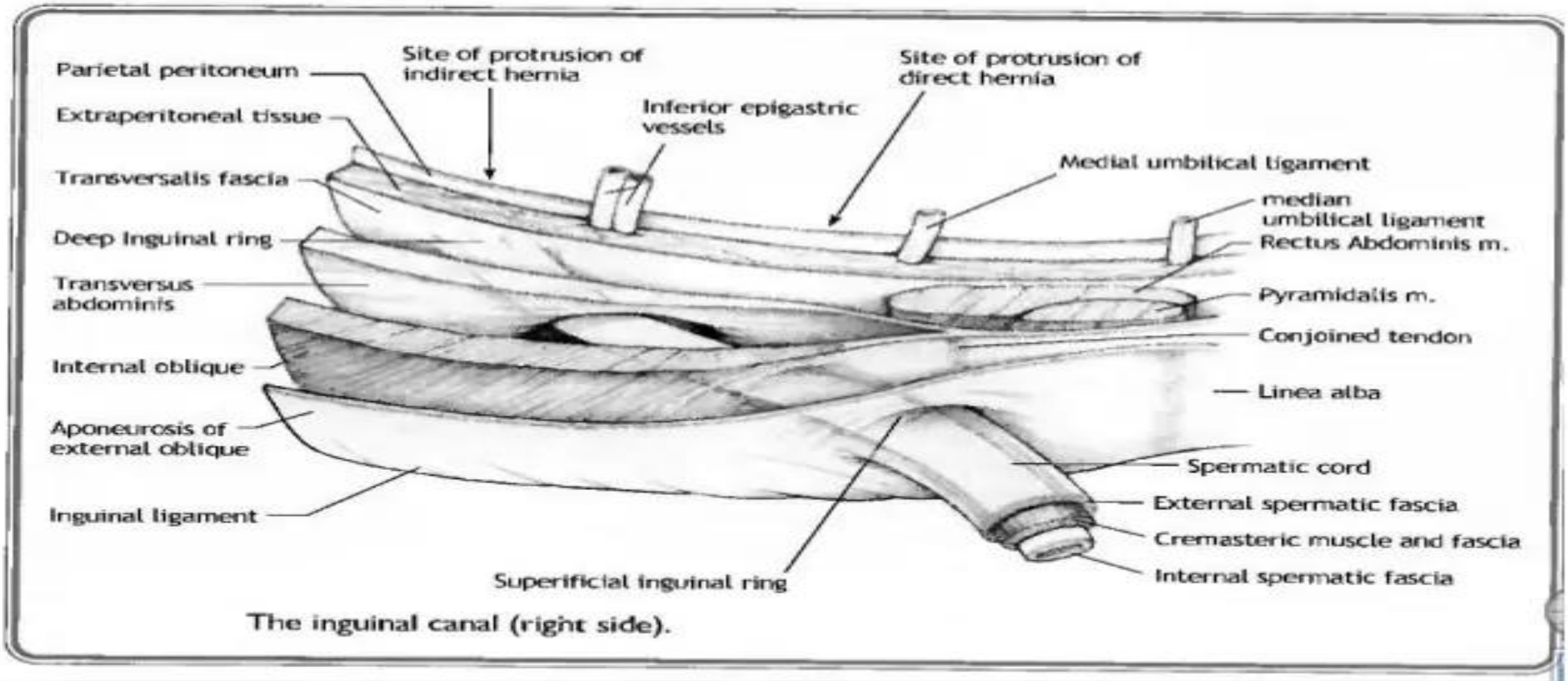


interfoveolar ligament of Hesselbach

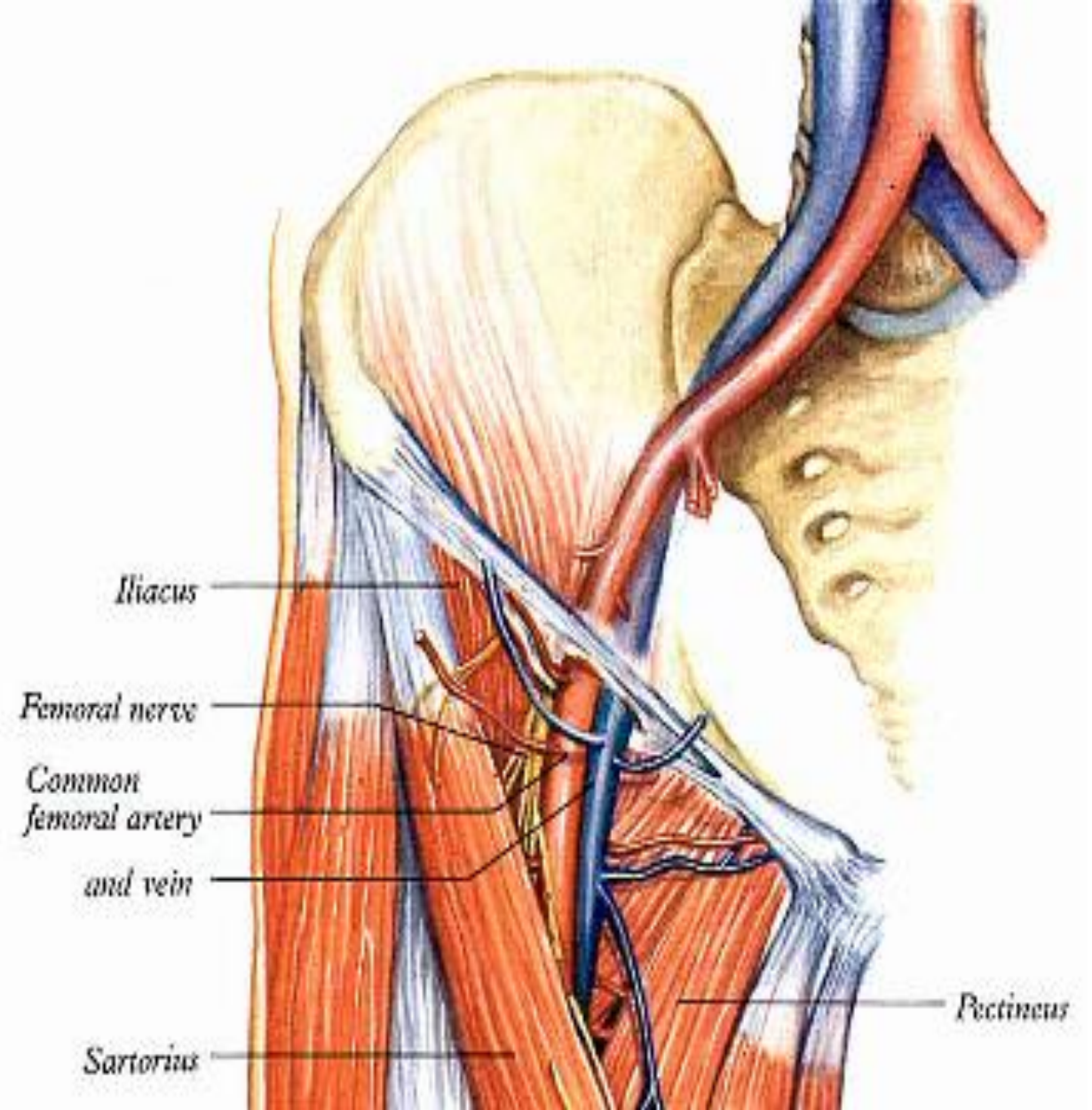
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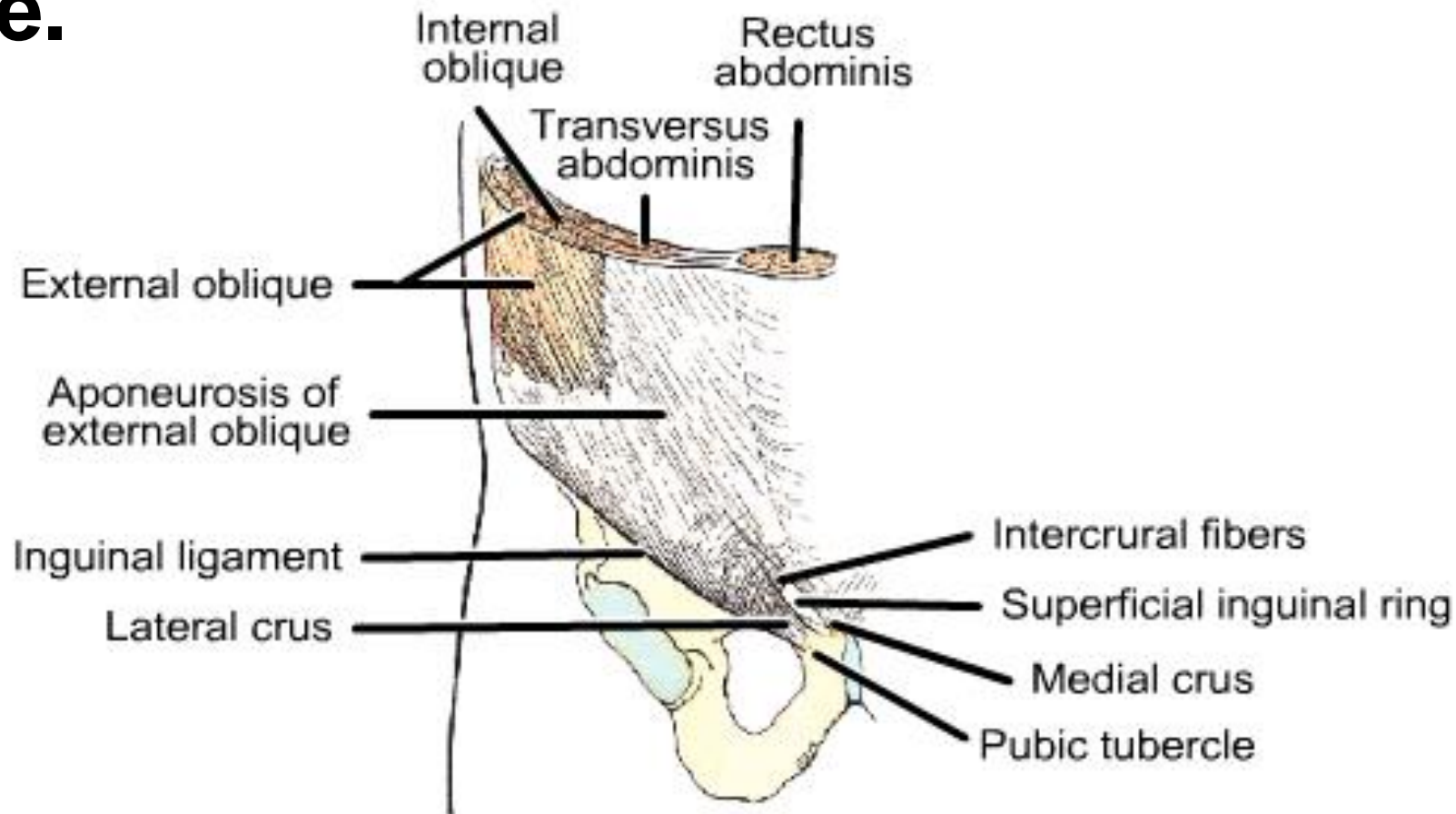
Layers at the inguinal canal



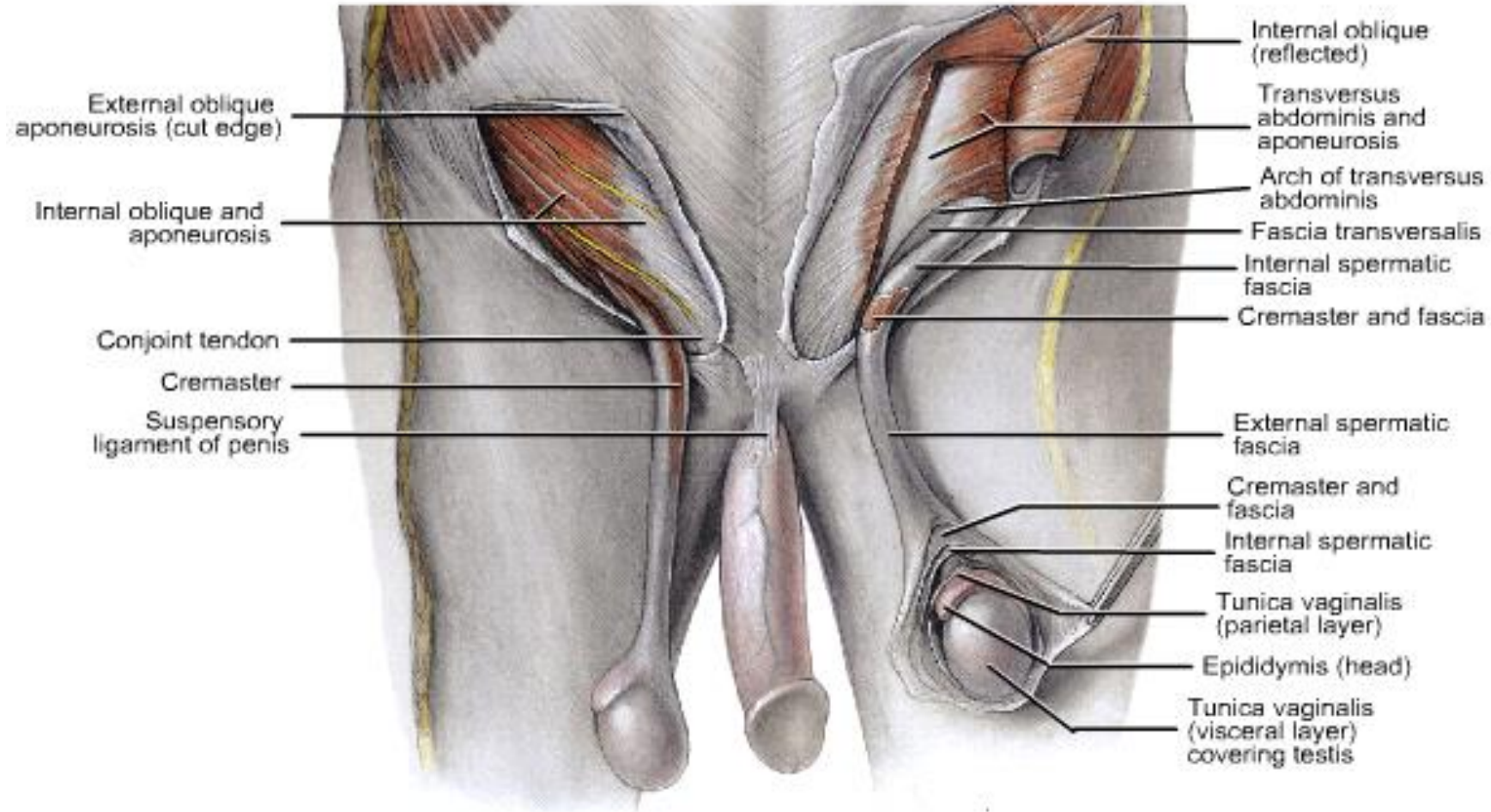
- **Mid inguinal, or Femoral point**
- it marks the position of the femoral pulse,
- continuation of the external iliac artery into the femoral artery,
- deep inguinal ring,
immediately superior to it,
- and it lies just inferior to the origin of the inferior epigastric and the deep circumflex iliac arteries as these arise from the external iliac artery.



superficial inguinal ring. The superficial inguinal ring is an oblique, triangular opening, 2 to 3 cm long; its central point is superior to the pubic tubercle.



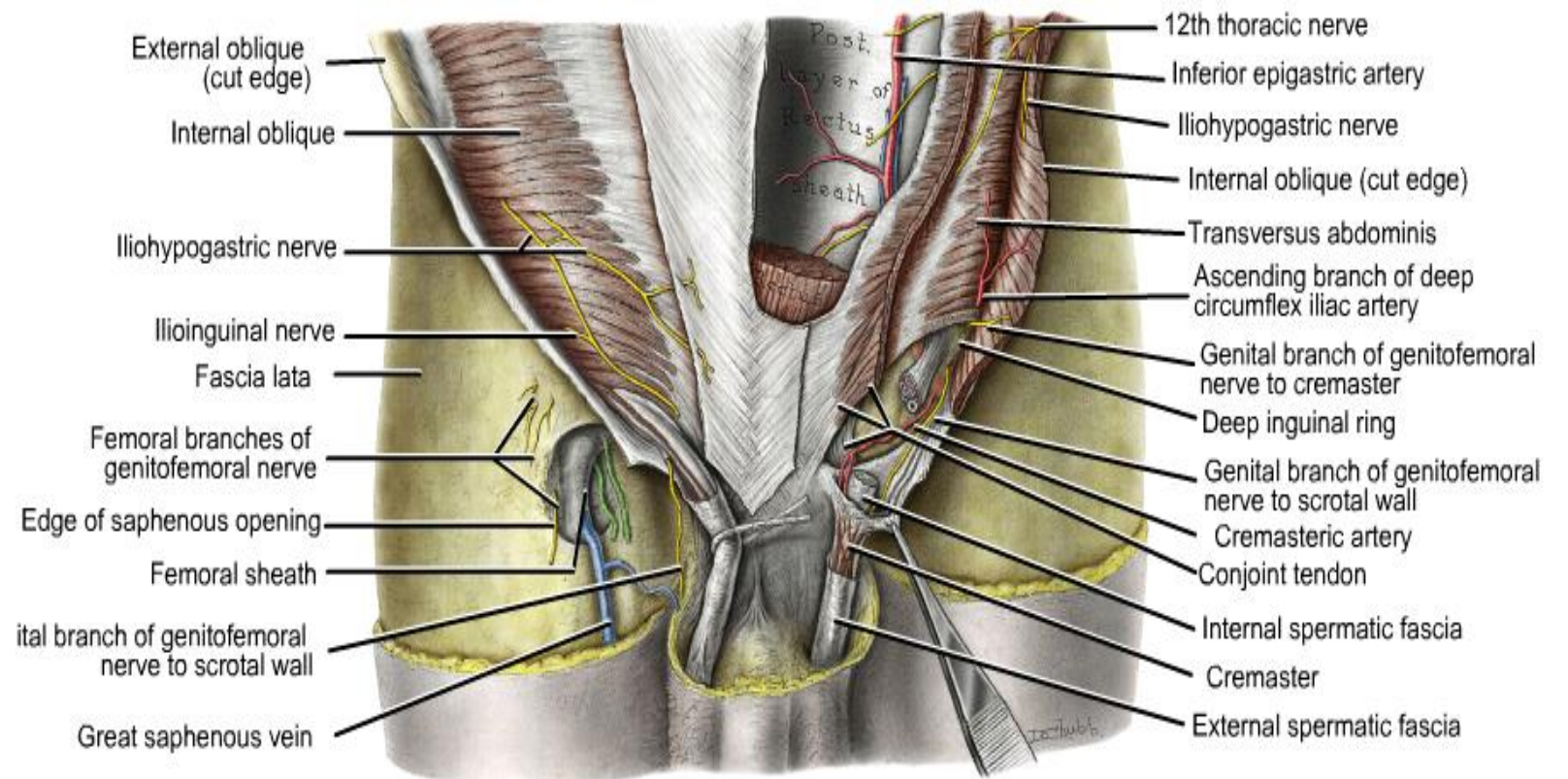
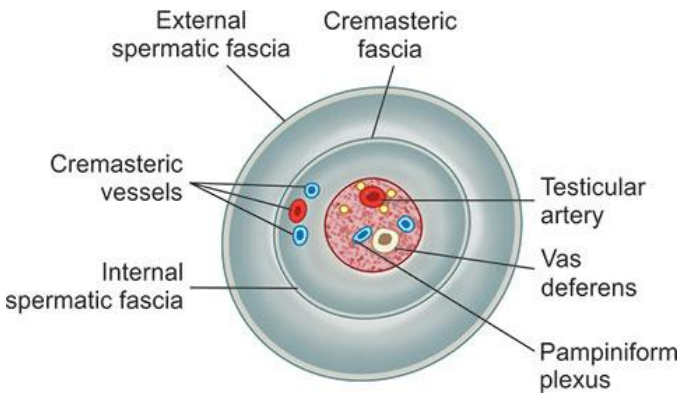
the arch of the transversus abdominis muscle and aponeurosis, laterally, arch superior to the spermatic cord and, medially, terminate posterior to it;



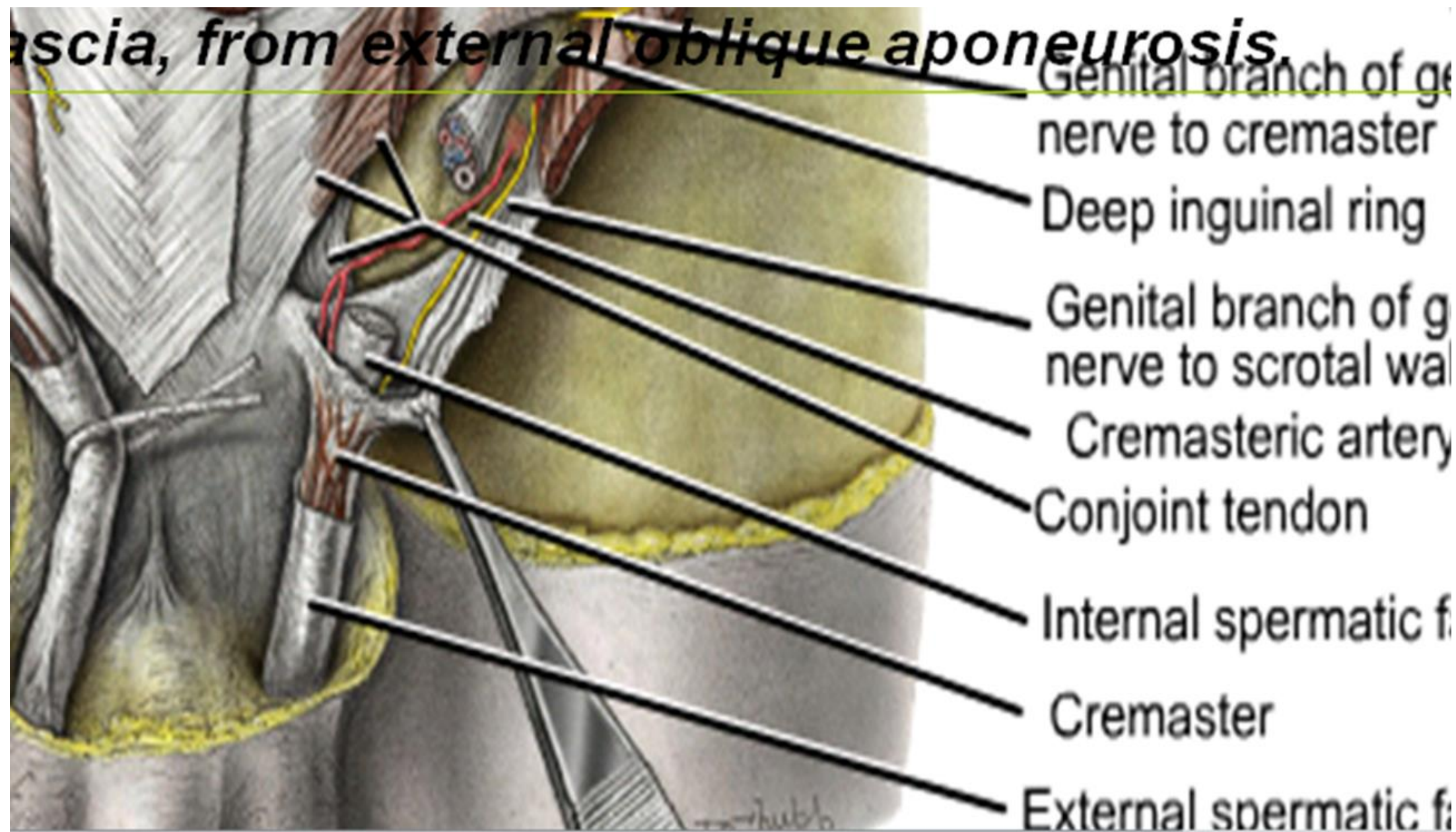
- **Walls of the inguinal canal:**

- anterior:- external oblique aponeurosis, + laterally origin of internal oblique
- Posteriorly:- fascia transversalis , medial third conjoined tendon (int.& Tr)
- Inferiorly: inguinal ligament, lacunars ligament,
- Superiorly : arch of lower fibers of inter oblique + transverse m.

Coverings of the cord: (a) internal spermatic fascia, derived from fascia transversalis; (b) cremaster muscle and fascia, from internal oblique and transversus abdominis; (c) external spermatic fascia, from external oblique aponeurosis.



ascia, from external oblique aponeurosis.



Genital branch of genitofemoral nerve to cremaster

Deep inguinal ring

Genital branch of genitofemoral nerve to scrotal wall

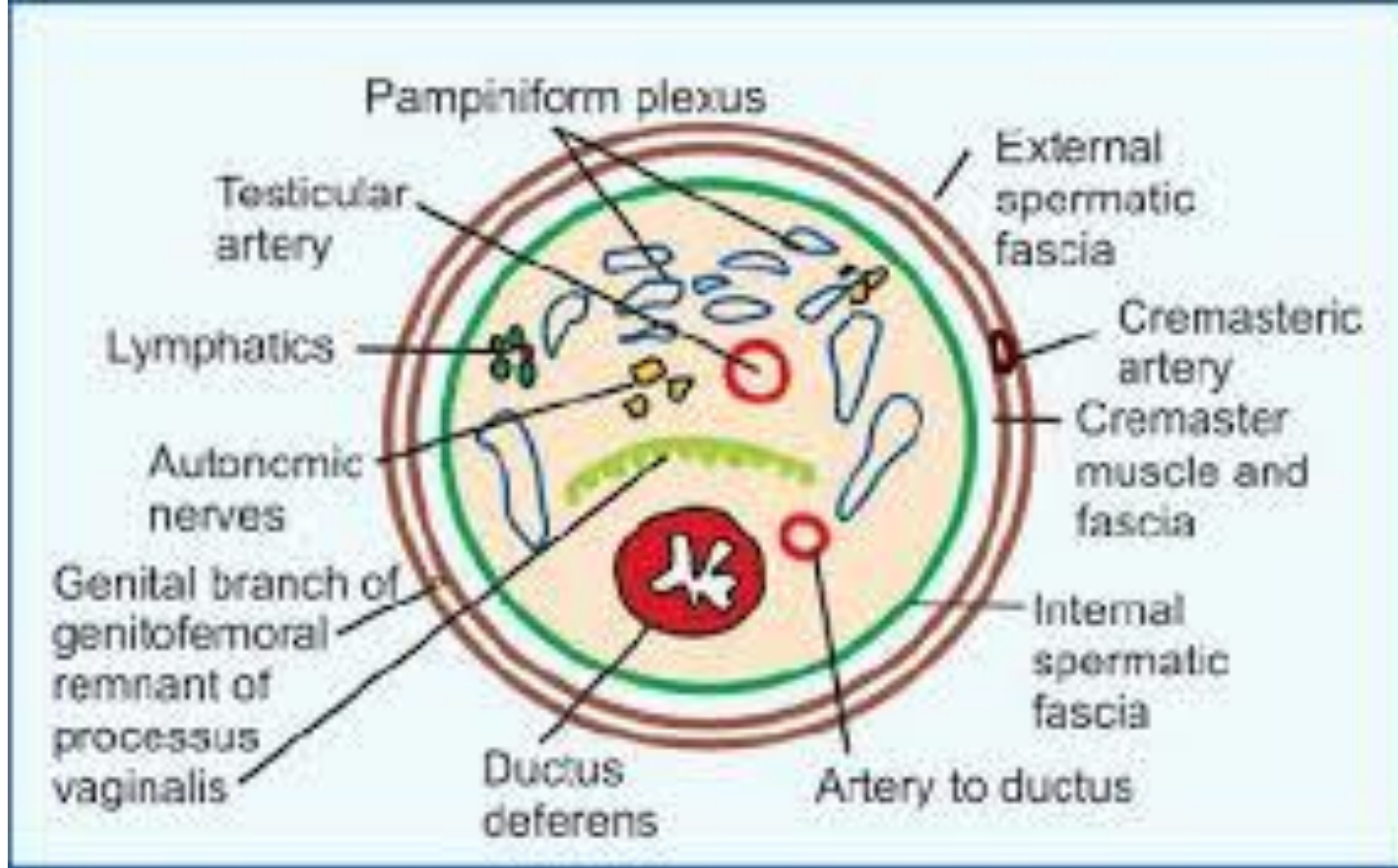
Cremasteric artery

Conjoint tendon

Internal spermatic foramen

Cremaster

External spermatic foramen

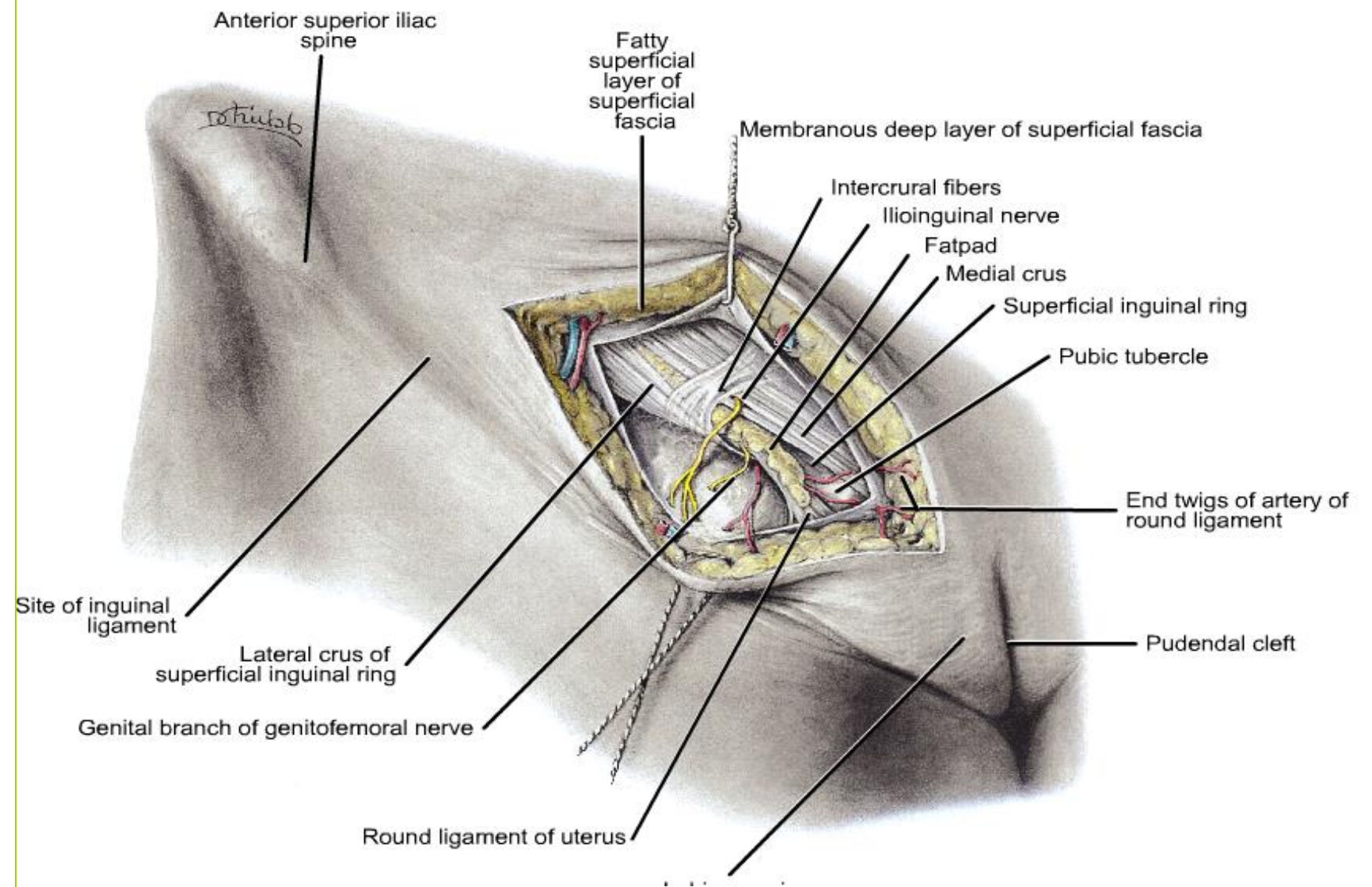


The genital branch crosses the lower part of the external iliac artery, enters the inguinal canal by its deep ring and supplies the cremasteric and the scrotal skin. In females it accompanies the round ligament and ends in the skin of the mons pubis and labium majus.

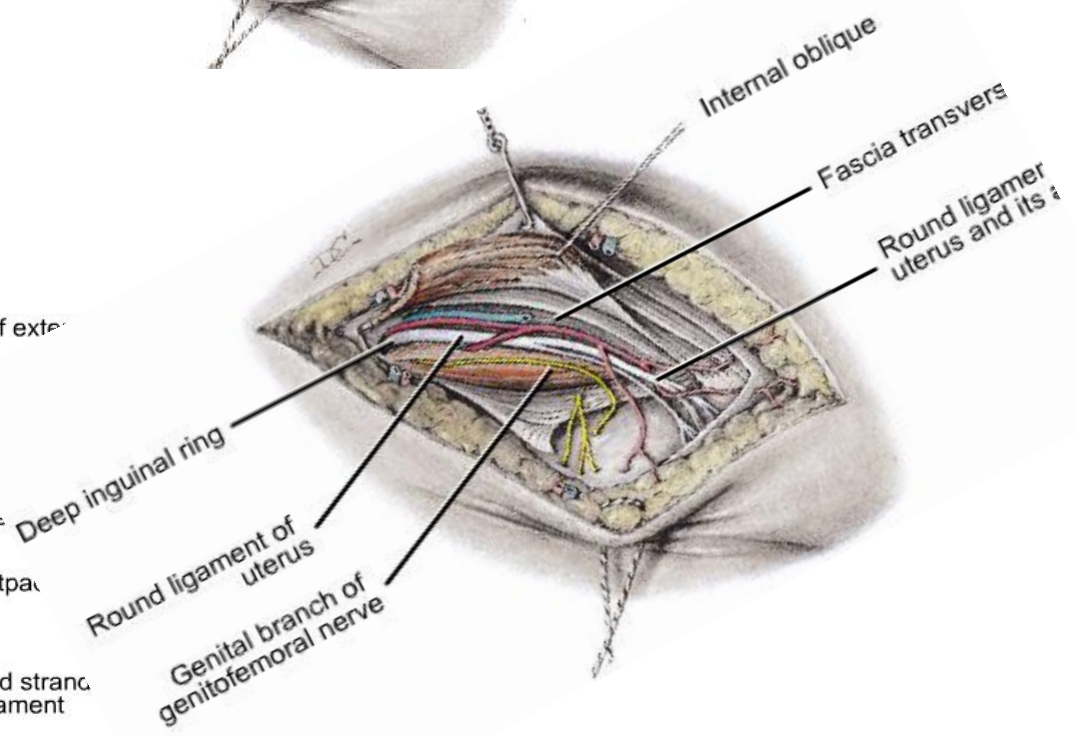
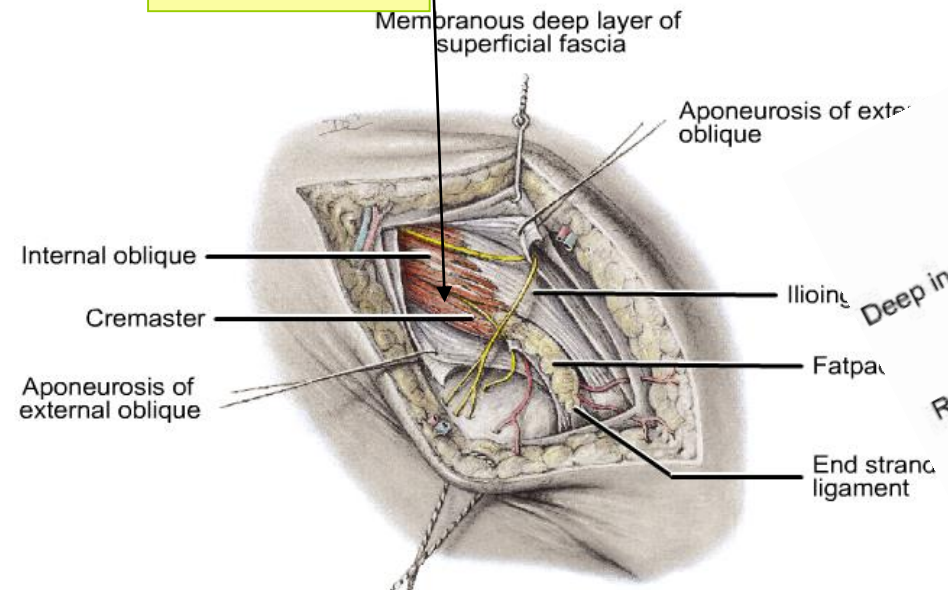
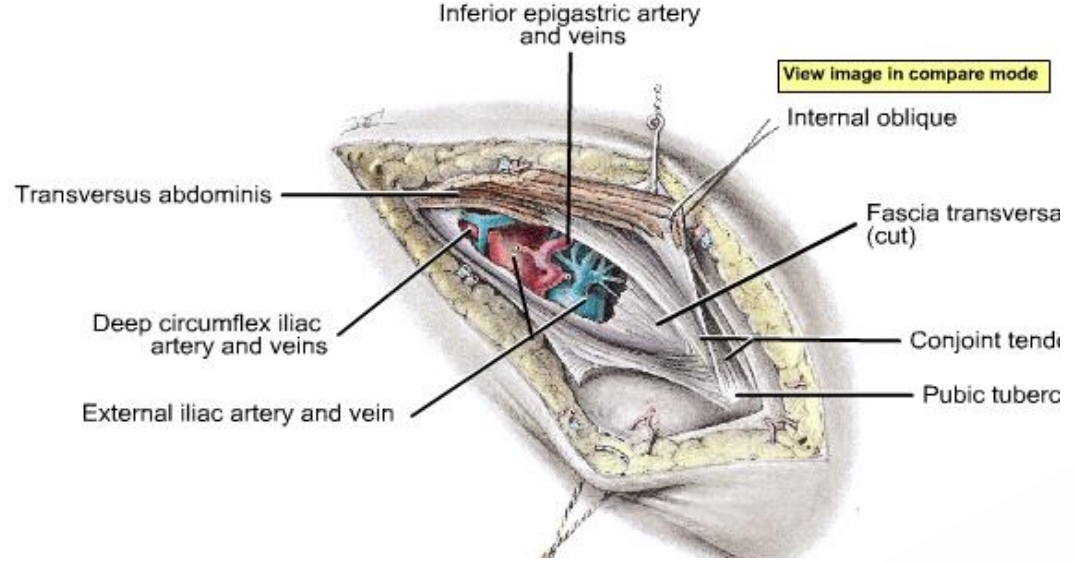


Passing through the **superficial inguinal ring** are:

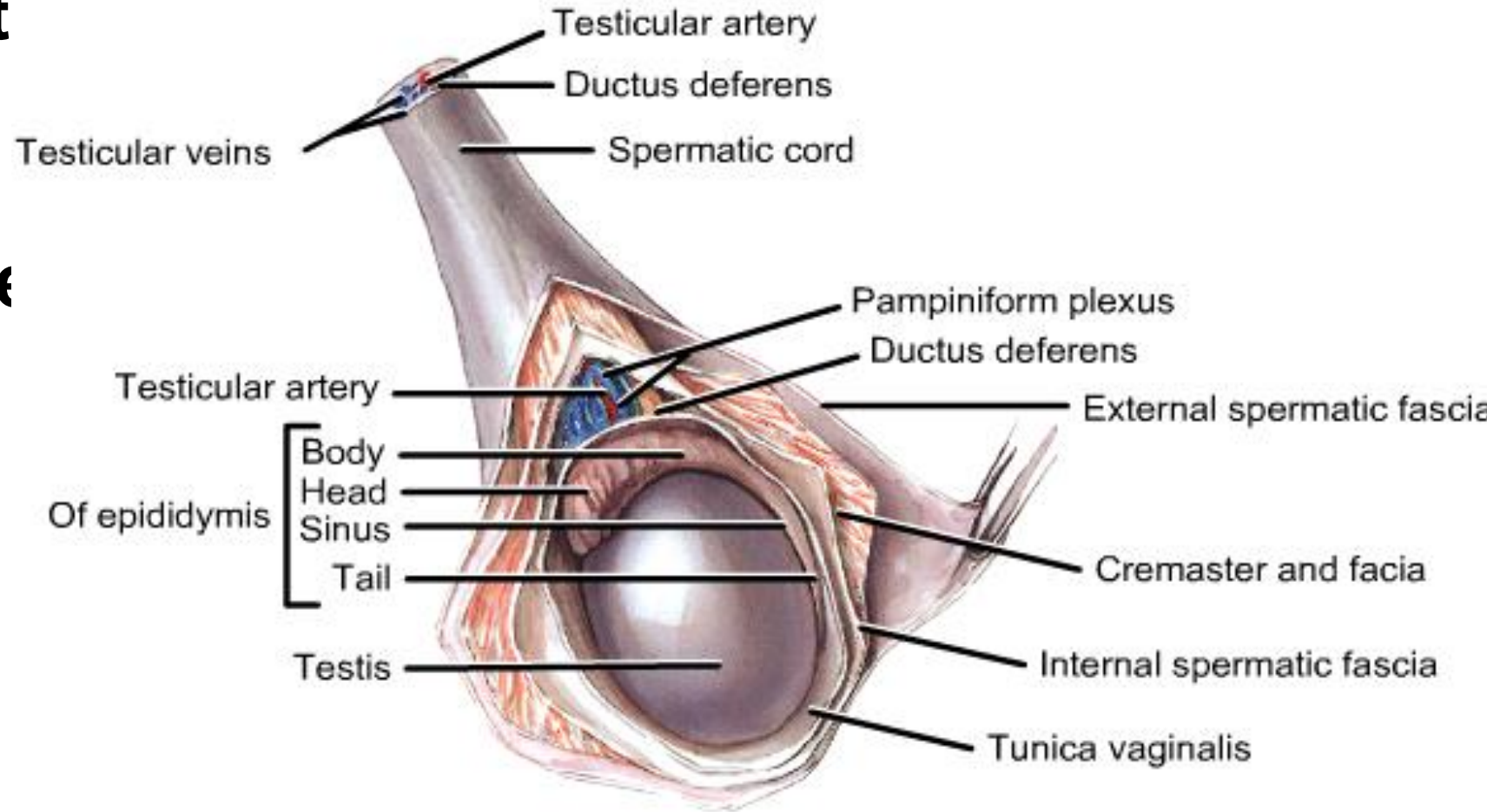
- (a) the round ligament of the uterus,
 - (b) a closely applied fatpad,
 - (c) the genital branch of the genitofemoral nerve, and
 - (d) the artery of the round ligament of the uterus;
- The ilioinguinal nerve perforates the medial crus of the superficial inguinal ring.

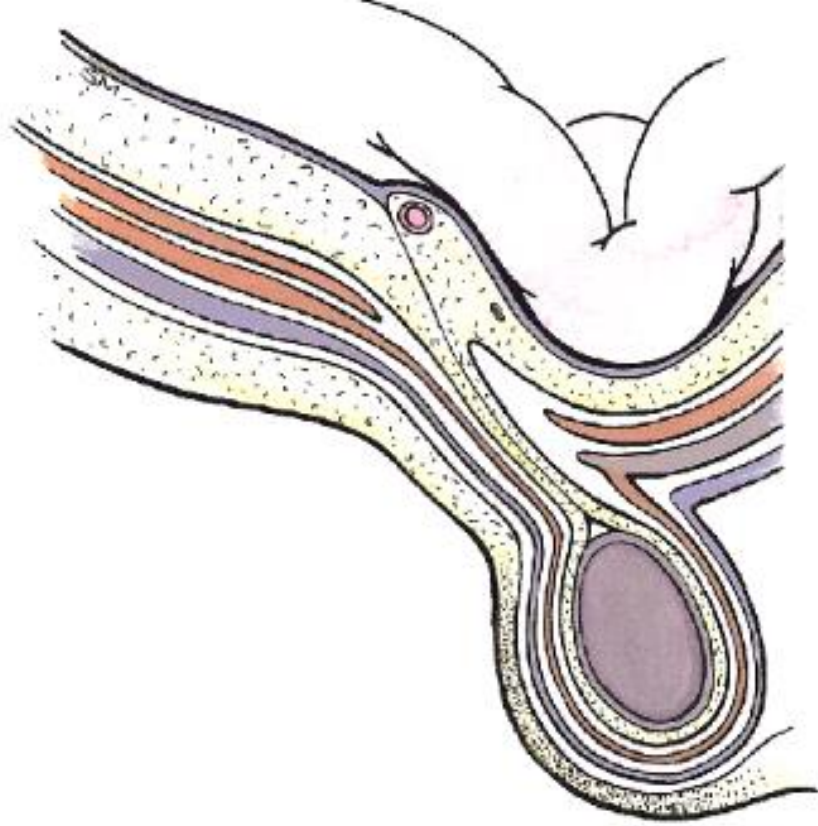


**In females
cremaster
muscle
does not
extend
beyond
the
superficial
inguinal
ring**

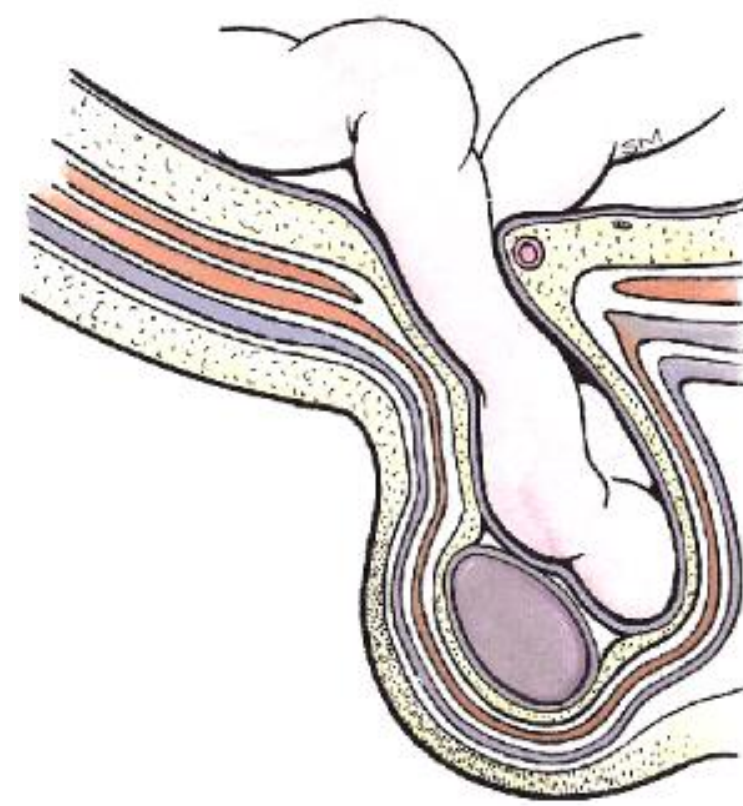


Layers covering the testis have been cut open sequentially: the external spermatic fascia, the cremaster muscle and fascia, the internal spermatic fascia, and the parietal layer of the tunica vaginalis of the testis.



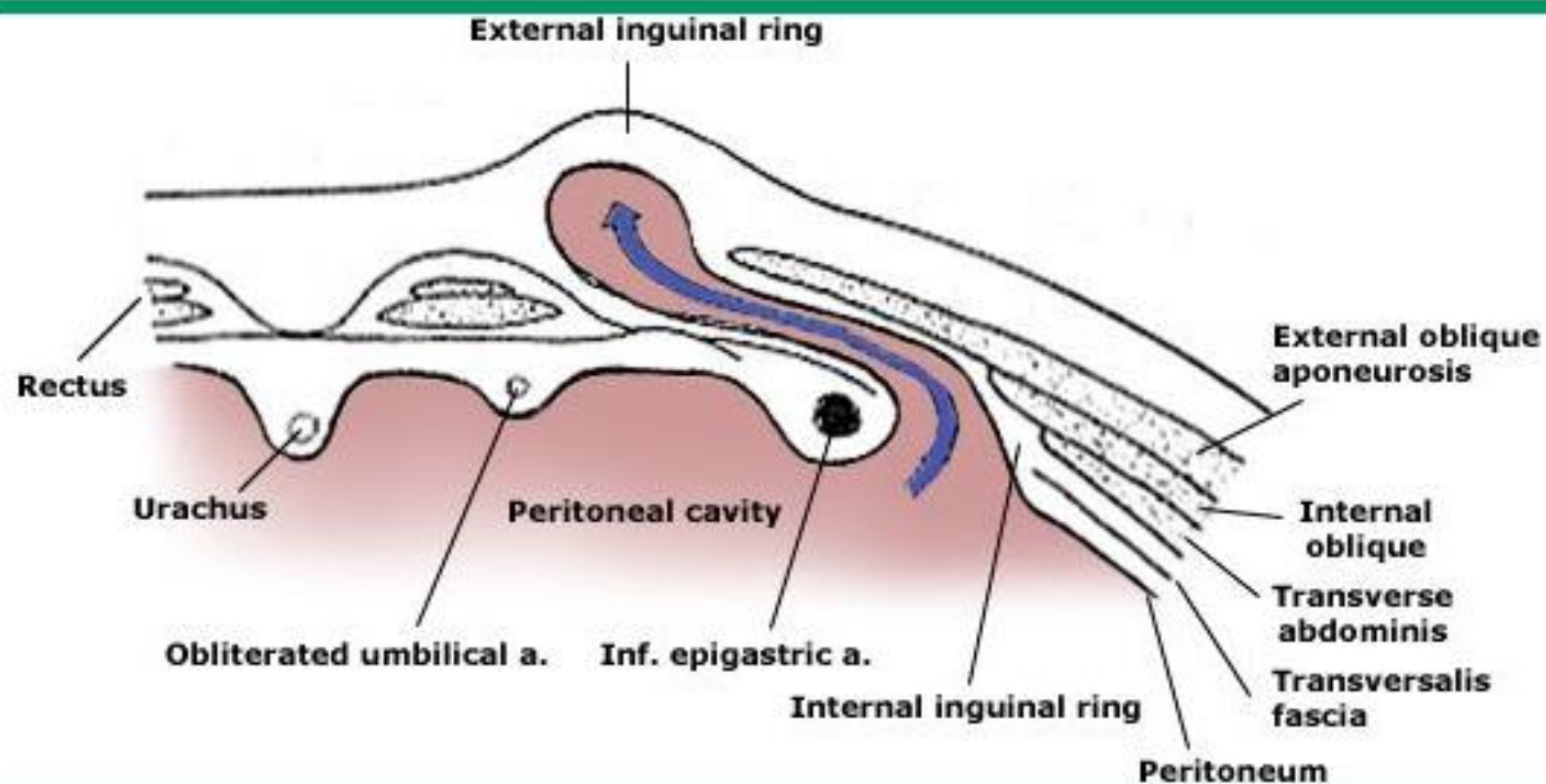


Direct inguinal hernias bulge directly through the abdominal wall, medial to the inferior epigastric artery (C).



indirect inguinal hernia. Schematic horizontal section.

Indirect inguinal hernia



This transverse section of the anterior abdominal wall illustrates the herniation of peritoneal contents into the inguinal canal through the internal inguinal ring, along the course of the spermatic cord.

Adapted from O'Rahilly. Abdominal walls. In: Basic Human Anatomy, W.B. Saunders Company, Philadelphia 1983. p.230.