Sokan Salamat Medical Group

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Hernia & Mesh

Presented by:

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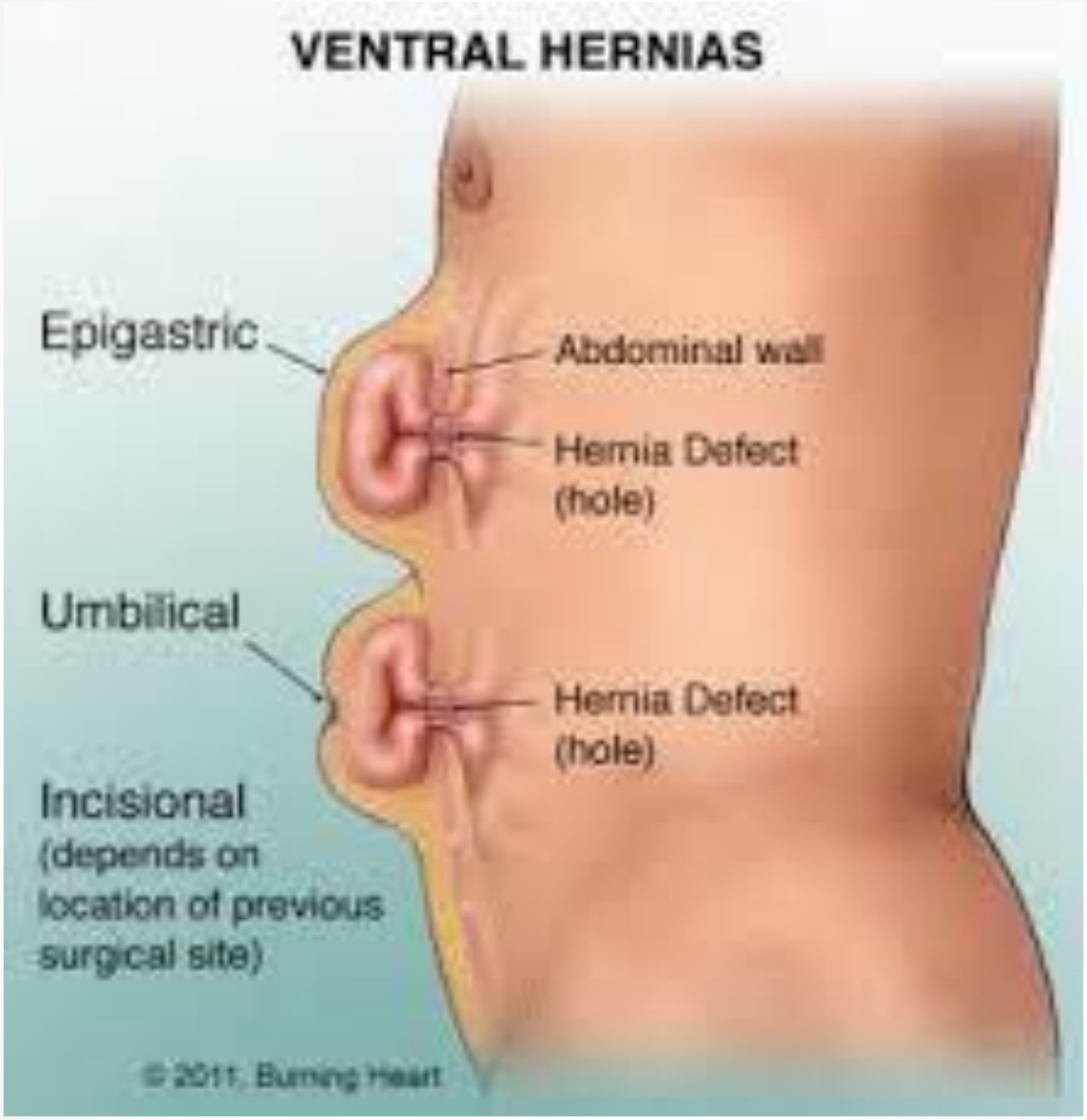
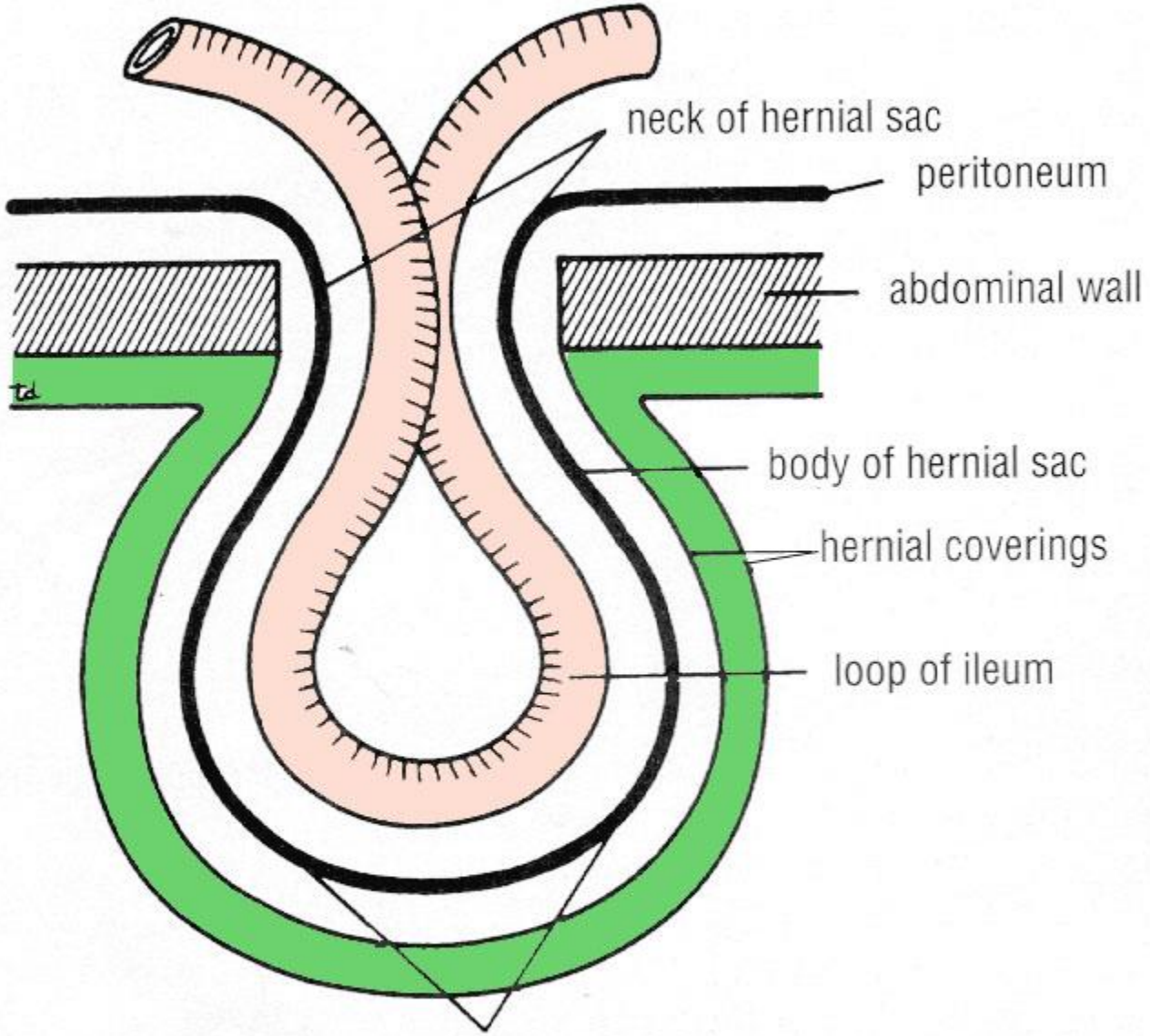
Objectives

- Definition
- Anatomy
- Precipitating factors
- Types
- Management and repair
- Mesh
- Types and difference
- Application


VENTRAL HERNIAS
Epigastric
Abdominal wall
Hernia Defect
(hole)
Umbilical
Hernia Defect
(hole)
Incisional
(depends on
location of previous
surgical site)
© 2011. Burning Heart



Different parts of a hernia.

Clinical types of Hernia

1. reducible hernia is one in which the contents of the sac return to the abdomen spontaneously or with manual pressure when the patient is recumbent.

2. irreducible hernia is one whose contents or part of contents cannot be returned to the abdomen, without serious symptoms.
   hernias are trapped by the narrow neck

Clinical types continued…

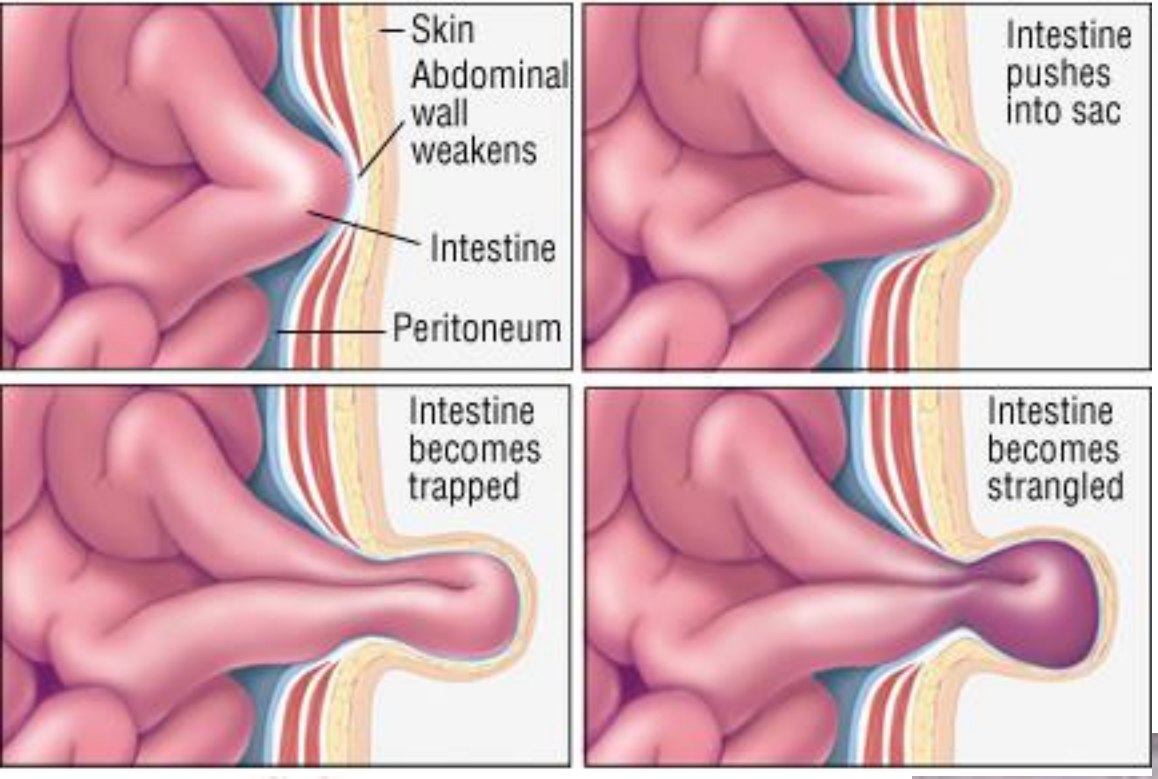
incarcerated hernia: is one whose contents cannot be returned to the abdomen, with severe symptoms.

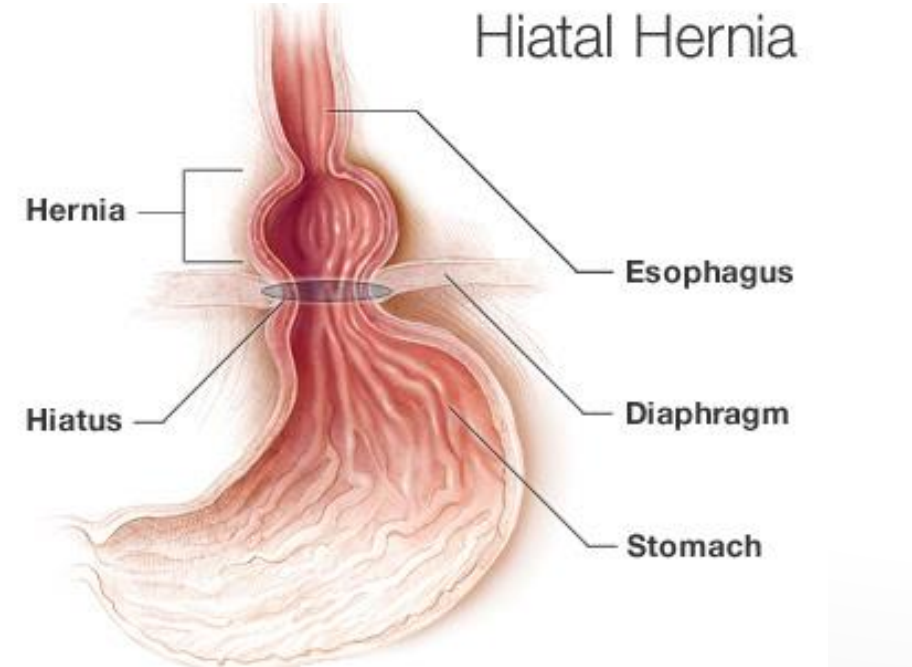
strangulated hernia: denotes compromise to the blood supply of the contents of the sac.

incarcerated hernia and strangulated hernia are the two stages of a pathologic course

Richter's hernia: (intestinal wall hernia) a hernia that has strangulated or incarcerated a part of the intestinal wall without compromising the lumen.

Sliding hernia: is one in which the wall of a viscera forms a portion of the wall of the hernia sac. It is may be stomach (hiatal hernia) colon, cecum or bladder. Belongs to irreducible hernia


Skin
Abdominal wall weakens
Intestine
Peritoneum
Intestine pushes into sac
Intestine becomes trapped
Intestine becomes strangled


Hiatal Hernia
Hernia
Esophagus
Hiatus
Diaphragm
Stomach

- Indirect Inguinal Hernia

Hernia through the inguinal canal

- Direct Inguinal Hernia

The sac passes through a weakness or defect of the transversalis fascia in the posterior wall of the inguinal canal

- Femoral Hernia

Hernia medial to femoral vessels under inguinal ligament

- Umbilical Hernia

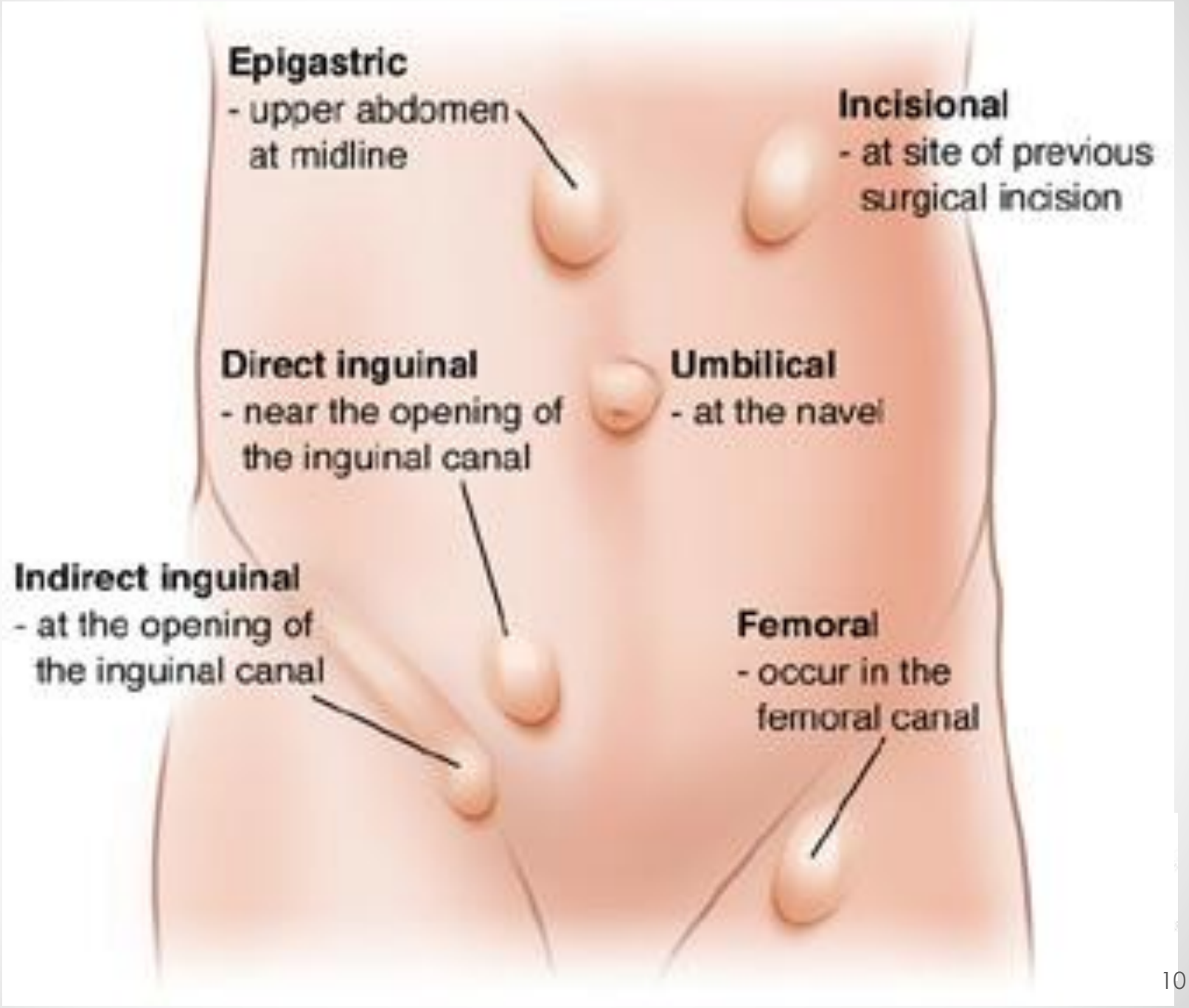
Hernia through the umbilical ring

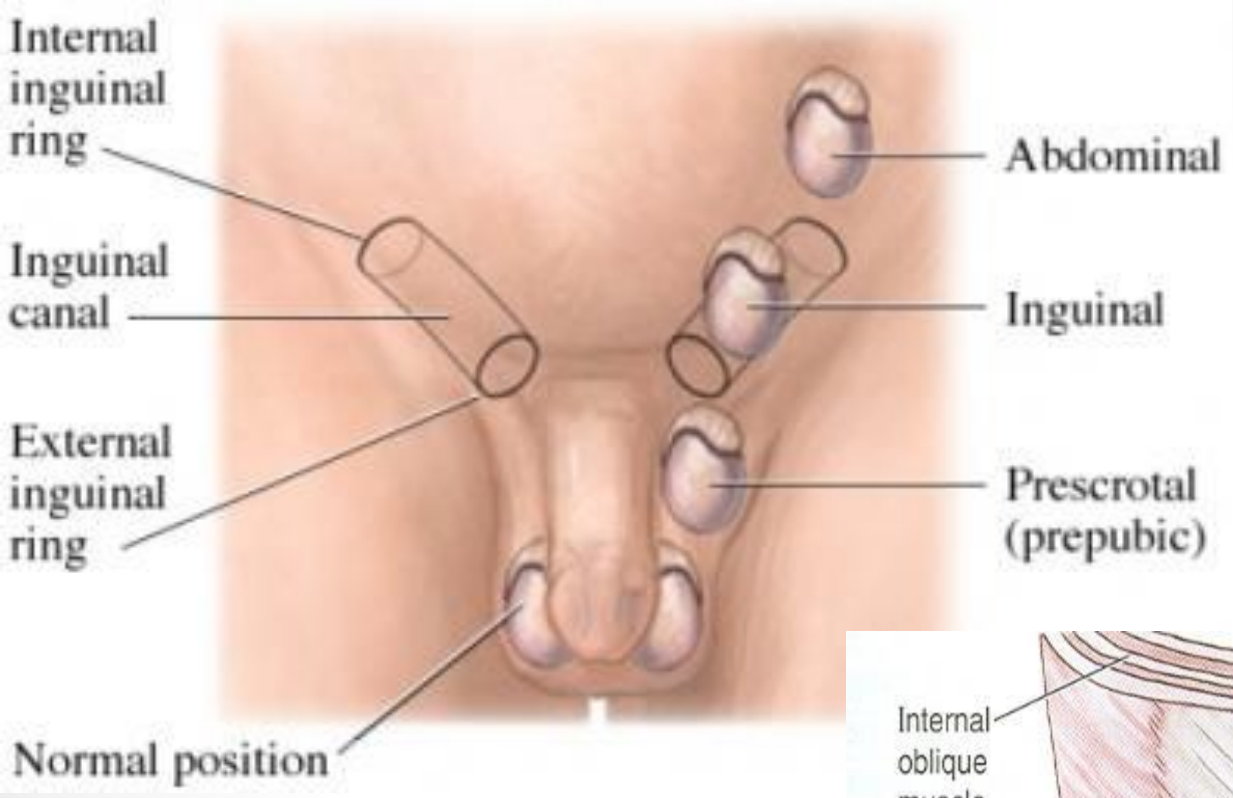
- Epigastric Hernia

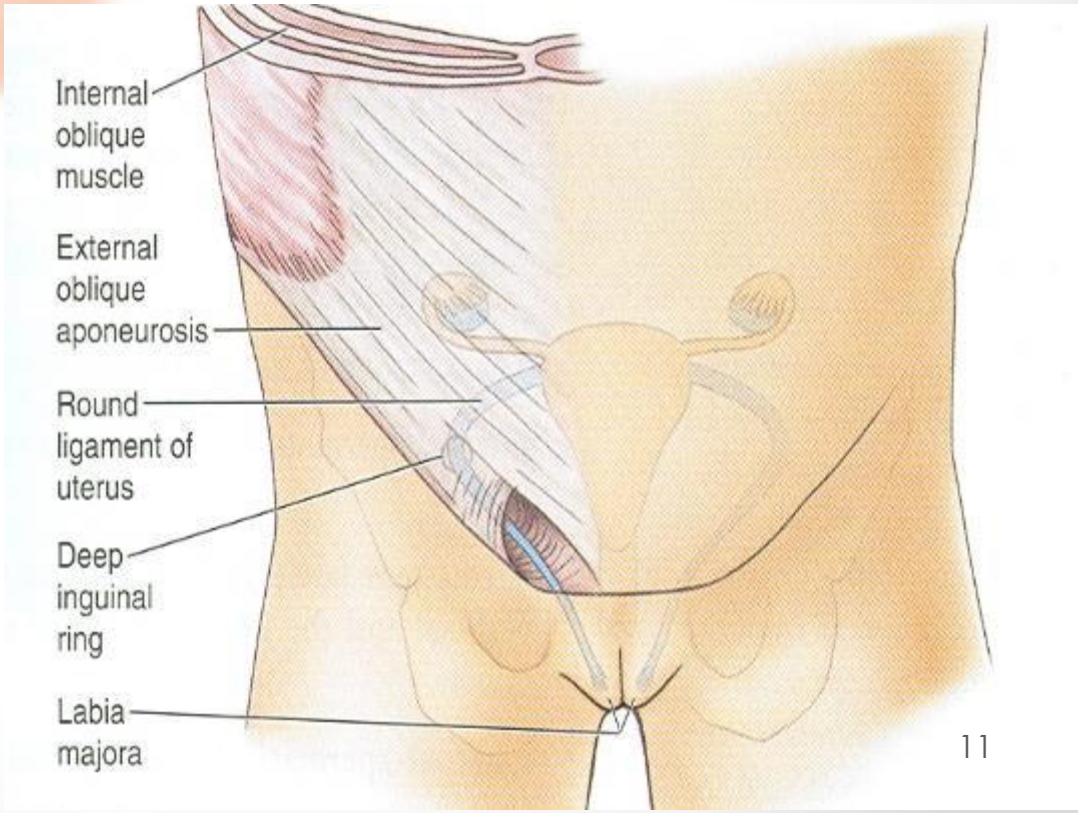
Protrusion of extraperitoneal fat through the linea alba anywhere between the xiphoid process and the umbilicus

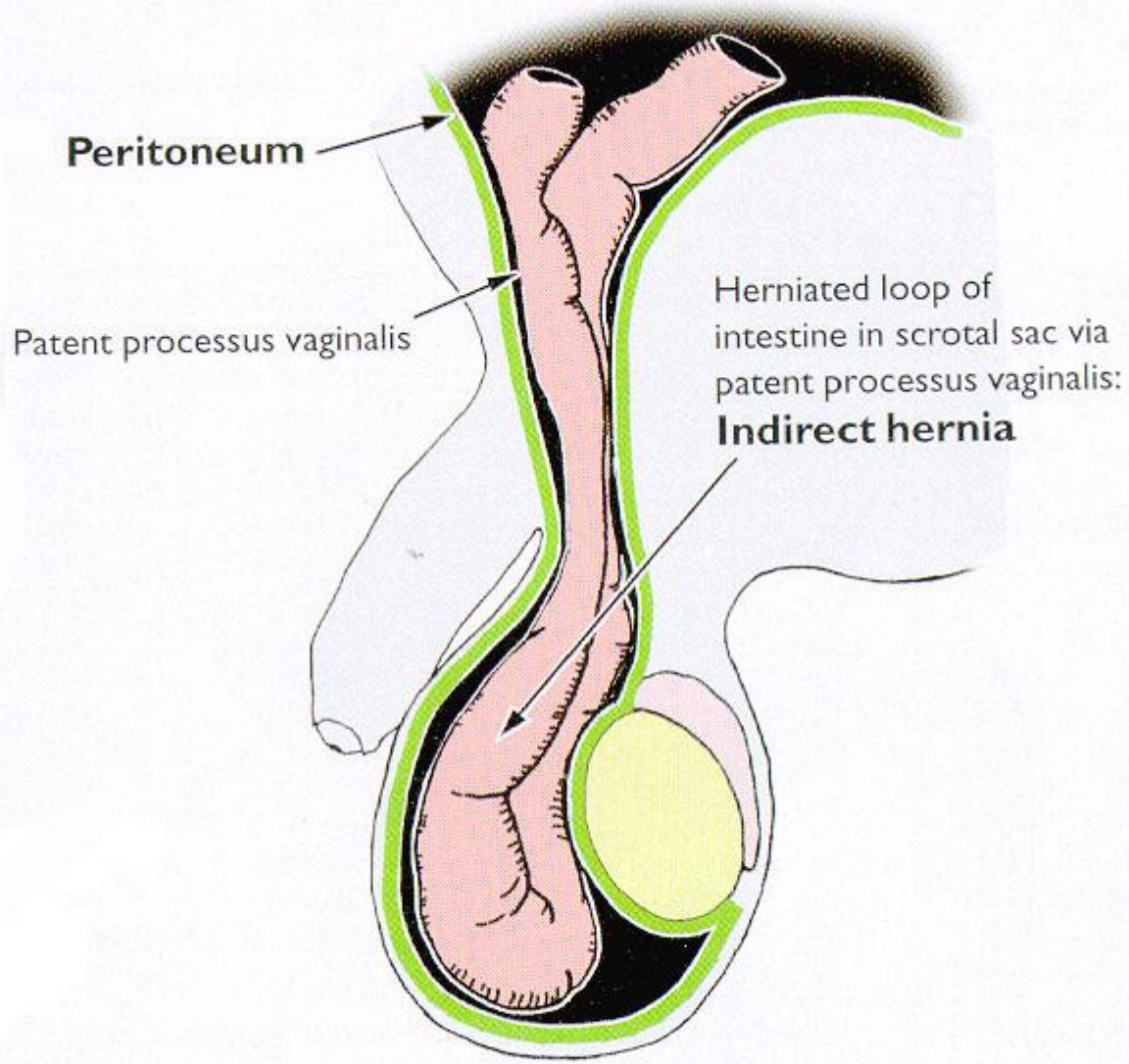
- Incisional Hernia

Hernia through an incisional site


Epigastric
- upper abdomen at midline
Incisional
- at site of previous surgical incision
Direct inguinal
- near the opening of the inguinal canal
Umbilical
- at the navel
Indirect inguinal
- at the opening of the inguinal canal
Femoral
- occur in the femoral canal

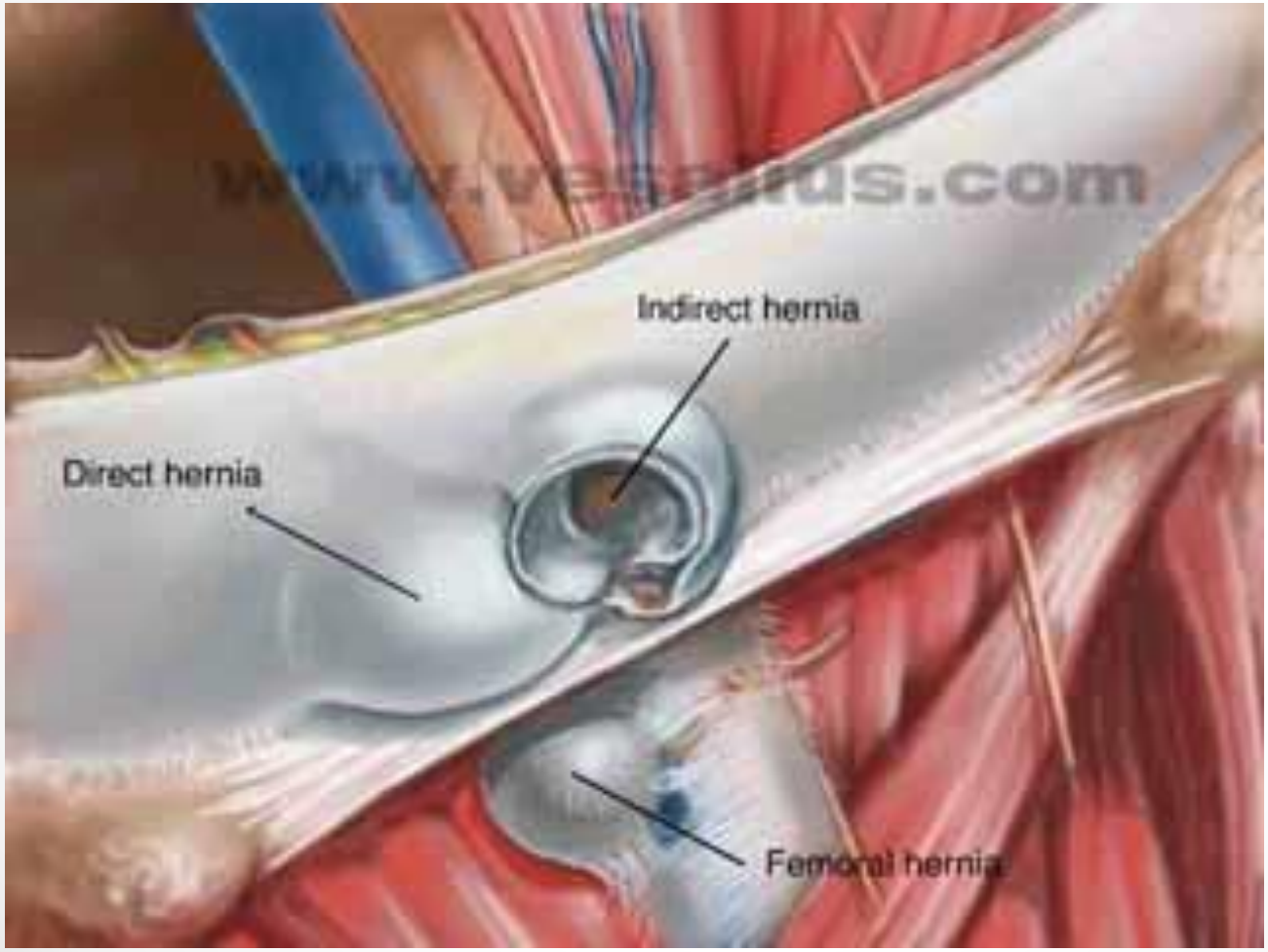

Internal inguinal ring
Inguinal canal
External inguinal ring
Normal position
Abdominal
Inguinal
Prescrotal (prepubic)


Internal oblique muscle
External oblique aponeurosis
Round ligament of uterus
Deep inguinal ring
Labia majora



INDIRECT HERNIA

Inguinal Hernias - Anatomy



Causes of Hernias

- Any condition that increases the pressure of the abdominal cavity may contribute to the formation or worsening of a hernia.
  - Obesity
  - Heavy lifting
  - Coughing
  - Straining during a bowel movement or urination
  - Chronic lung disease
  - Fluid in the abdominal cavity
  - Hereditary

Groin Hernias

- **Incidence:**

  - Groin hernias are found in 5% of male population.
  - Represents 86% of all hernia cases.
  - It occurs 5 times more often in males than females.
  - Inguinal 96% (indirect 75%, direct 25%).
  - Femoral 4%.

Indirect Versus Direct inguinal hernias

Indirect Inguinal Hernia	Direct Inguinal Hernia
Pass through inguinal canal.	Bulge from the posterior wall of the inguinal canal
Can descend into the scrotum.	Cannot descent into the scrotum.
The defect is not palpable (it is behind the fibers of the external oblique muscle).	The defect may be felt in the abdominal wall above the pubic tubercle.
After reduction: the bulge appears in the middle of inguinal region and then flows medially before turning down to the scrotum.	After reduction: the bulge reappears exactly where it was before.
Common in children and young adults. The most common hernia	Common in old age.

How Repair?

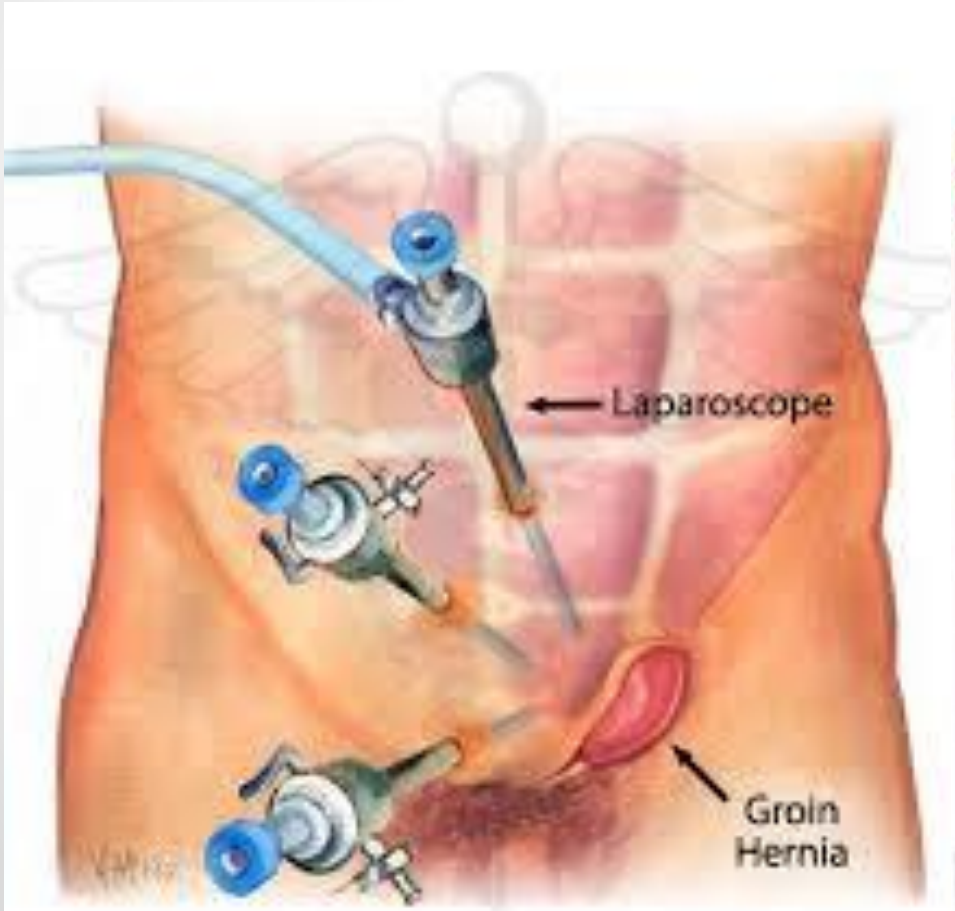
1. **Open primary repair**
2. **Open repair with mesh**
3. **Laparoscopic repair with mesh**

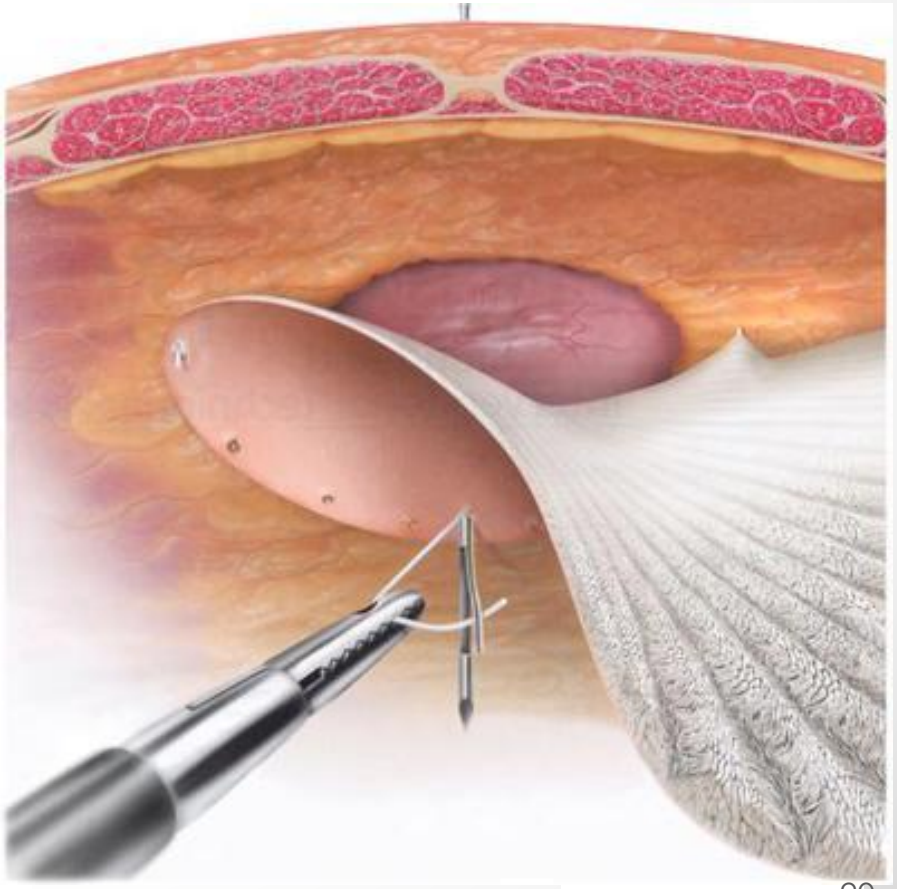
How I DO It

- Open with primary repair
  - Thin young woman
  - Reoccurrence
  - Smaller than a finger tip

How I do It

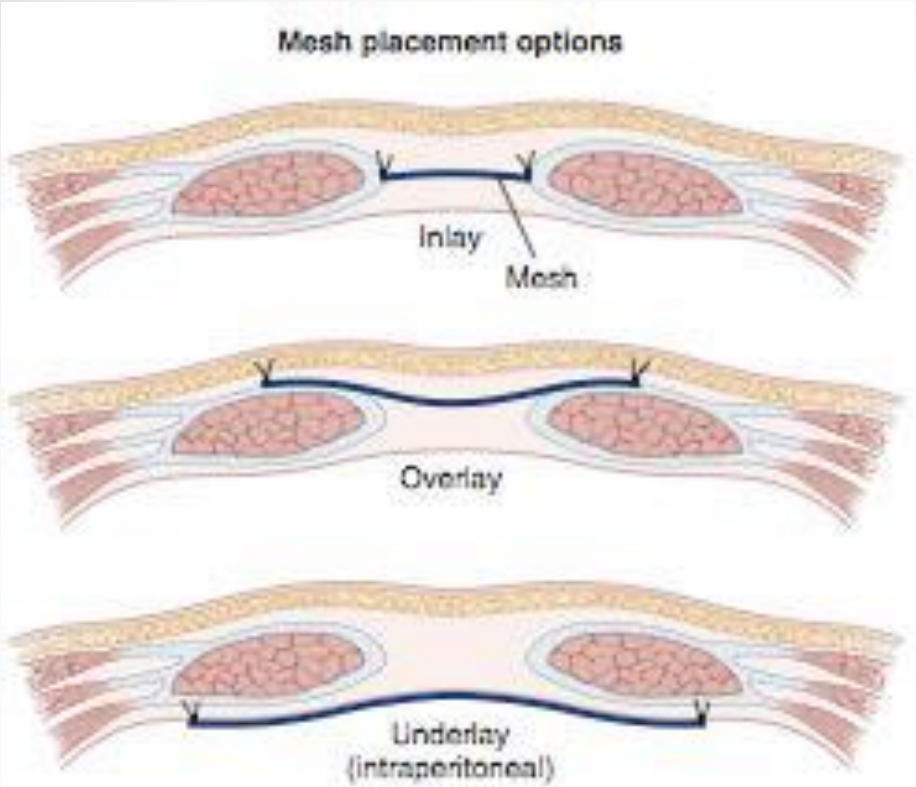
- Open with mesh
  - Small defect
  - Larger than fingertip
  - Mesh
  - Wound infection a bit higher
  - Less pain

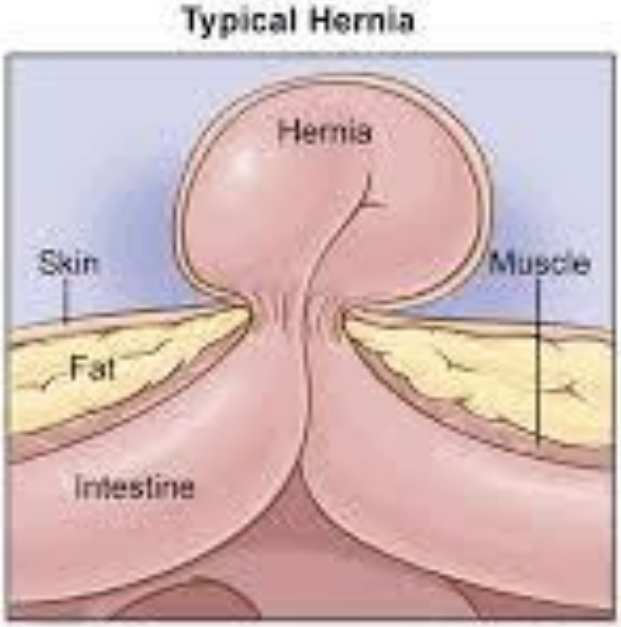

Laparoscope
Groin
Hernia

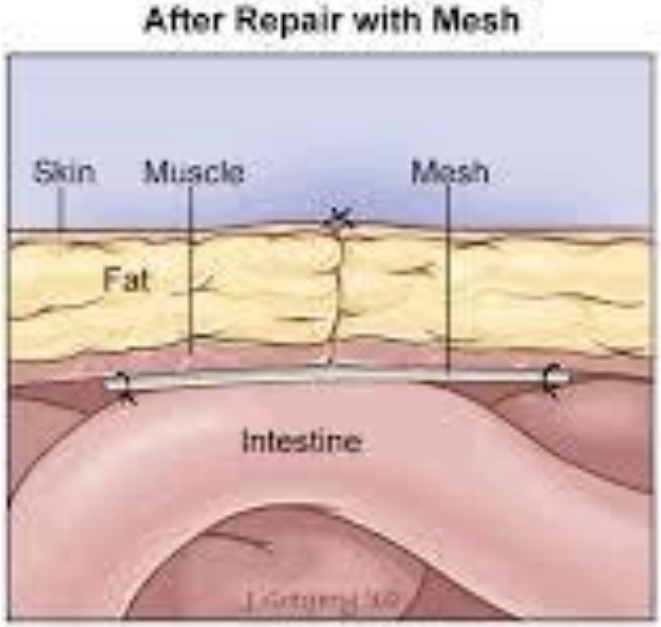


MESH DESIGN

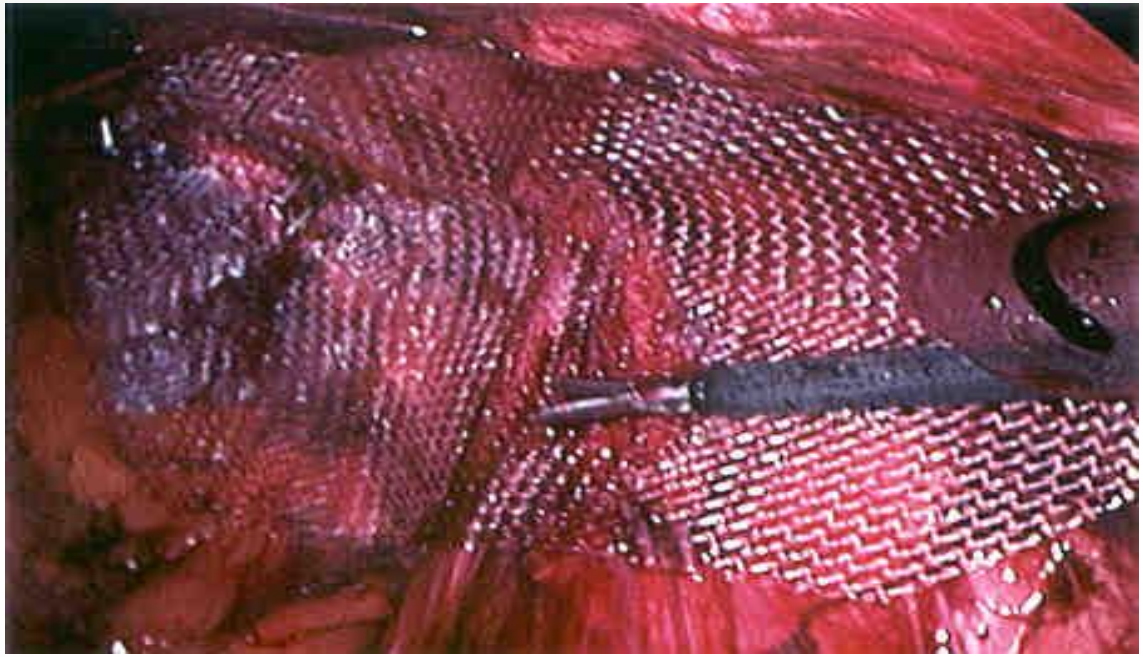
- Knitted, interlocks each fiber junction
- Two way elastic, adaptation to various stresses


Mesh placement options
Inlay
Mesh
Overlay
Underlay
(intraperitoneal)

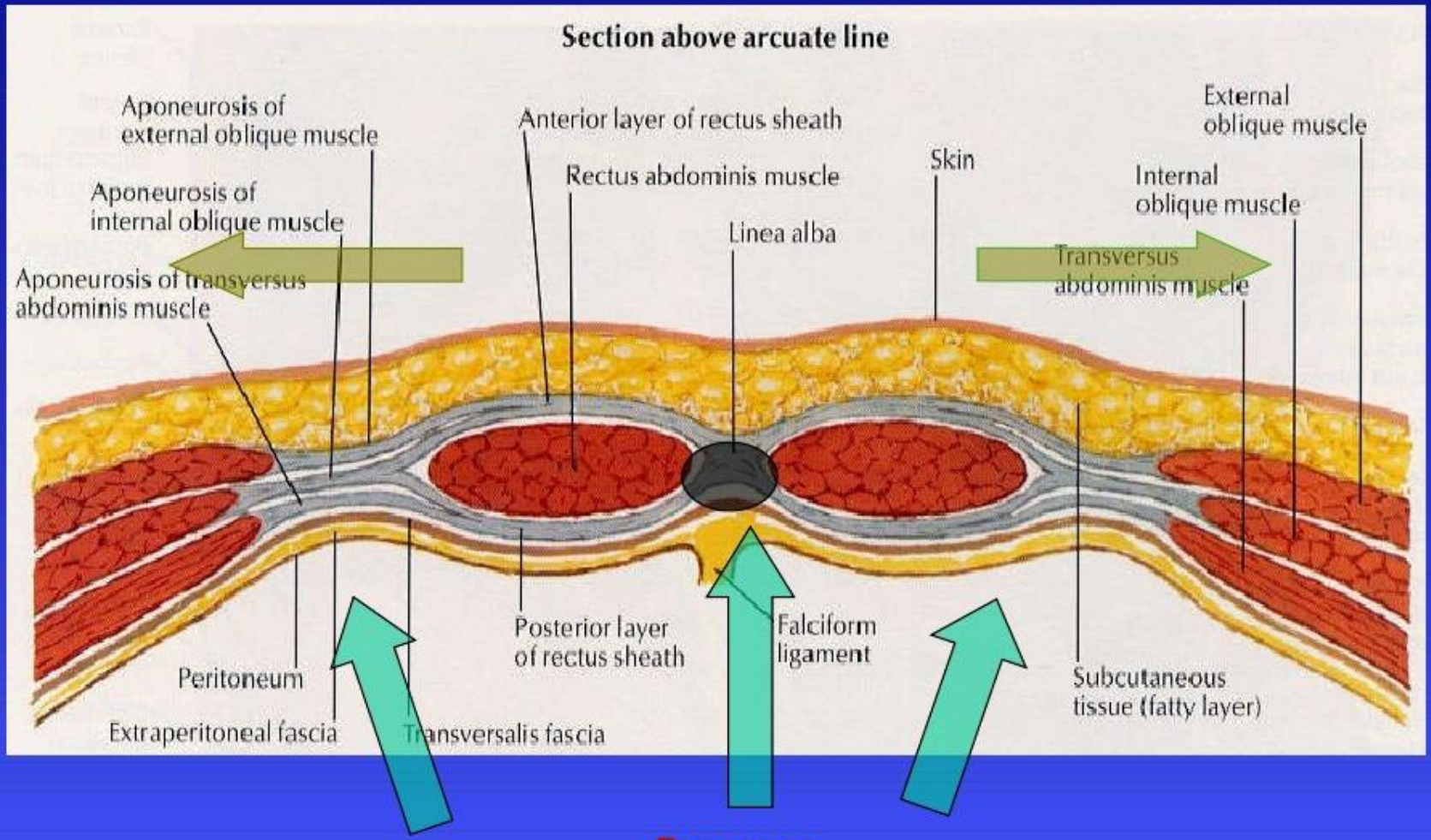

Typical Hernia
Hernia
Skin
Muscle
Fat
Intestine


After Repair with Mesh
Skin
Muscle
Mesh
Fat
Intestine

Application of Mesh



In humans the intra-abdominal pressure ranges from 0,2kPa (resting) to 20 kPa (maximum).

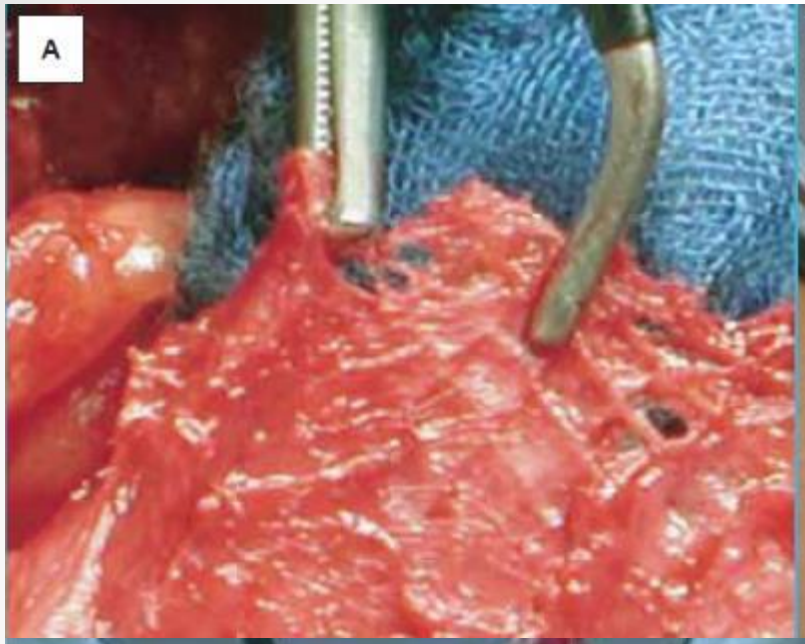


REGULAR MESH

- Polypropylene
- Monofilament
- Synthetic
- Non absorbable
- retains its strength indefinitely
- Pore Size: 0.85mm
- 120 Gr/Sqm Weight
- Burst Strength: 12Kg/SqCm = 1176 Kpa

LIGHT MESH

- Polypropylene
- Monofilament
- Synthetic
- Non absorbable
- retains its strength indefinitely
- Pore Size: 1.5-2mm
- 55 Gr/Sqm Weight
- Burst Strength: 10 Kg/SqCm = 980 Kpa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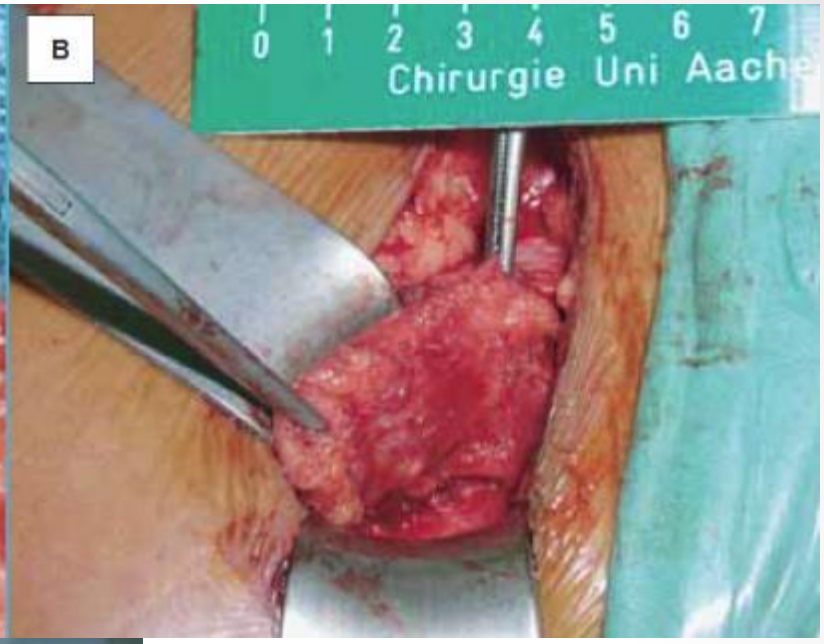
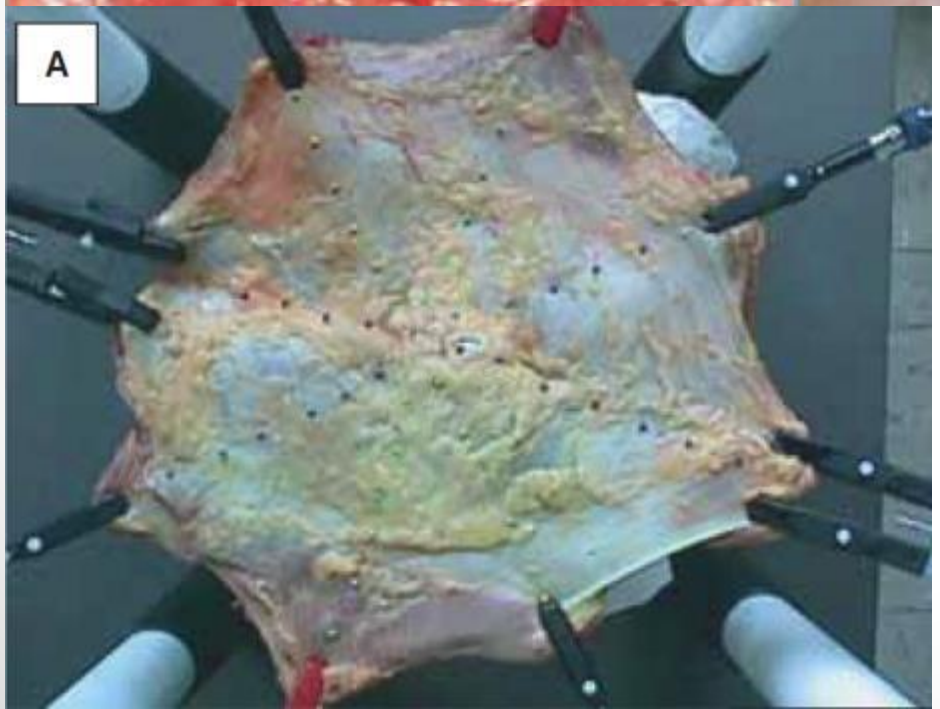

B
0 1 2 3 4 5 6 7
Chirurgie Uni Aache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COMPOSITE MESH

- Polypropylene + PGA
- Synthetic
- 50% absorbable + 50% Absorbable
- retains 50% Strength
- Pore Size: 1.2 mm
- 55 Gr/Sqm Weight
- Burst Strength: 10 Kg/SqCm = 980 Kpa