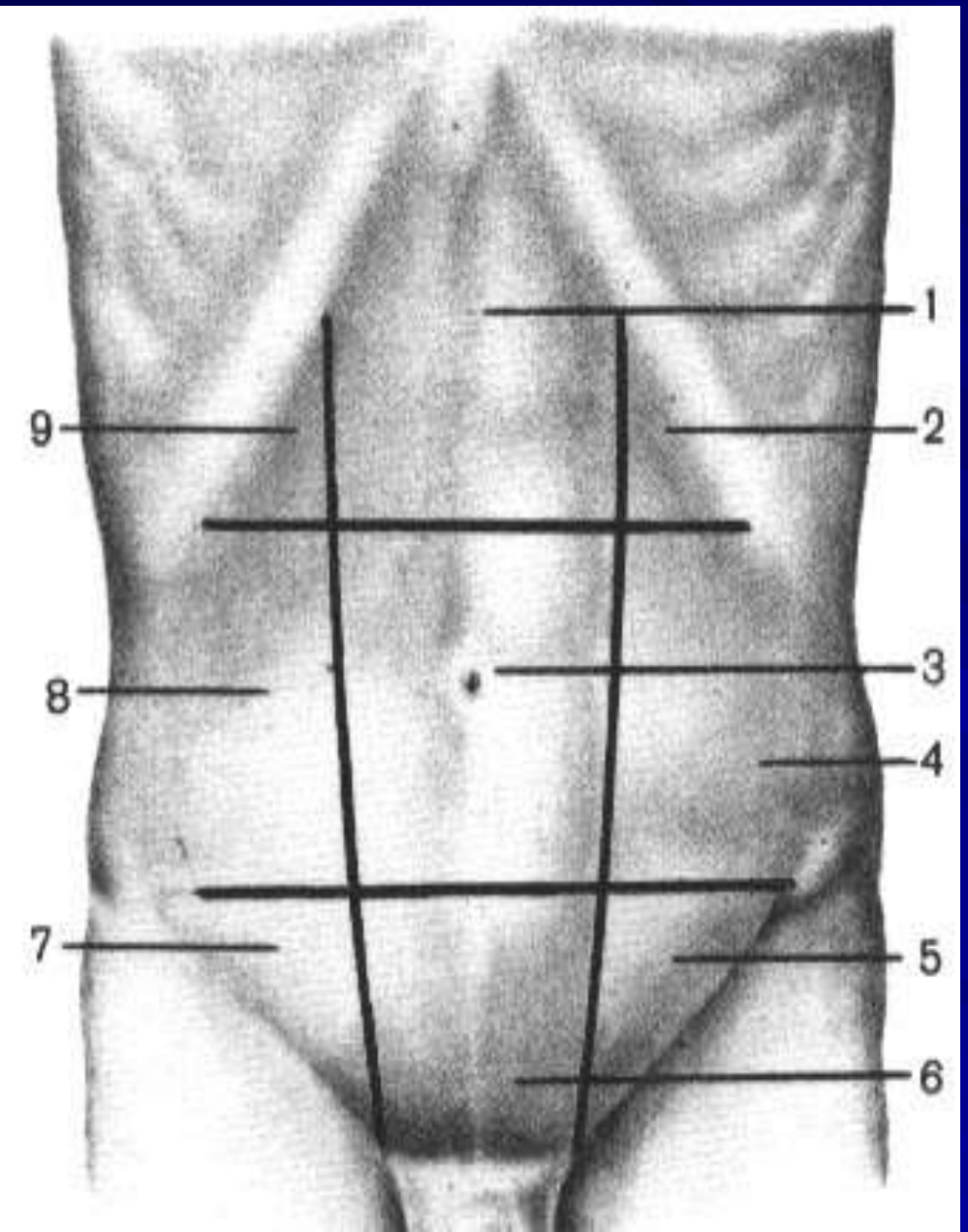
SURGICAL ANATOMY OF THE ANTEROLATERAL ABDOMINAL WALL

Borders

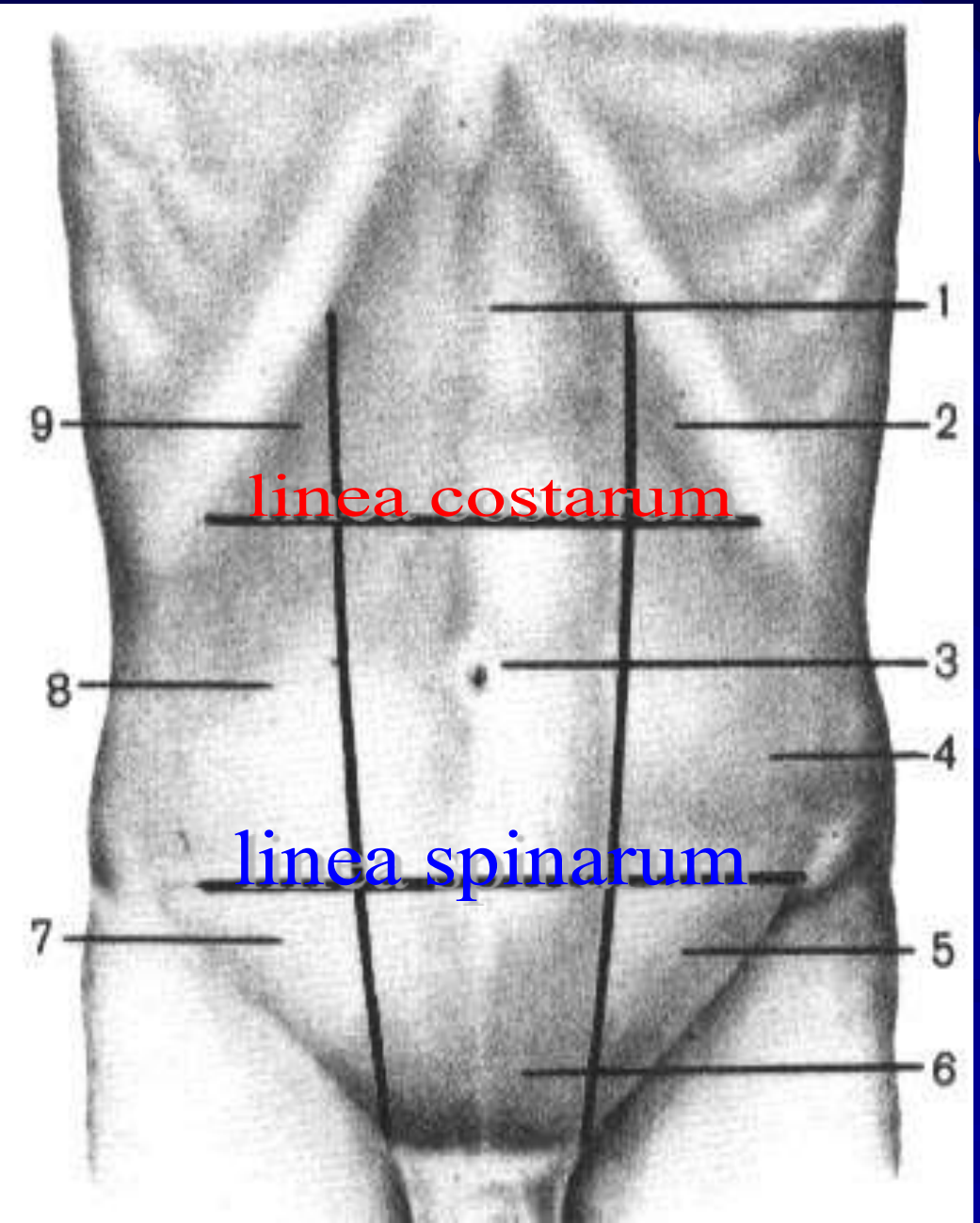


The upper borders of the abdomen are the costal arches and the xiphoid process, the lower are the iliac crests, the pubic symphysis (symphysis pubica) and the inguinal ligaments stretched from the upper anterior iliac spine to the pubic tubercle.

The abdominal wall, which consists of skin with subcutaneous tissue and connective tissue, muscle layer, lumbar vertebrae and muscles of the lumbar area, limits the abdominal cavity.

The anterolateral wall of the abdomen is separated from the lumbar region by a vertical line that goes from the end of the XI rib to the iliac crest.

REGIONS OF THE ANTEROLATERAL ABDOMINAL WALL



epygastrium

epigastric
and 2 infracostal regions;

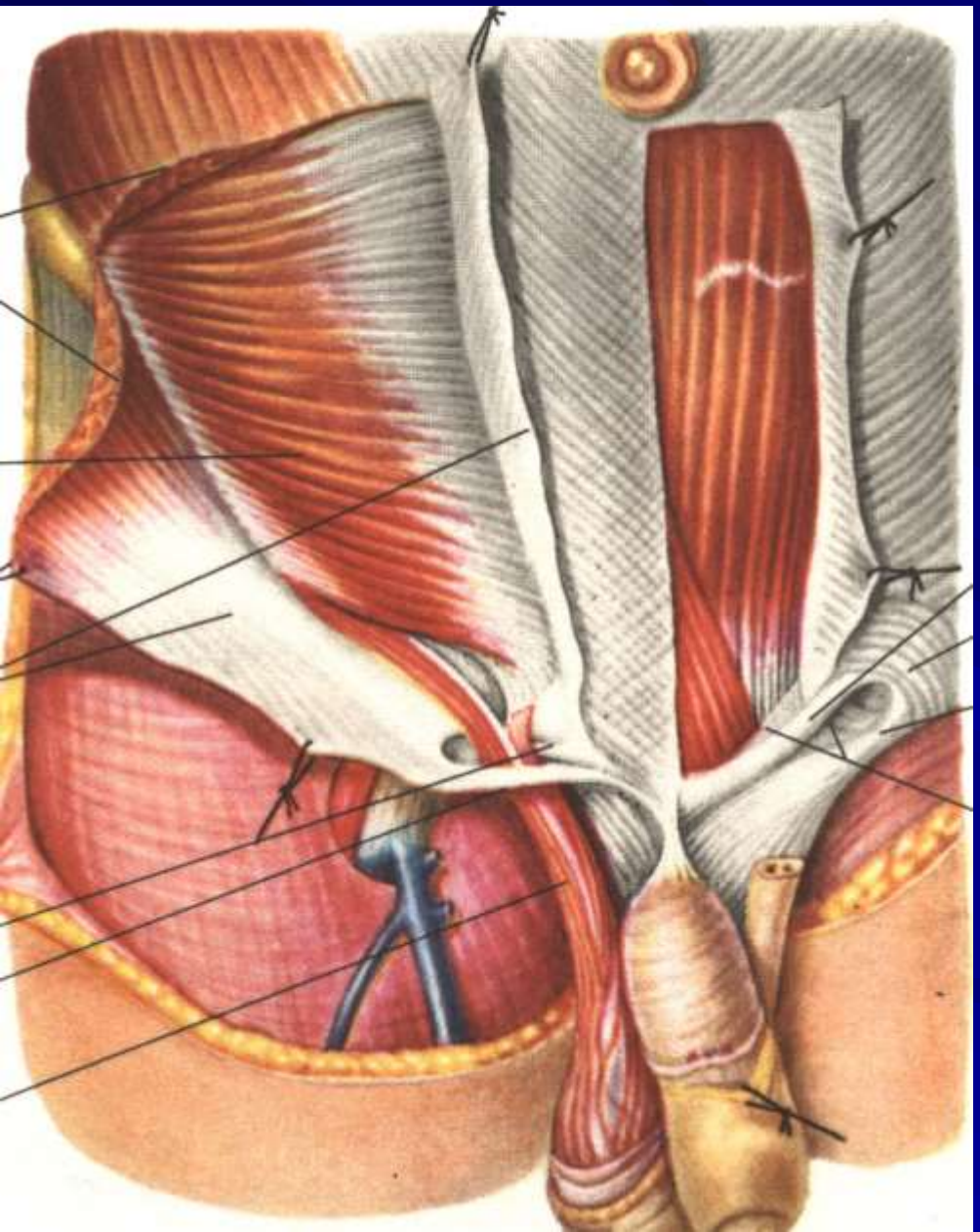
mesogastrium

umbilical and 2 lateral
regions of abdomen;

hypogastrium

pubicum and 2 inguinal
regions

Layers



1. Superficial:
- skin;
- hypoderm;
- superficial fascia.

2. A middle layer is presented:
- external obliqe muscles;
- Internal obliqe muscles
- transversal muscles of abdomen;

3. A deep layer consists of:
- transversal fascia;
- pre-peritoneal cellulose;
- parietal peritoneum.

BLOOD SUPPLY OF THE ANTEROLATERAL ABDOMINAL WALL

Arteries:

a. epigastrica superficialis; a. circumflexa ilium superficialis (from a femoral artery), a. circumflexa ilium profunda (from an outward iliac artery), a. pudenda externa (from a femoral artery), a. intercostales and a. lumbales.

Veins:

v. thoracoepigastrica, v. thoracica lateralis, v. epigastrica superficialis, v. saphena magna, vv. paraumbilicales.

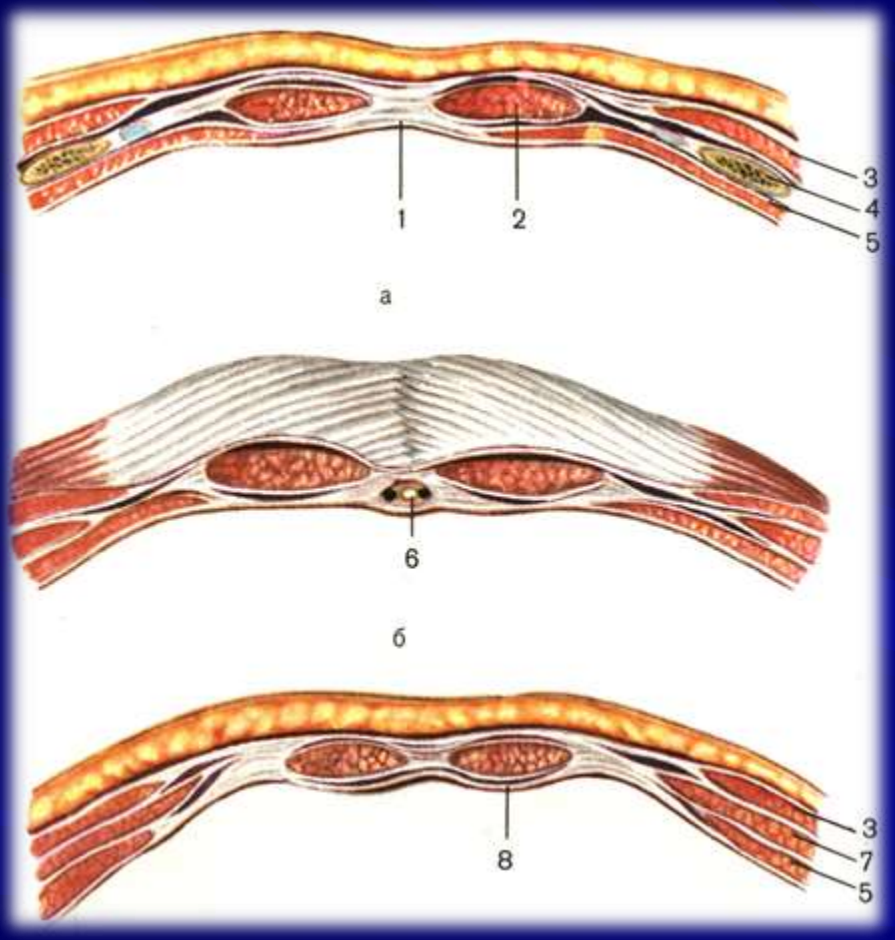
INNERVATION OF THE ANTEROLATERAL ABDOMINAL WALL

N.lumbales (in an amount 5 pair);

by the front skin branches of 6-s pair of bottom intercostal nerves of n. intercostales (from 7-12),

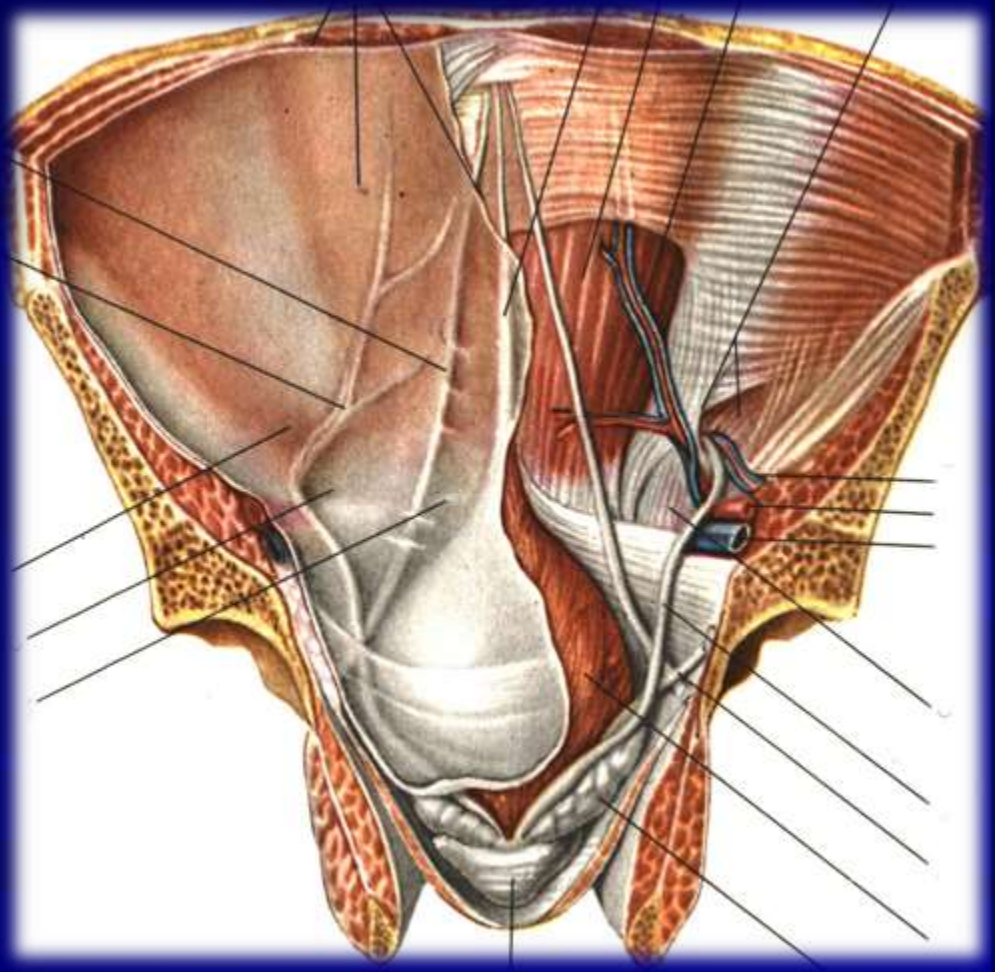
in the bottom third: by branches n. iliohypogastricus and n. ilioinguinales from lumbar interlacement.

Vagina m. recti abdominis)



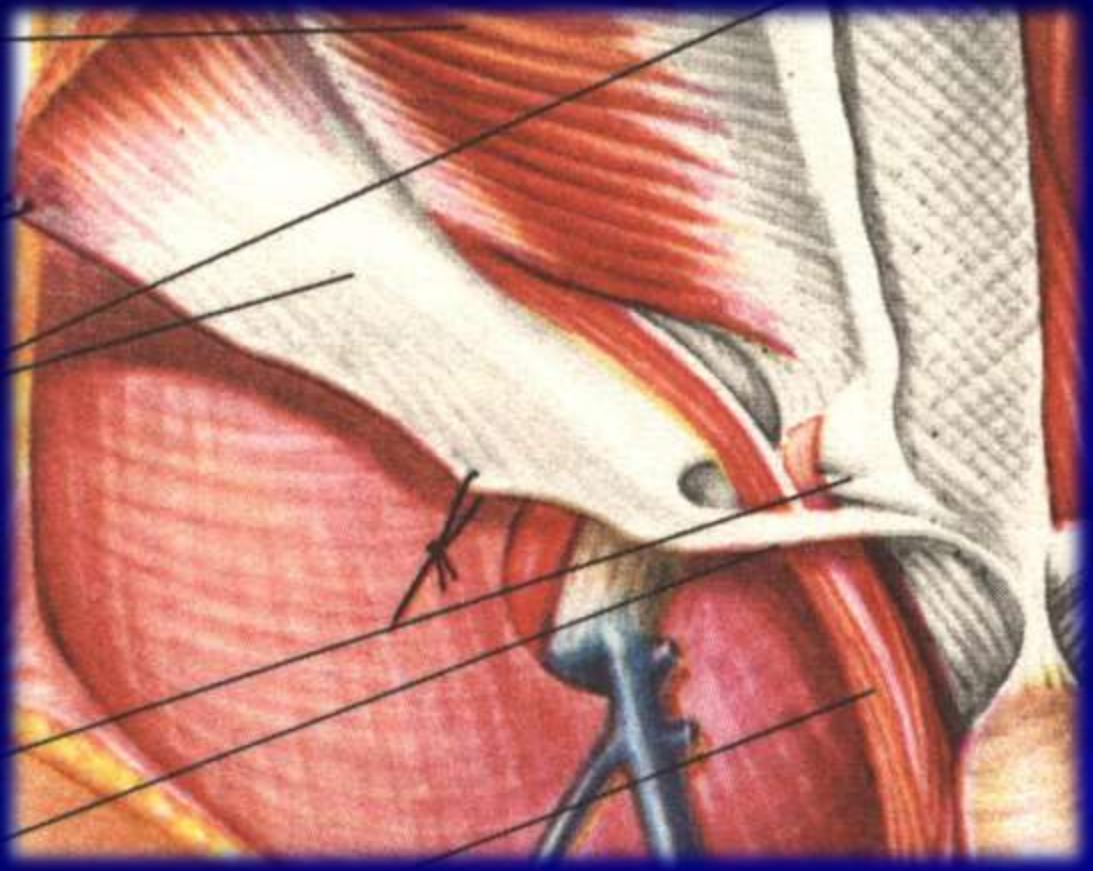
In the upper parts of the abdomen, up to the line located 4–5 cm below the navel (linea arcuata), the front wall of the vagina is formed by the aponeurosis of the external oblique muscle of the abdomen and the superficial sheet of the aponeurosis of the internal oblique muscle, the back - the deep sheet of the aponeurosis of the internal oblique muscle ulcers and aponeurosis of the transverse abdominal muscle. 4-5 cm below the navel, the front wall of the vagina is formed by all three aponeuroses - the external and internal oblique and transverse abdominal muscles; behind the rectus abdominis muscle, there is only the transverse fascia (fascia transversalis) - part of the intra-abdominal fascia. The transition of all aponeuroses to the front wall of the sheath of the rectus abdominis muscle forms an arc-shaped upward convex line located 4-5 cm below the navel.

INNER SURFACE OF THE ANTEROLATERAL ABDOMINAL WALL



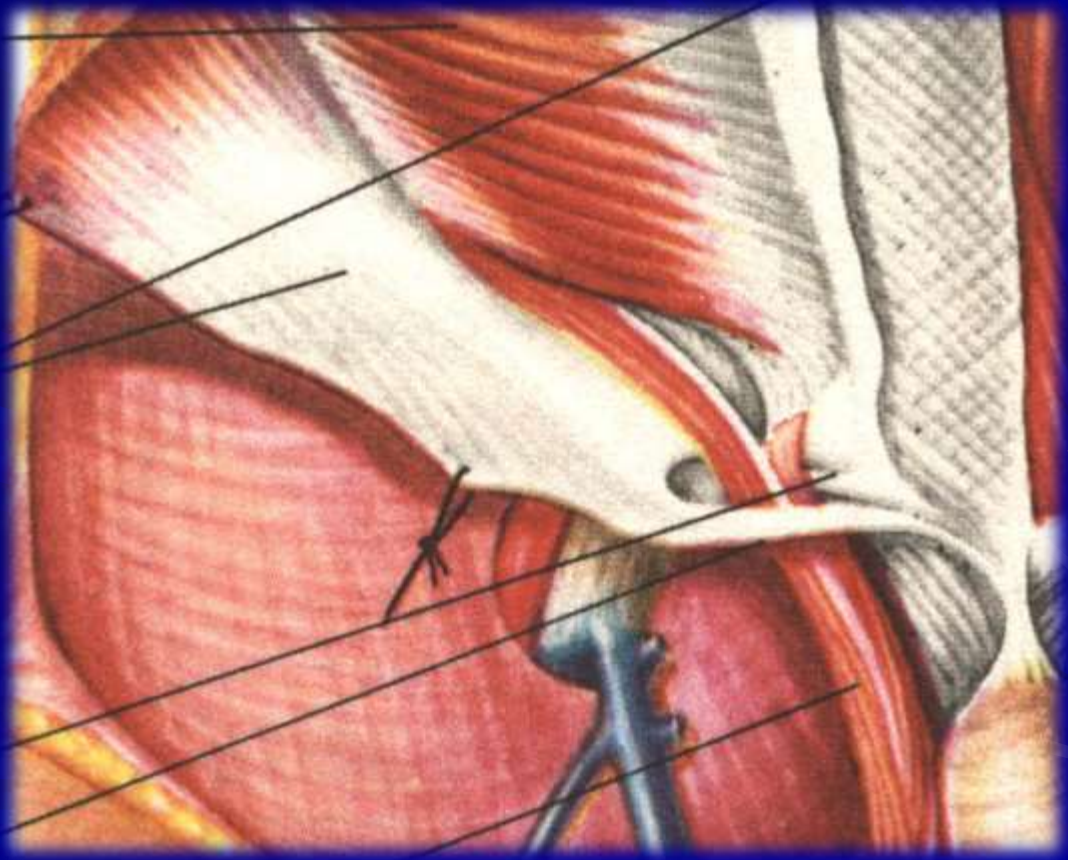
The fold of the peritoneum, which connects the beginning of the bladder with the allantois in the embryonic period, is called the median umbilical fold (plica umbilicalis mediana). It is unpaired and connects the top of the bladder with the navel.
Plica umbilicalis medialis (dextra/sinistra) – folds of the peritoneum above the obliterated umbilical arteries, which go from the side walls of the bladder to the navel.
Plica umbilicalis lateralis (dextra/sinistra) – folds of the peritoneum above the lower epigastric arteries and veins (aa. et vv. epigastricae inferiores dextrae/sinistrae).
Pits appear between the described folds of the peritoneum.
A supravesical fossa (fossa supravesicalis) is formed between the median and medial umbilical folds, a medial inguinal fossa (fossa inguinalis medialis) is formed between the medial and lateral umbilical folds, and a lateral inguinal fossa (fossa inguinalis lateralis) is located outside the lateral umbilical fold.

Borders of inguinal channel

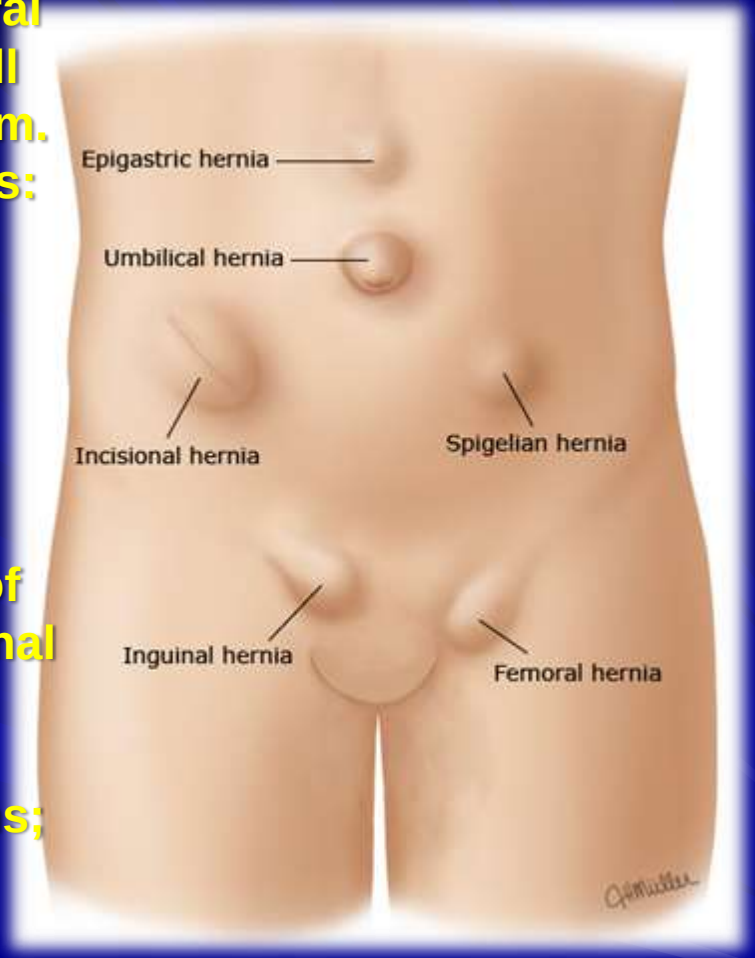


The inguinal canal is located in the lower part of the inguinal area above the inguinal ligament. The inguinal canal distinguishes two openings, or rings, and four walls. The superficial inguinal ring (anulus inguinalis superficialis) is formed by legs that diverge, the aponeurosis of the external oblique muscle of the abdomen - crus mediale et crus laterale, fastened by interleg fibers (fibrae intercrurales), which round the gap between the legs into a ring. The deep inguinal ring (anulus inguinalis profundus) corresponds to the lateral inguinal fossa from the side of the abdominal cavity.

The spermatic cord (funiculus spermaticus) passes into the inguinal canal through the deep inguinal ring and the transverse fascia. The aponeurosis of the external oblique muscle of the abdomen, and the back wall by the transverse fascia forms the front wall of the inguinal canal. The lower free edges of the internal oblique and transverse abdominal muscles form the upper wall of the inguinal canal. The lower wall of the inguinal canal is the inguinal ligament.

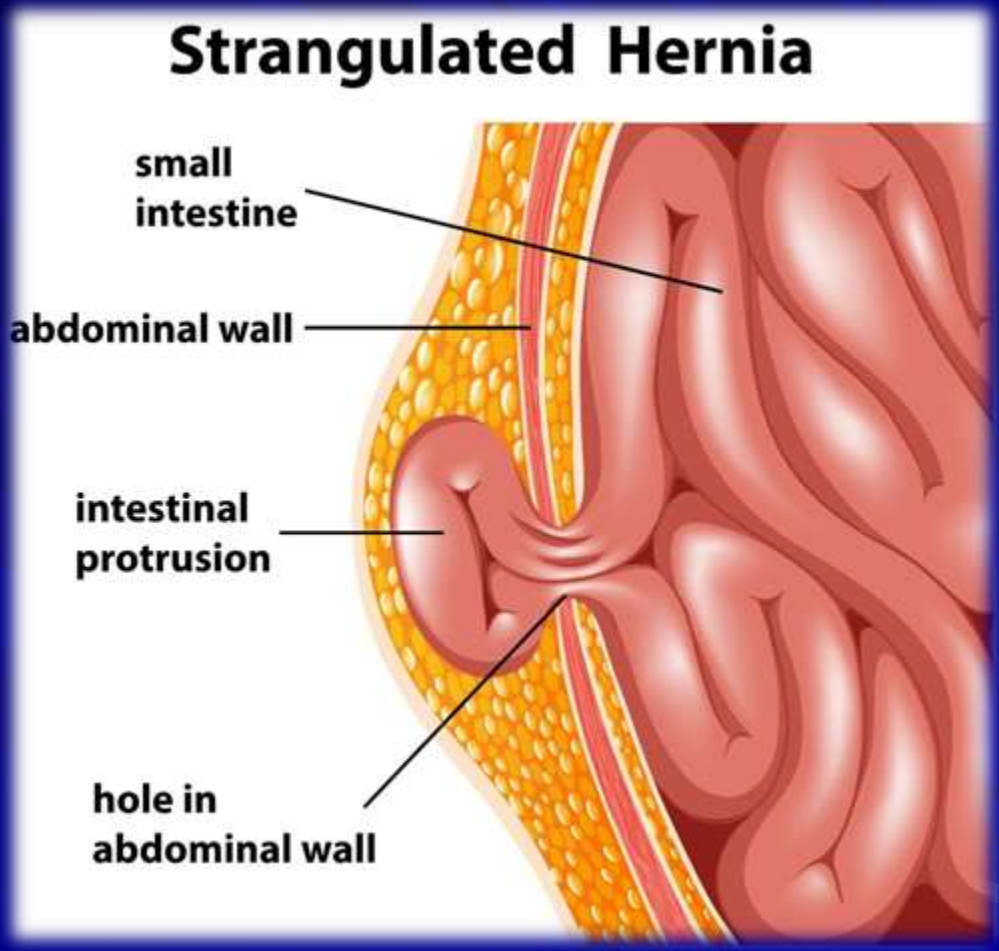


Abdominal hernia (hernia adominalis) is a protrusion of abdominal organs through natural or pathological openings in the abdominal wall while preserving the integrity of the peritoneum.
Abdominal hernias are divided into two groups:
- external (herniae abdominales externae),
- internal (herniae abdominales internae).
The exit of internal organs from the wound of the abdominal wall is called prolapse (eventration).
Eventrations usually occur at the site of a previously performed laparotomy as a result of careless suturing of the wound of the abdominal wall, widespread suppuration of the wound, a sharp increase in intra-abdominal pressure in the postoperative period, and for other reasons; that is, it is a severe complication after abdominal operations.



COMPONENTS OF HEARNIA

1) hernia gate;
2) hernia sack;
3) hernia covering;
4) hernia contents:
   - omentocoele;
   - enterocoele;
   - cestocoele;
   - ovary

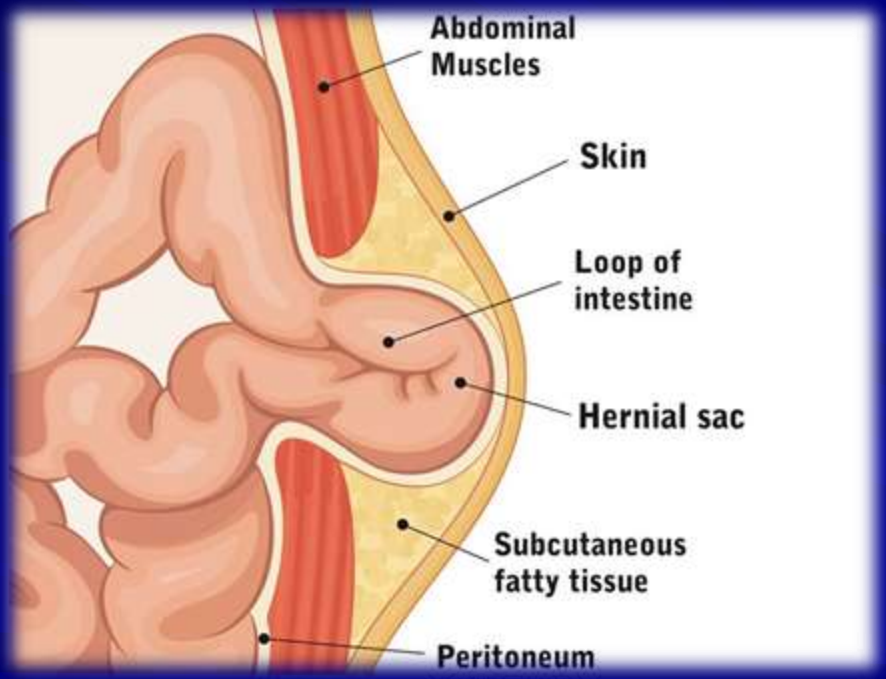


General classification of hernias

- inguinal;
- umbilical;
- femoral;
- epigastric;
- incisional

- congenital;
- acquired

- reducible;
- irreducible;
- obstructed / incarcerated;
- strangulated



Treatment

- conservative management;
- surgical management

Conservative management (indications):
- refuse operation;
- old patients with severe co morbidities;
- children.

Conservative management (contraindications):
- irreducible testis;
- undescended testis;
- chronic bronchitis, strenuous labour;
- associated with large hydrocele;
- not intelligent enough to position properly.

Surgical management:
- herniotomy;
- herniorrhaphy.