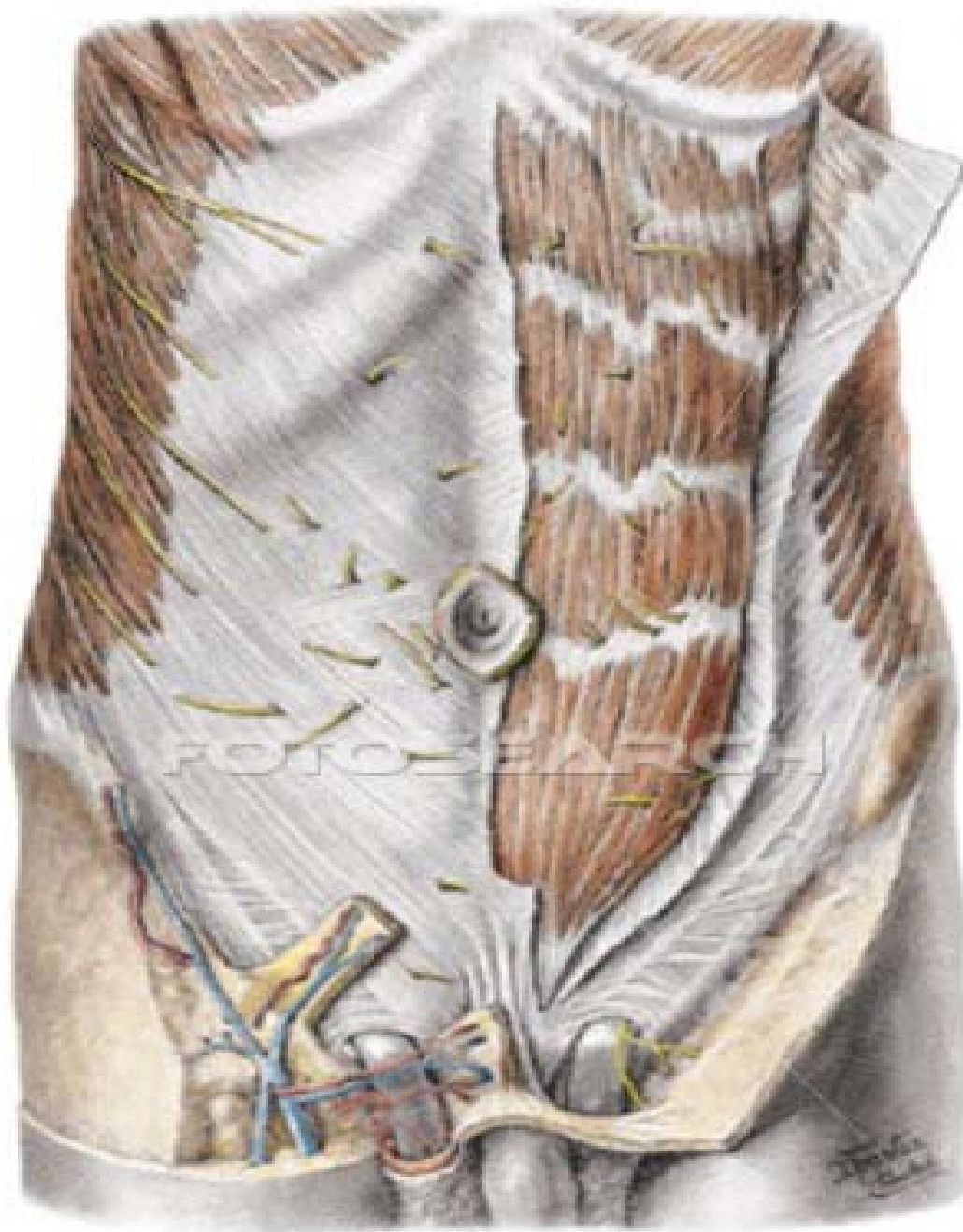


Inguinal region or groin

- extends between ASIS and pubic tubercle
- important anatomically and clinically
- anatomically : structures **exit and enter** abdominal cavity
- clinically: potential sites of **herniation**

All images are kept for educational purpose only



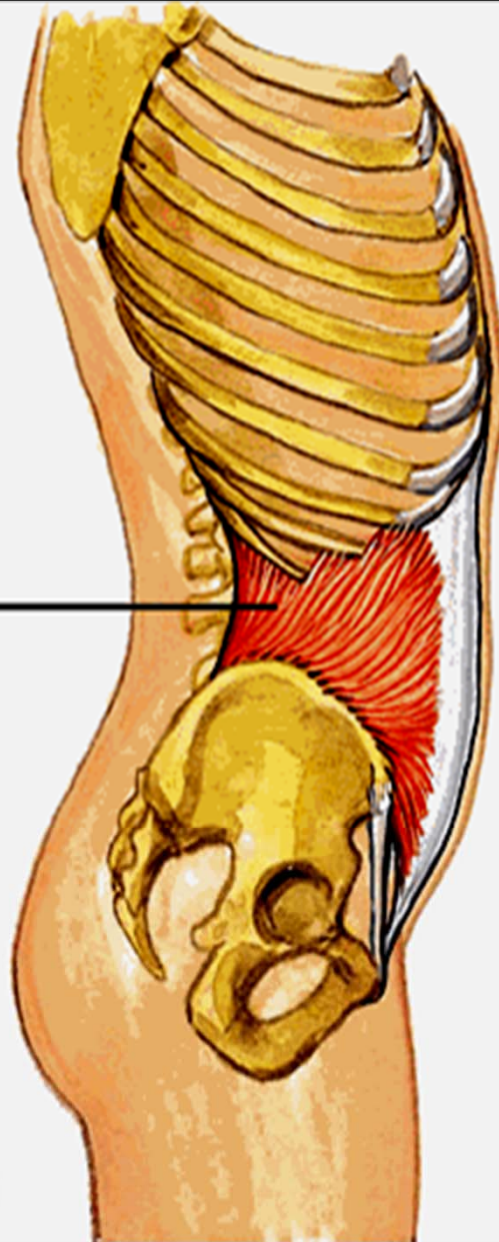
Abdominal muscles

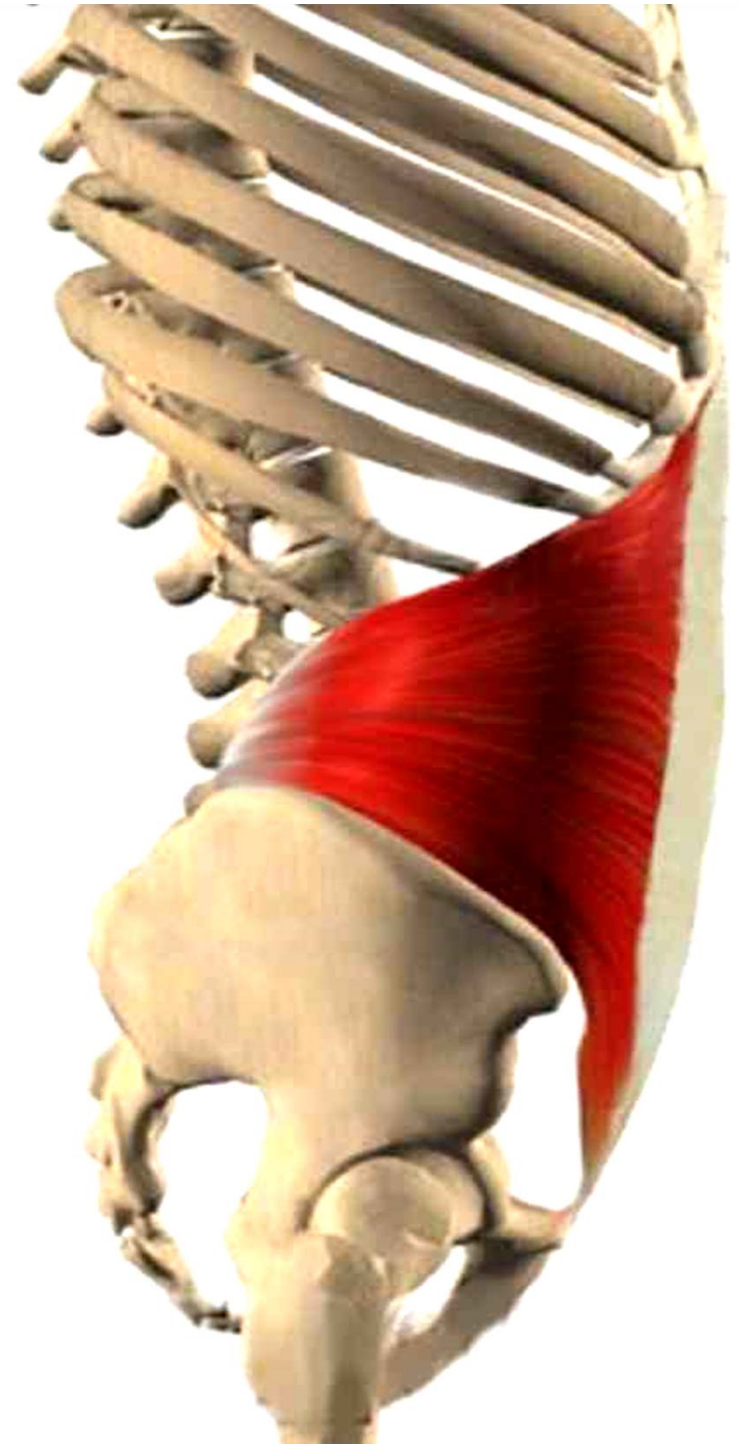
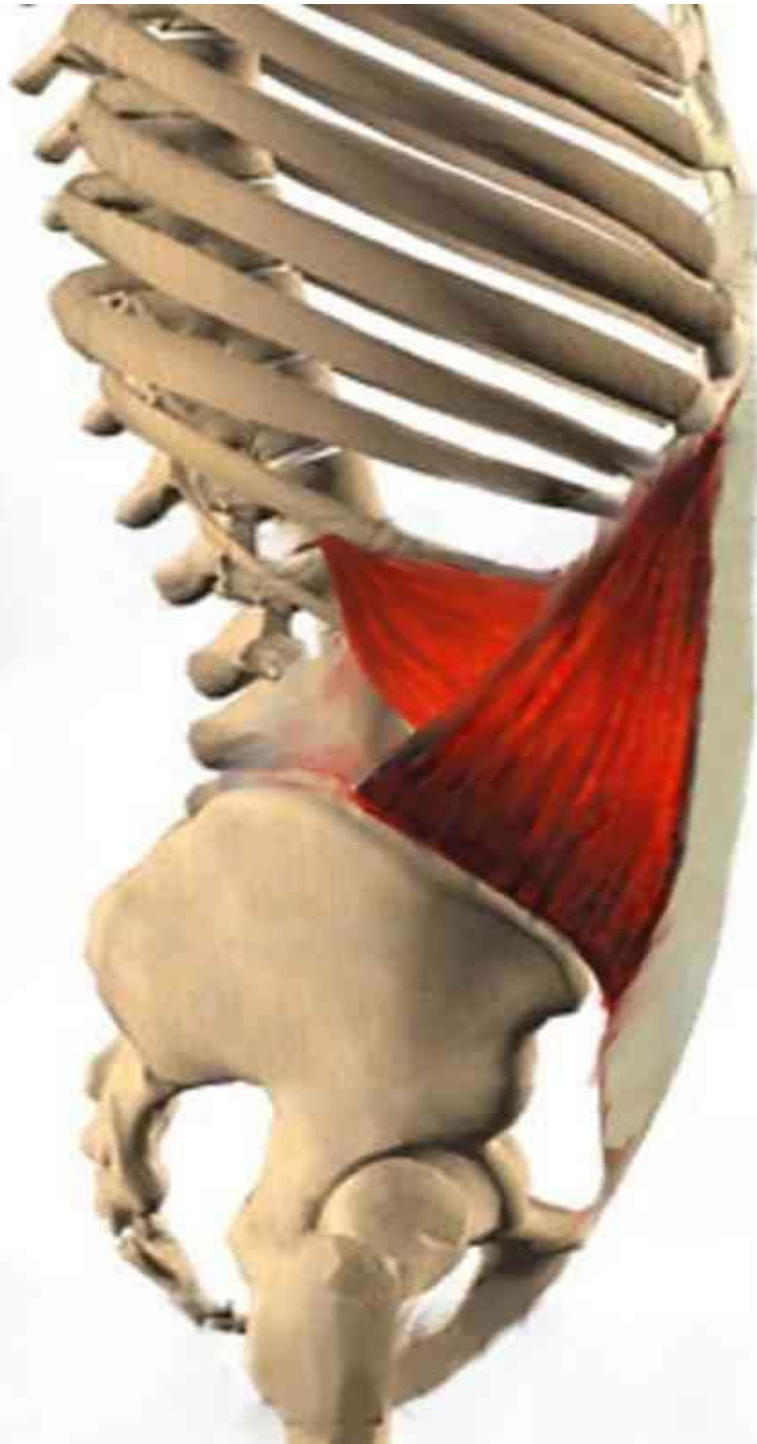
- external oblique
- internal oblique
- transversus abdominis

Abdominal Wall Muscles (3)

Internal oblique

(c)





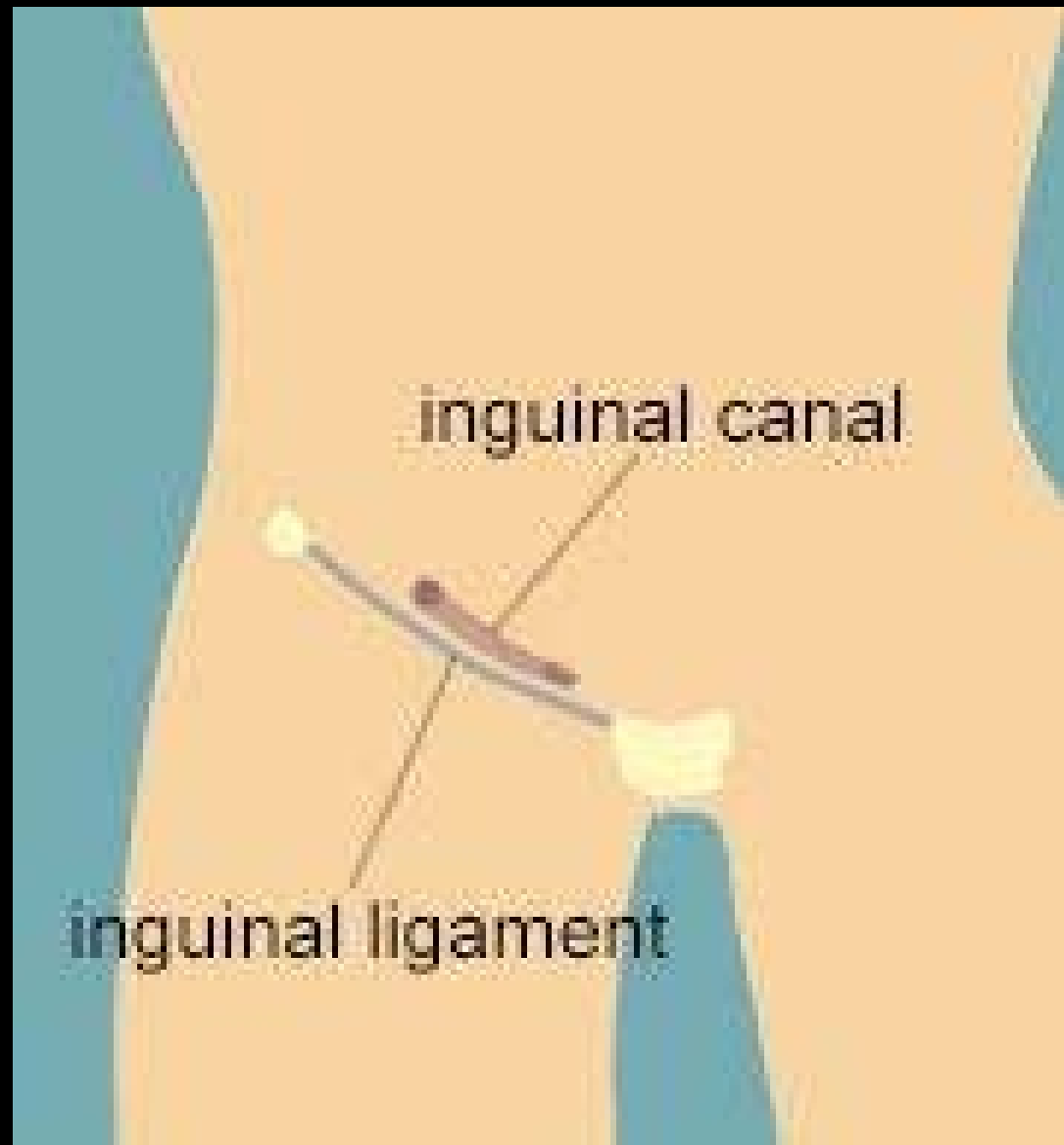
Inguinal ligament(Poupart's ligament)

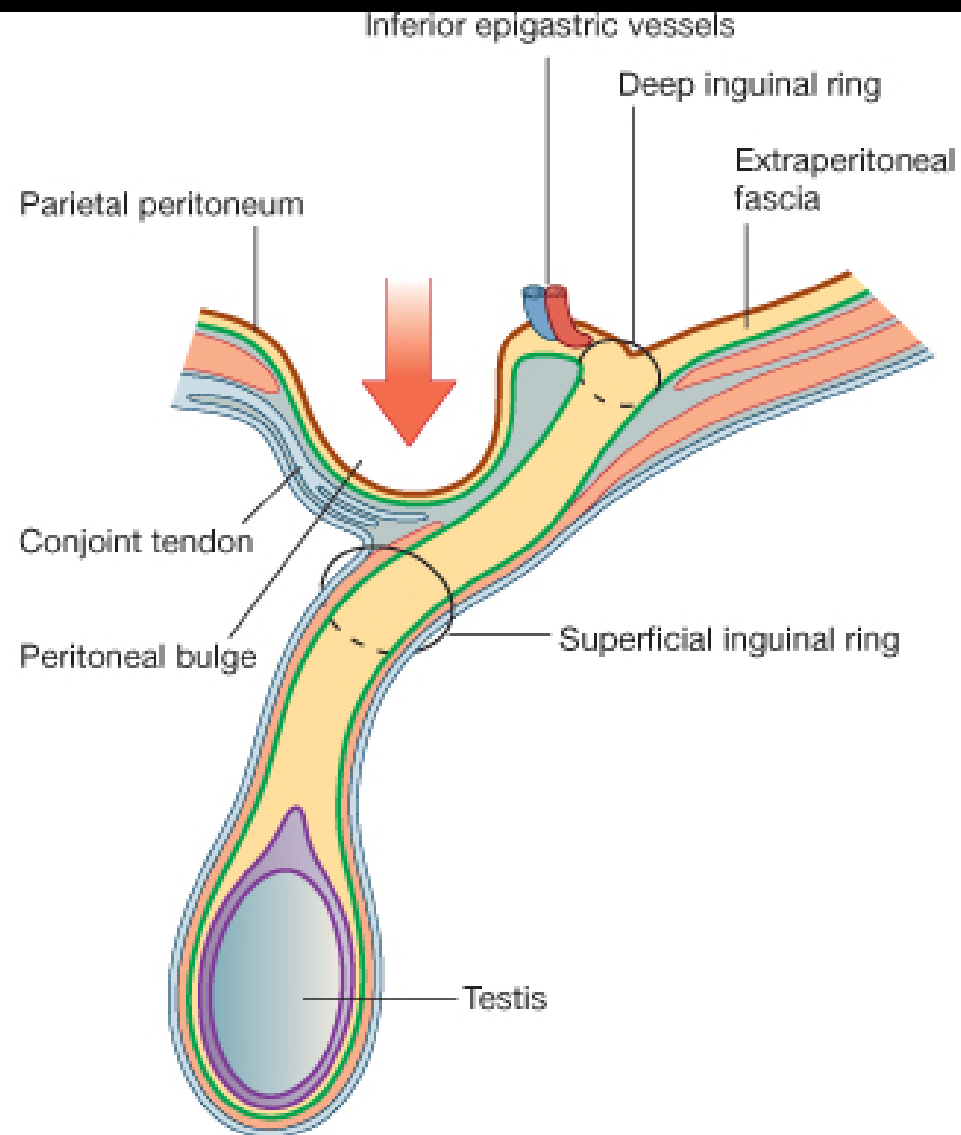
- conjoint tendon(falx inguinalis)
- lacunar ligament(of Gimbernat)
- reflected part of inguinal ligament
- inter-crural fibers
- pectineal ligament(Cooper)

Inguinal canal

- musculo-aponeurotic tunnel
- 4 cm in length
- extending from superficial to deep inguinal rings
- directed downwards, forwards and medially
- above and parallel with the inguinal ligament
- IS FORMED IN RELATION TO THE RELOCATION OF THE TESTIS DURING FETAL DEVELOPMENT
- peculiarities:
- Normally collapsed antero-posteriorly.

location



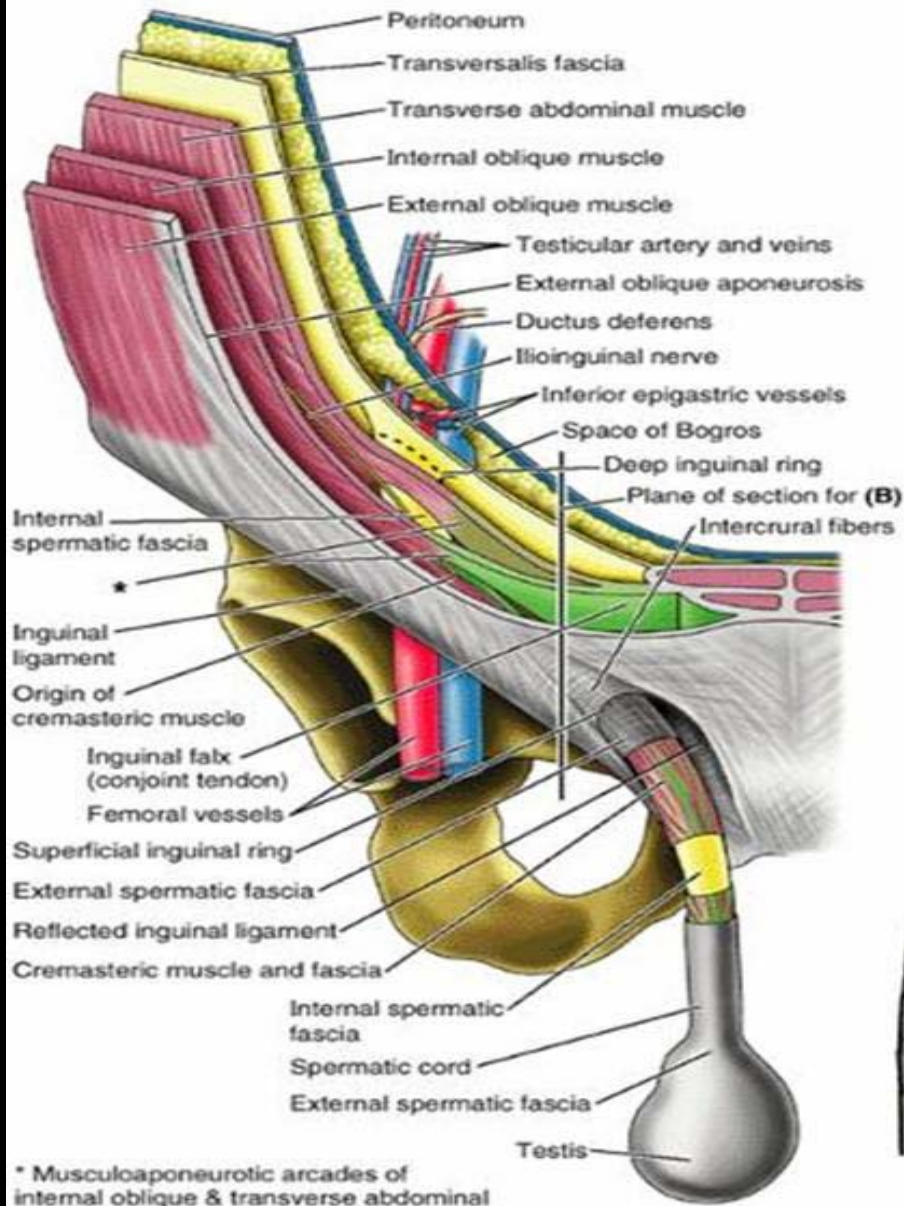


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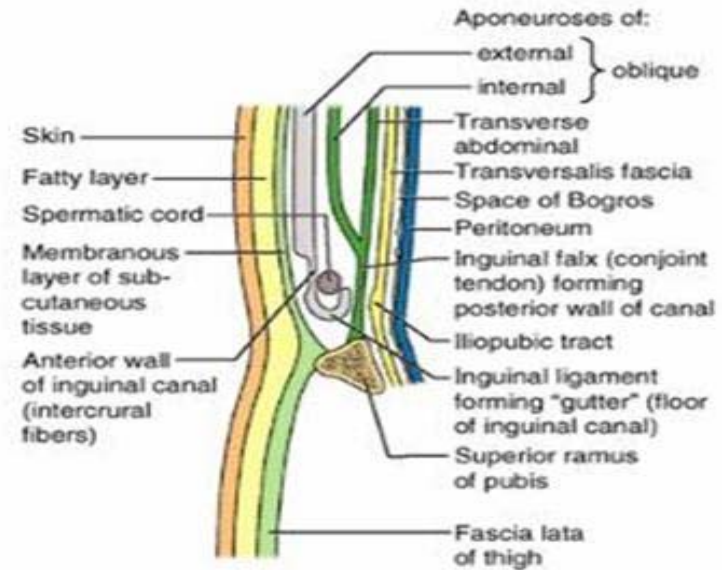
- entire content:
- partial content:

boundaries

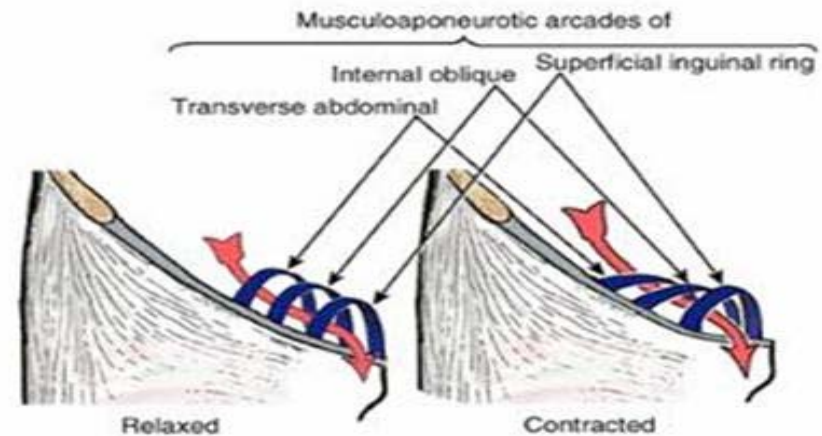
- anterior wall
- posterior wall
- roof
- floor
- inlet
- outlet



(A) Anterior view



(B) Schematic sagittal section

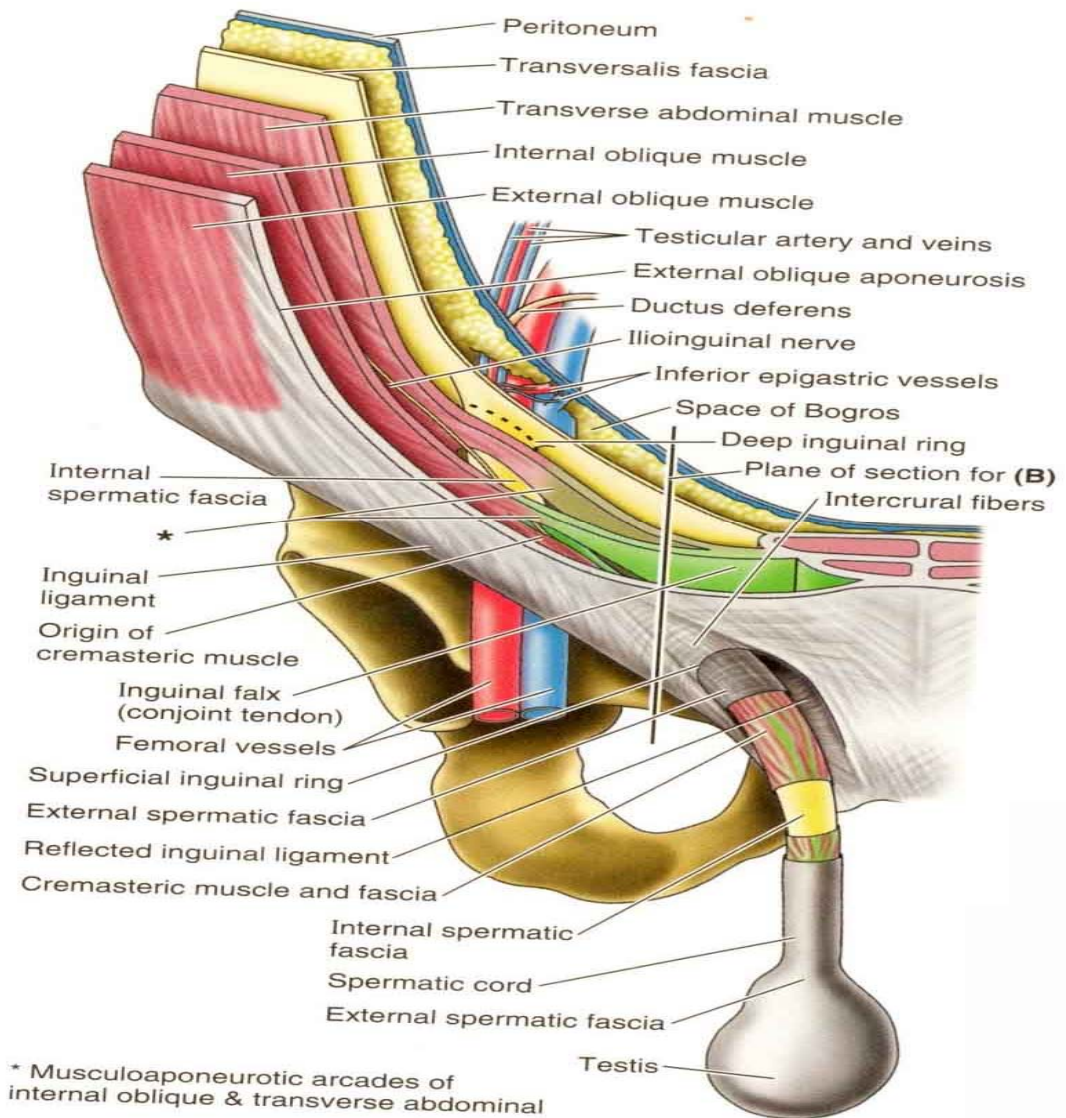


(C) Anterior view

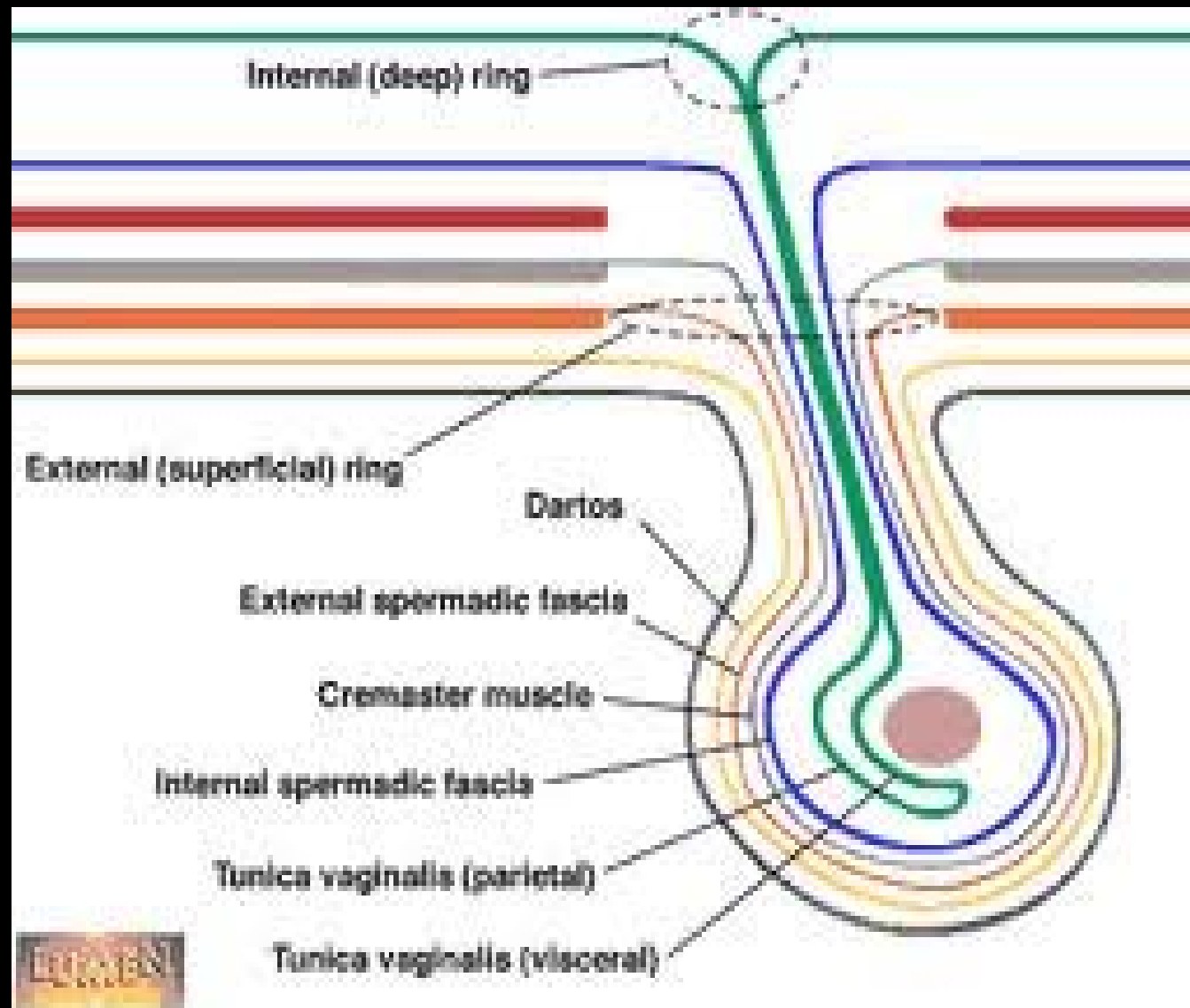
Inlet outlet

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2 / ABDOMEN



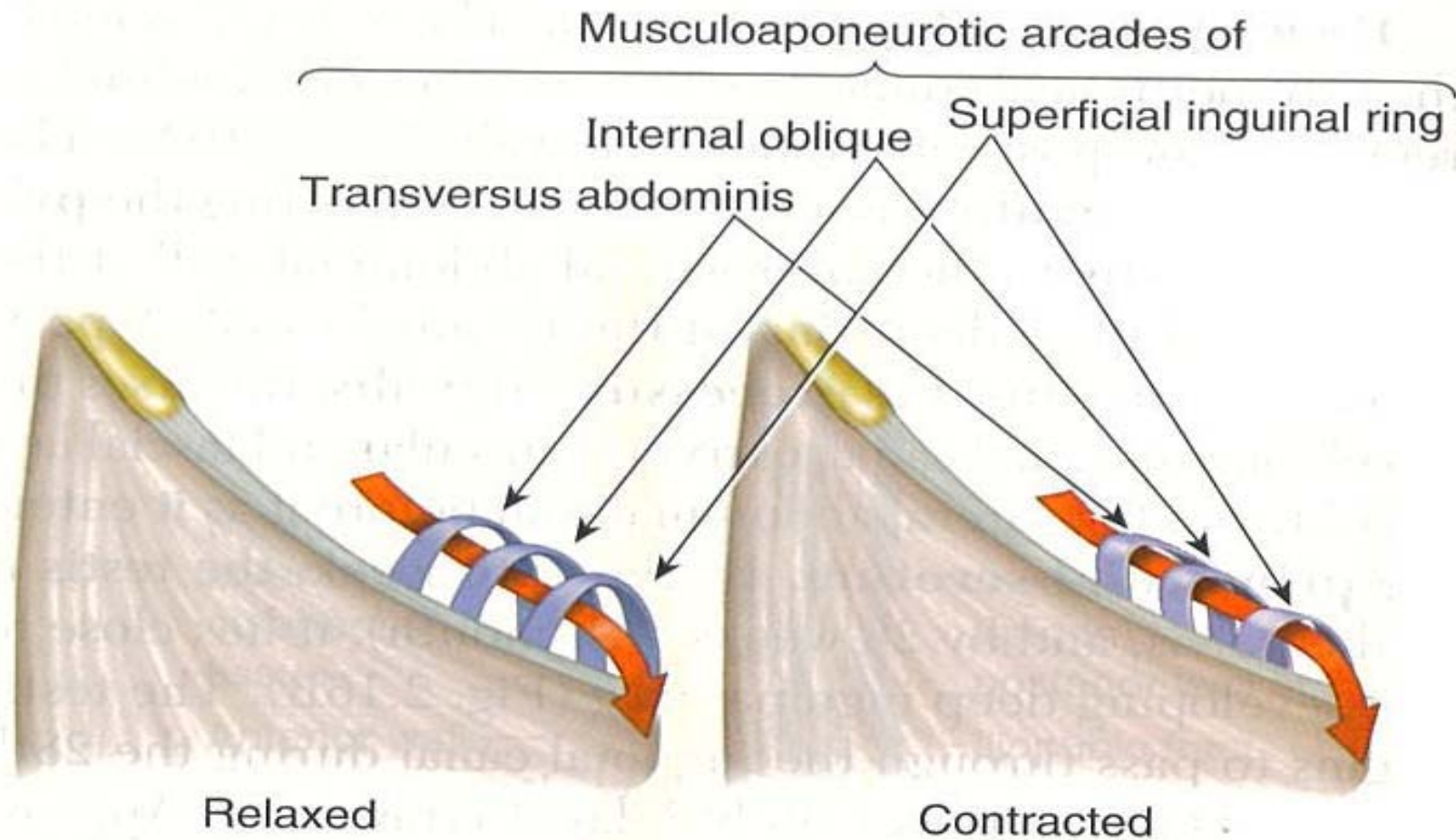
(A) Anterior view



Defensive mechanism of inguinal canal

- flap valve mechanism
- slit valve mechanism : intercrural fibers
- shutter mechanism(demi-sphincters)
- ball valve mechanism
- guarding mechanism : walls are strengthened by:
 - pulling up of deep ring when abdominal muscles contract

Shutter mechanism



Development of canal

- the inguinal canal is formed in relation to relocate testes during foetal development
- gubernaculum: *scrotal ligament
 - *round ligament of uterus
- processus vaginalis : a peritoneal diverticulum

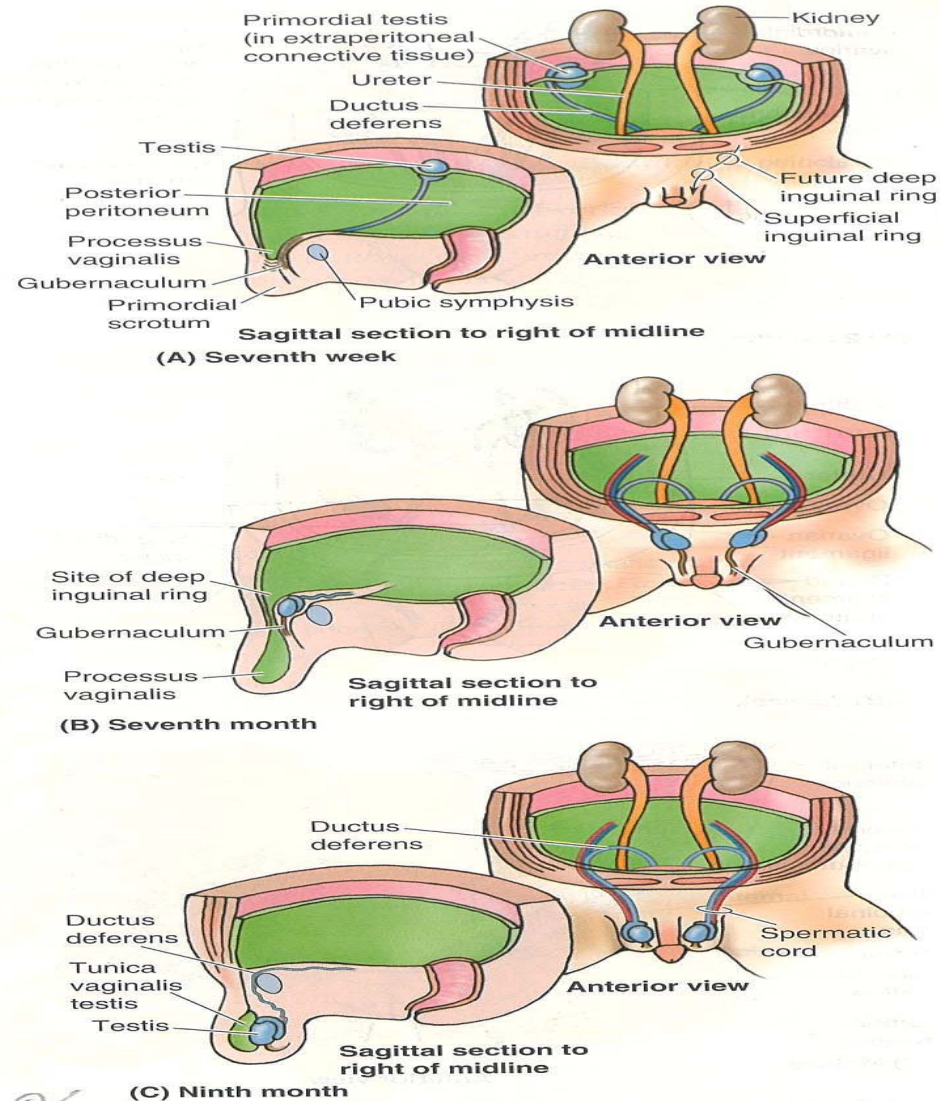
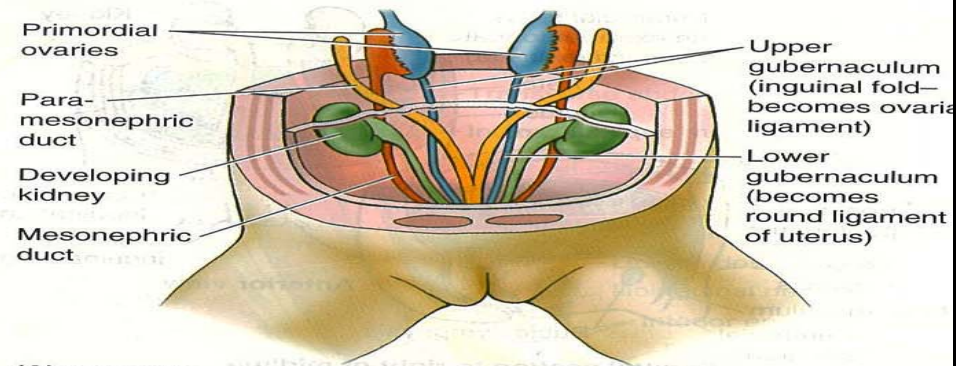
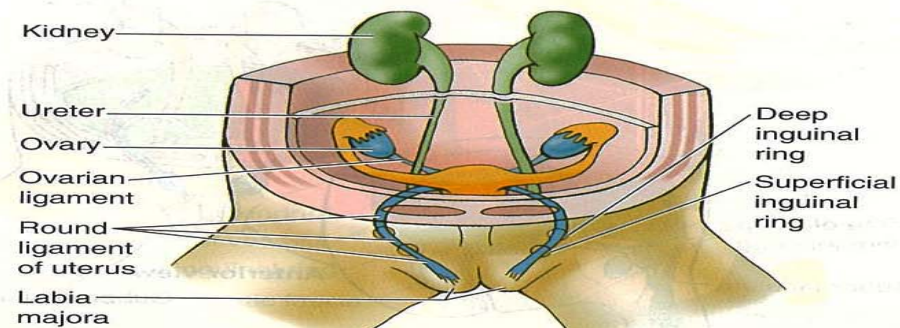


FIGURE 2.16. Formation of inguinal canals and relocation of testes.

A. In a 7-week embryo, the testis is attached to the posterior abdominal wall. **B.** A fetus at 28 weeks (seventh month) shows the processus vaginalis and testis passing through the inguinal canal. The testis passes posterior to the processus vaginalis, not through it. **C.** In a newborn infant, obliteration of the stalk of the processus vaginalis has occurred. The remains of the processus vaginalis have formed the tunica vaginalis of the testis. The remnant of the gubernaculum has disappeared.



(A) 2 months



(B) 15 weeks

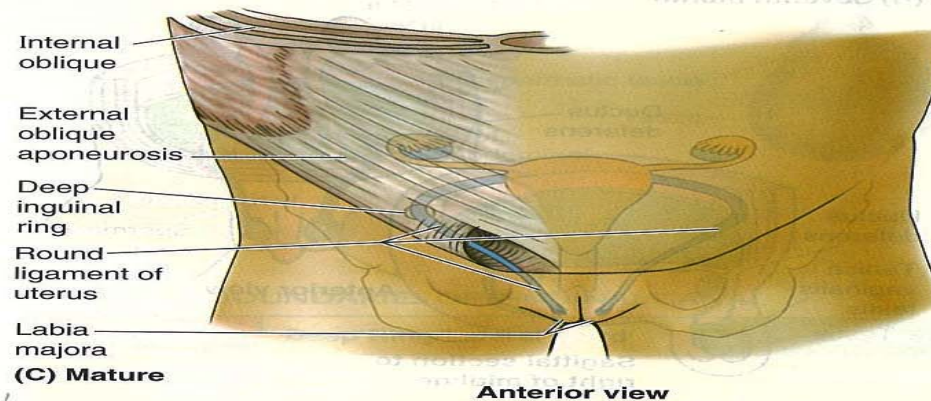
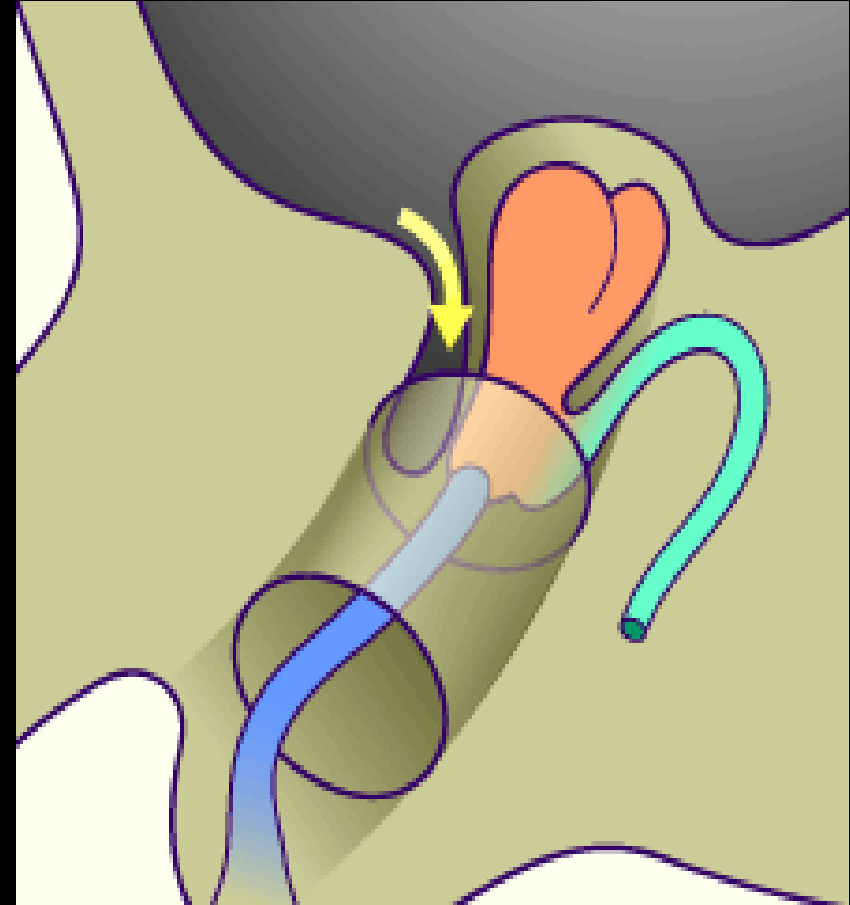
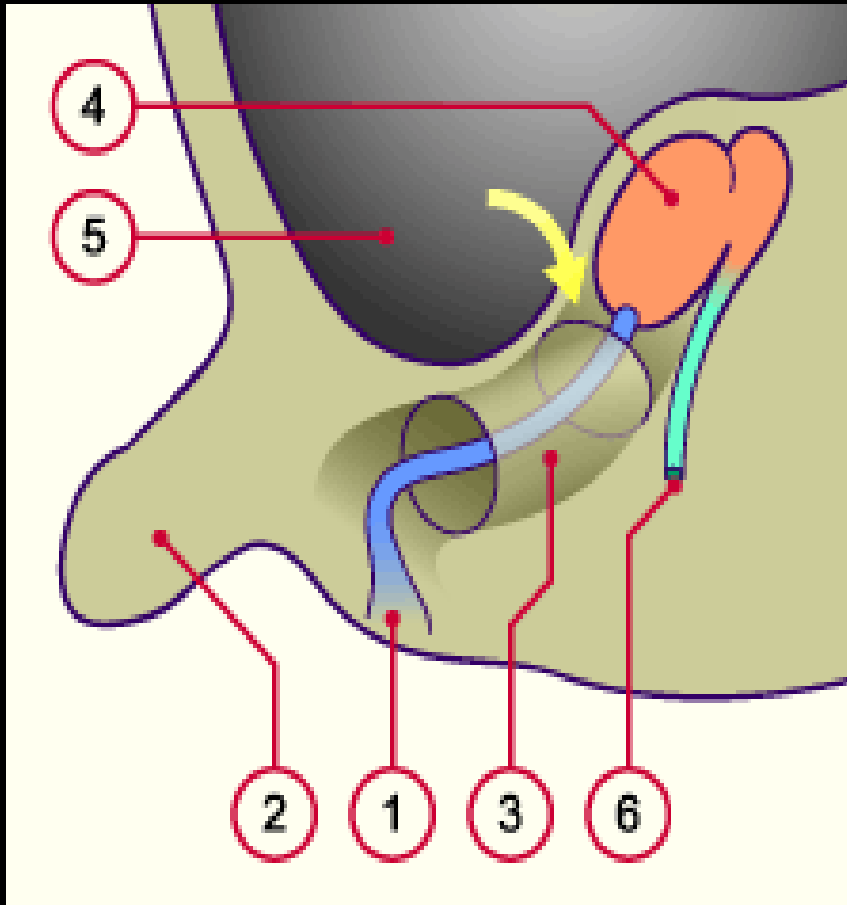
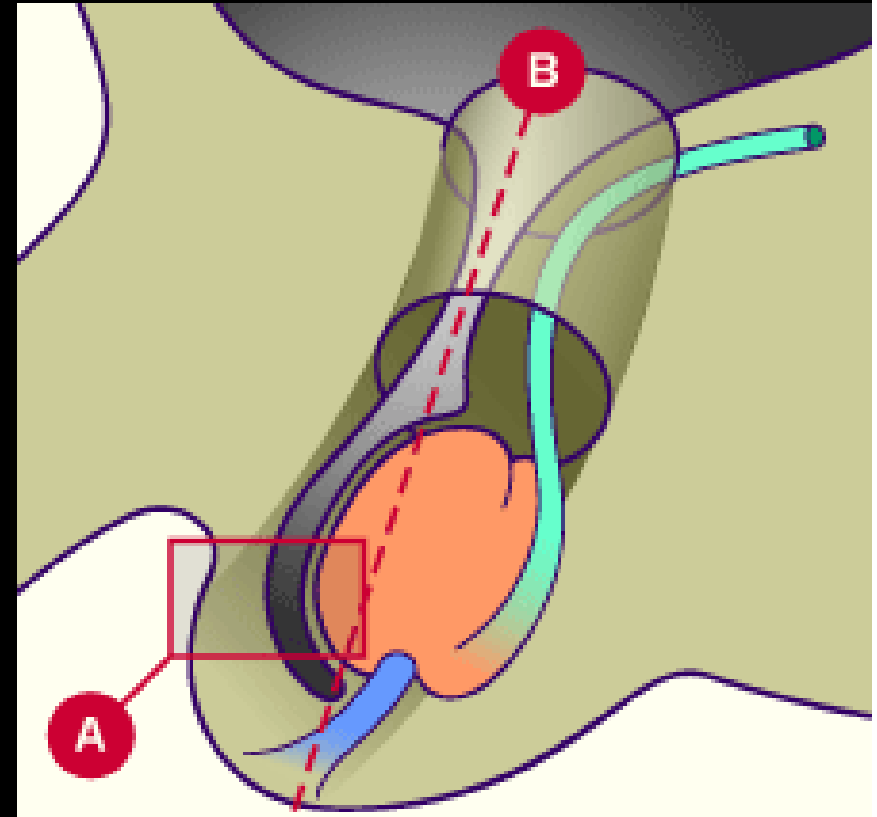
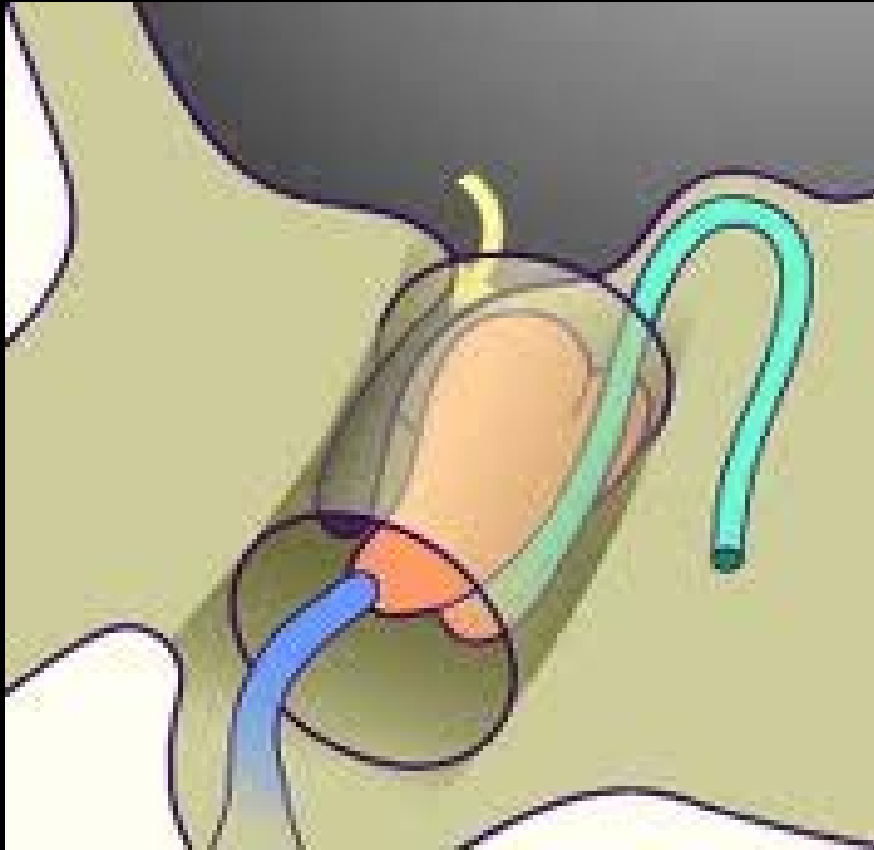


FIGURE 2.17. Formation of inguinal canals in females. **A.** At 2 months the undifferentiated gonads (primordial ovaries) are located on the dorsal abdominal wall. **B.** At 15 weeks the ovaries have descended into the greater pelvis. The processus vaginalis (not shown) passes through the abdominal wall, forming the inguinal canal on each side as in the male fetus. The round ligament passes through the canal and attaches to the subcutaneous tissue of the labium majus. **C.** In the mature female, the processus vaginalis has degenerated but the round ligament persists and passes through the inguinal canal.

Descent of testes

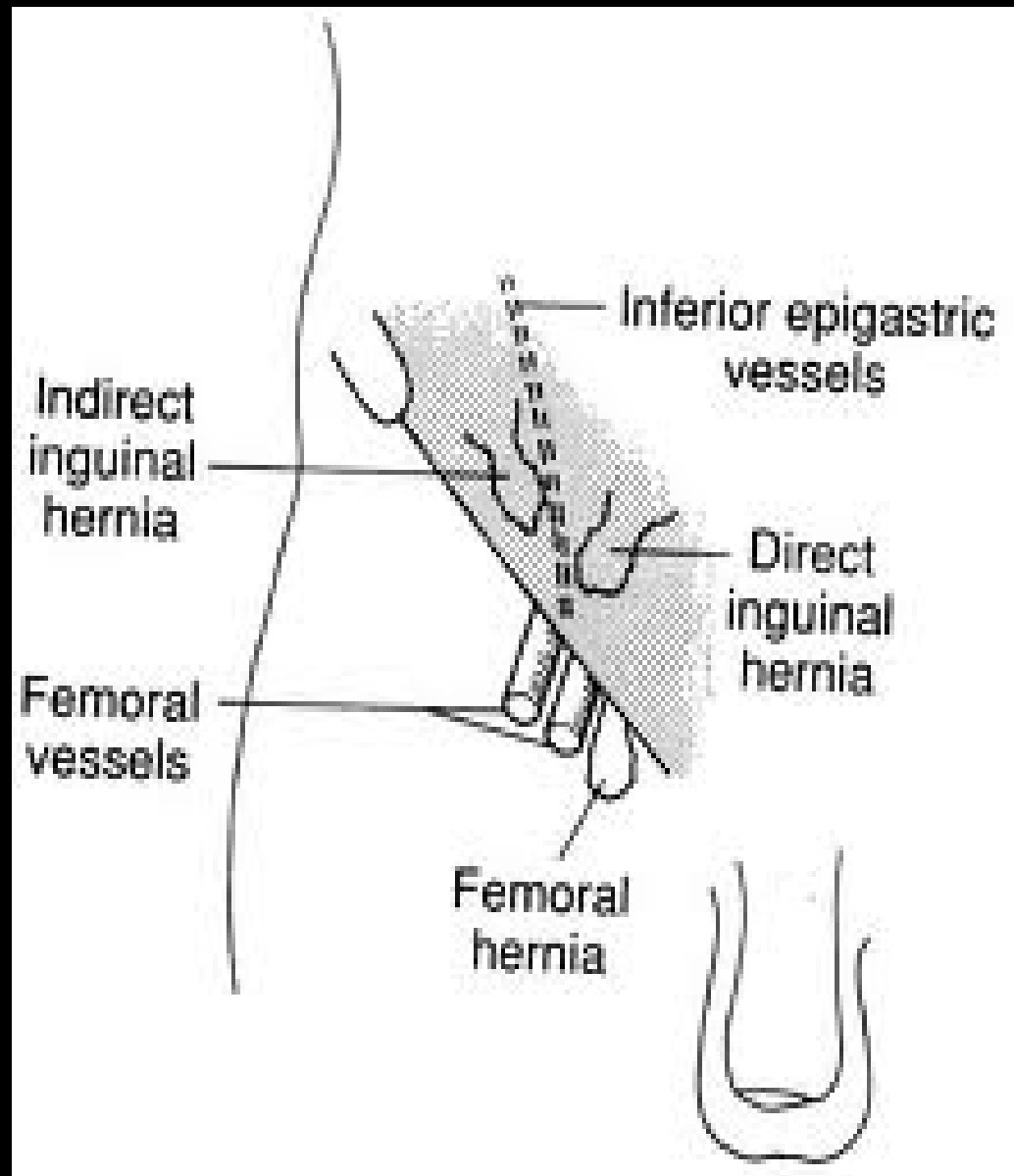




Applied anatomy

-femoral v/s inguinal hernia

- cryptorchidism
- external
supravesical
fossa and
hernia:
- cysts and hernias
of canal of Nuck



cryptorchidism

- Orchis = testis
- Cryptos = hidden
- Testes are undescended in 3% of full term babies
- 30% of premature male births
- 95% cases shows unilateral undescended testis
- More vulnerable for malignancy

Stages of descent of testes

- 3rd month :begins to descend
- 4th month :inguinal region
- 4th-7th month :at the deep inguinal ring
- 7th : travel through inguinal canal
- 8th :superficial inguinal ring
- 9th :enter the scrotum
- At or after birth :base of scrotum

Inguinal hernias

- Majority of hernias occur in inguinal region
- Other common sites are umbilicus and femoral ring
- Normally whole processus vaginalis obliterates before birth except distal part , invaginated by testes , persistent processus vaginalis form peritoneal sac for indirect inguinal hernia
- Indirect hernia occurs in young individual ,whereas direct in old.....

INGUINAL HERNIAS

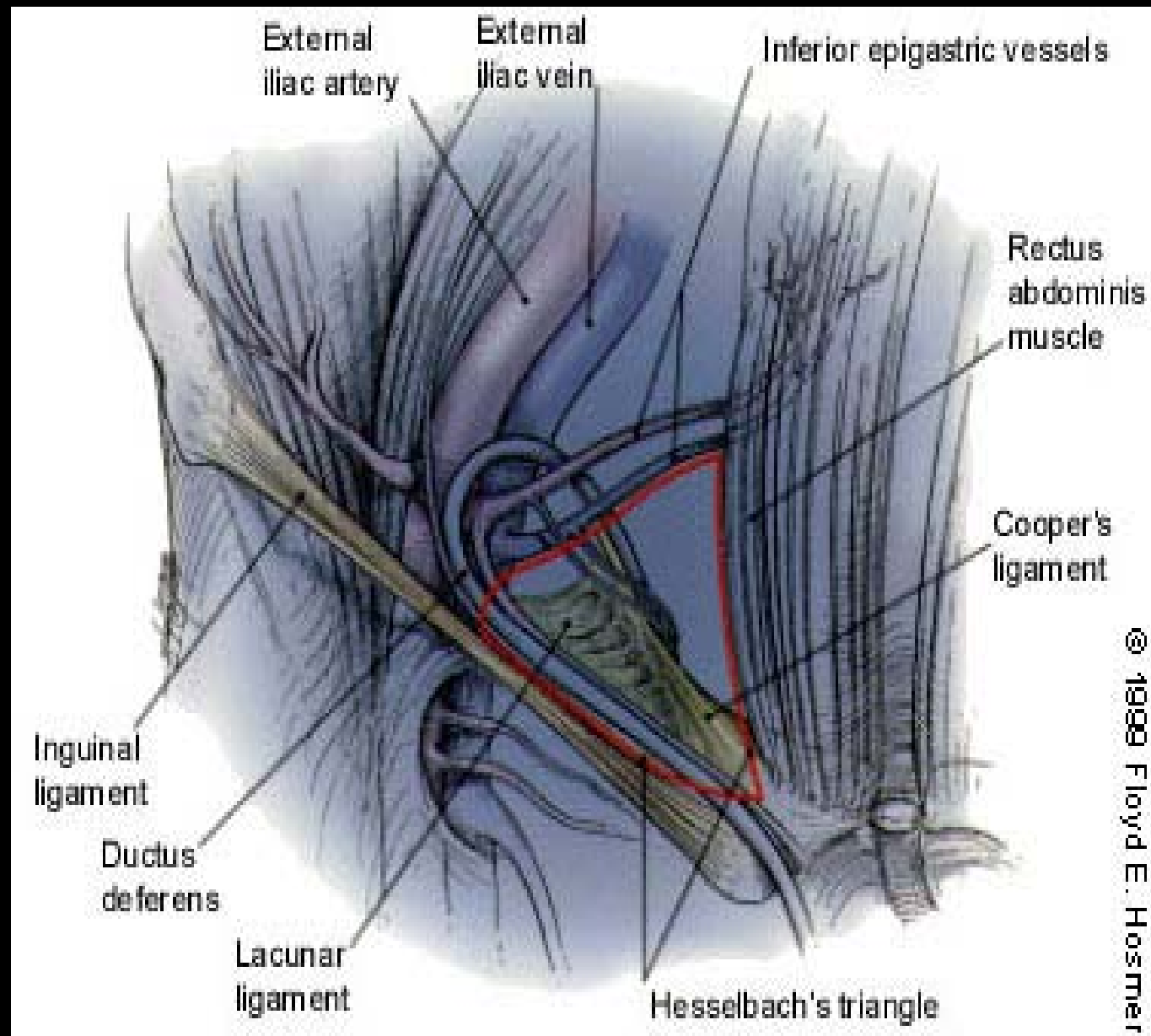
-75% OF ALL ABDOMINAL HERNIAS

-86% CASES ARE SEEN MALE

-DEFINITION : protrusion of peritoneum or
visceras (small intestine)

through a normal or abnormal
opening

from the cavity in which they
belong



indirect/direct inguinal hernia

Pear shaped	globular
Generalyl scrotal	Rarely scrotal
Direction:oblique	straight
Neck: narrow ,lateral to inferior epigastric artery	Wide,medial to inferior epigastric artery

Differentiation of indirect and direct hernia is essential in surgical practice

Less common 1/3	More common 2/3
Reducibility : sometimes irreducible	reducible
Young age group	Middle and old age

Femoral and inguinal hernias

Bulging in groin ,upper thigh or labia scrotal region	bulging in groin or scrotal
female	male
Always repaired because of risk of strangulation	may be reducible
Neck : below and lateral to pubic tubercle	Above and medial

