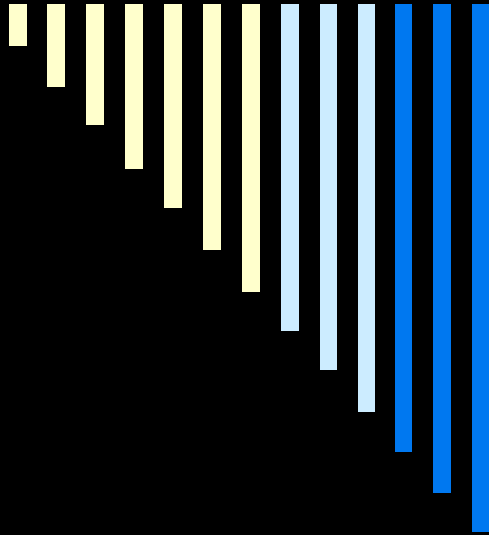


APPROACH TO HERNIA



Dr. R. K. Mishra



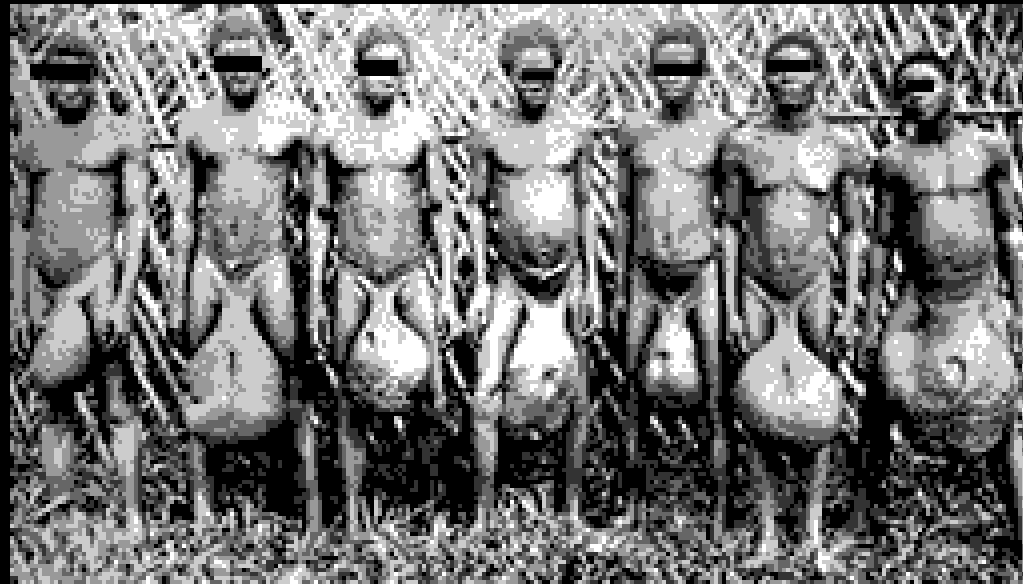


PRICE BEING PAID BY MANKIND FOR THE ERRECT POSTURE



HISTORY

- ❑ Operations began as early as 800 BC in India.
- ❑ 19th century - Edoardo Bassini - Italian
- ❑ 1983 – Tension Free Repair
- ❑ 1987 – Laparoscopic Repair



CLASSIFICATION

SITE:

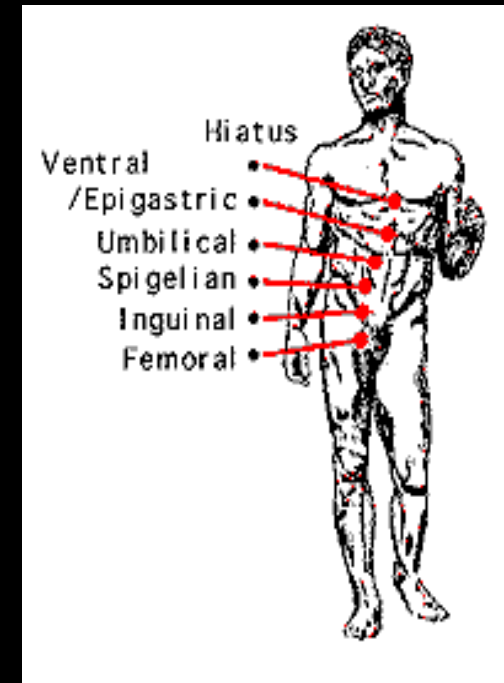
Inguinal, Femoral, Umbilical,
Epigastric, Hiatal, Lumbar etc.

OCCURRENCE:

Primary, Recurrent, Incisional

CLINICAL:

Reducible, Irreducible, Obstructed,
Strangulated





TREATMENT OF HERNIA AS OLD AS HISTORY OF MEDICINE



Medscape ©

<http://www.medscape.com>



TREATMENT

- **Conservative**
seldom indicated
- **Surgery**
 - **Open**
 - **Laparoscopic**
 - **Totally Extra Peritoneal (TEP)**
 - **Trans Abdominal Pre Peritoneal (TAPP)**

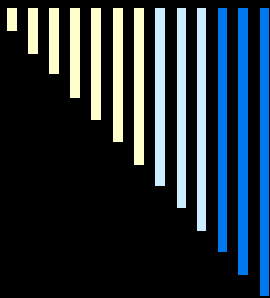


TAPP Versus TEP

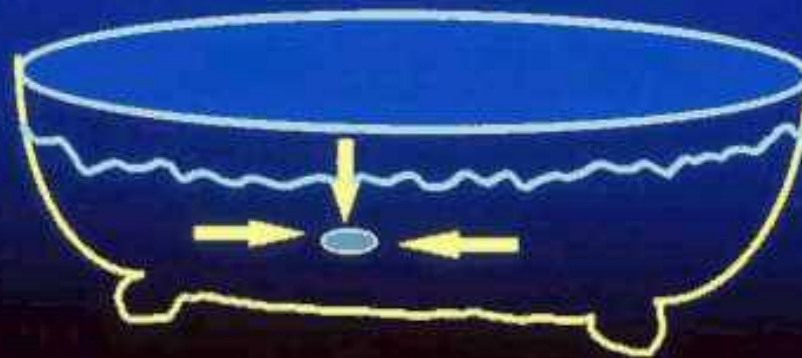
Currently, Total extraperitoneal repair of hernia is considered the method of choice.

Transabdominal preperitoneal repair is technically easier than Total extraperitoneal repair.





Pascal's Principle Hydrostatic Pressure

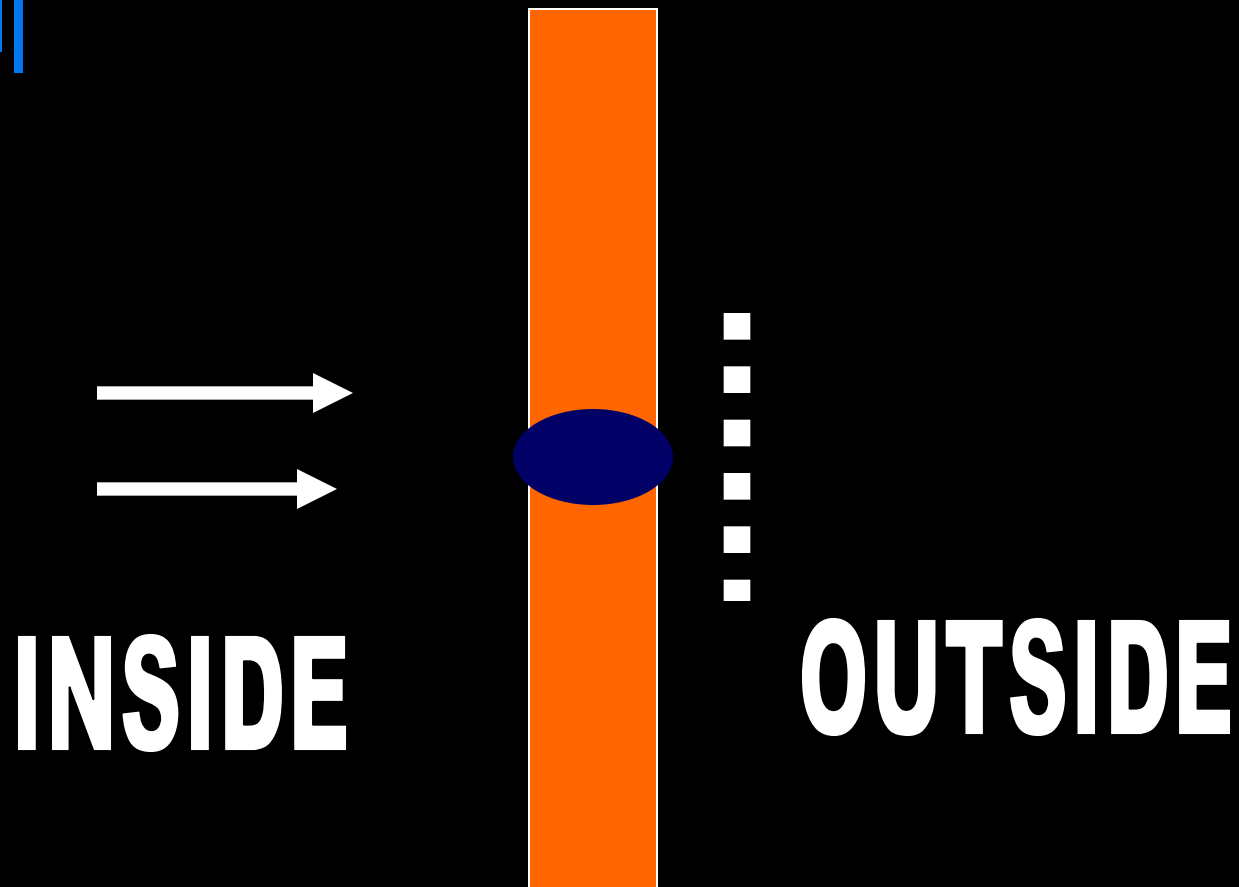


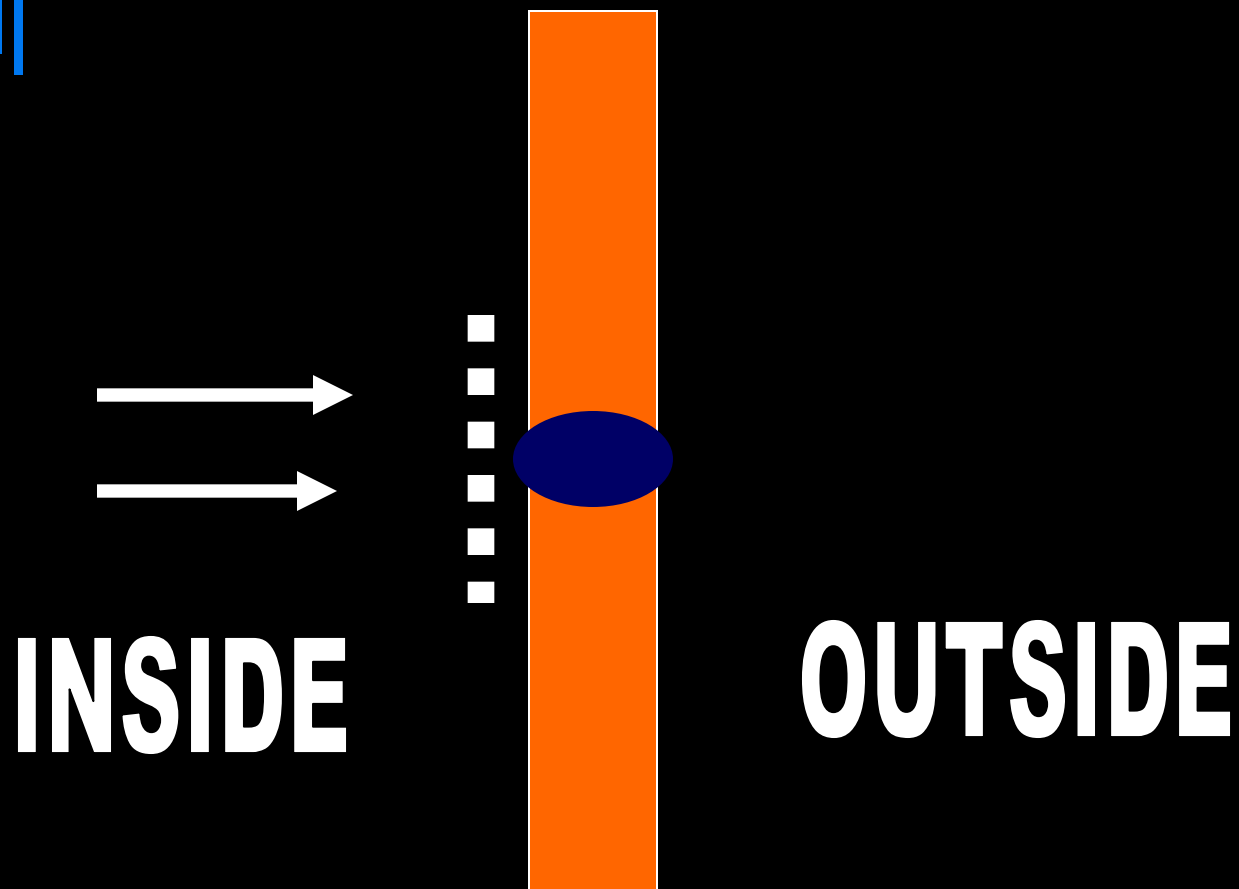
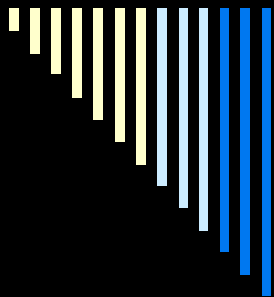
Medscape ®

<http://www.medscape.com>

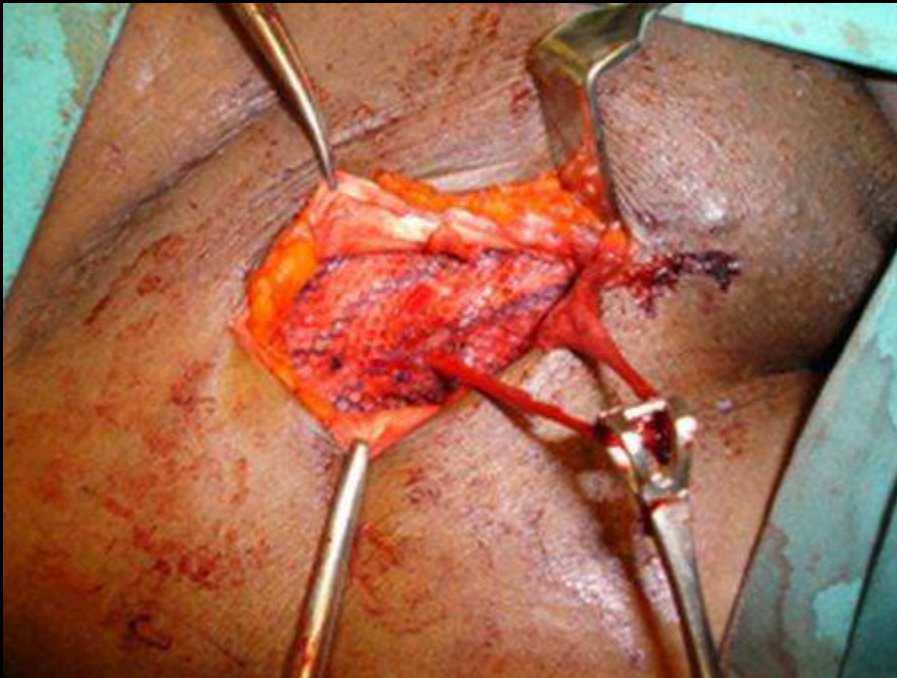


HERNIA





Laparoscopic repair is better



Open herniorrhaphy results in more complications than the laparoscopic approach, according to the results of a five-year follow-up of a randomized trial published in the May 10 2003 issue of the *British Medical Journal*.

BMJ. 2003;326:1012-1013



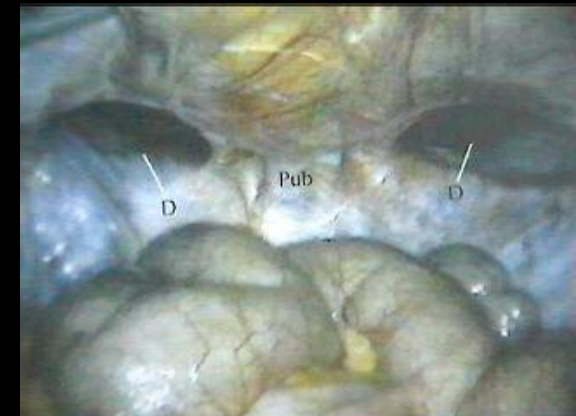
Advantages

1. **Tension free repair that reinforces the entire myo-pectineal orifice.**
2. **Less tissue dissection and disruption of tissue planes**
3. **Less pain postoperatively.**
4. **Low intra & post-operative complications.**
5. **Early return to work.**



Indication

- ❑ Bilateral Hernia
- ❑ Recurrent Hernia
- ❑ Multiple Hernias
- ❑ Femoral Hernia
- ❑ Primary Inguinal Hernia (Direct or Indirect)



Contraindications

- ❑ Massive Scrotal hernia
- ❑ Non reducible, Incarcerated Inguinal Hernia
- ❑ Prior laparoscopic herniorrhaphy
- ❑ Prior pelvic lymph node resection
- ❑ Prior Groin Irradiation





RECOMMENDATIONS

FIT FOR GA

- BILATERAL – LS
- RECURRENT – LS
- UNILATERAL –
LS/OS
- STRANGULATED –
OS

UNFIT FOR GA SPINAL

- SMALL – LS/OS
- LARGE – OS

LOCAL

- OS



Anatomy

Median Umbilical Ligament

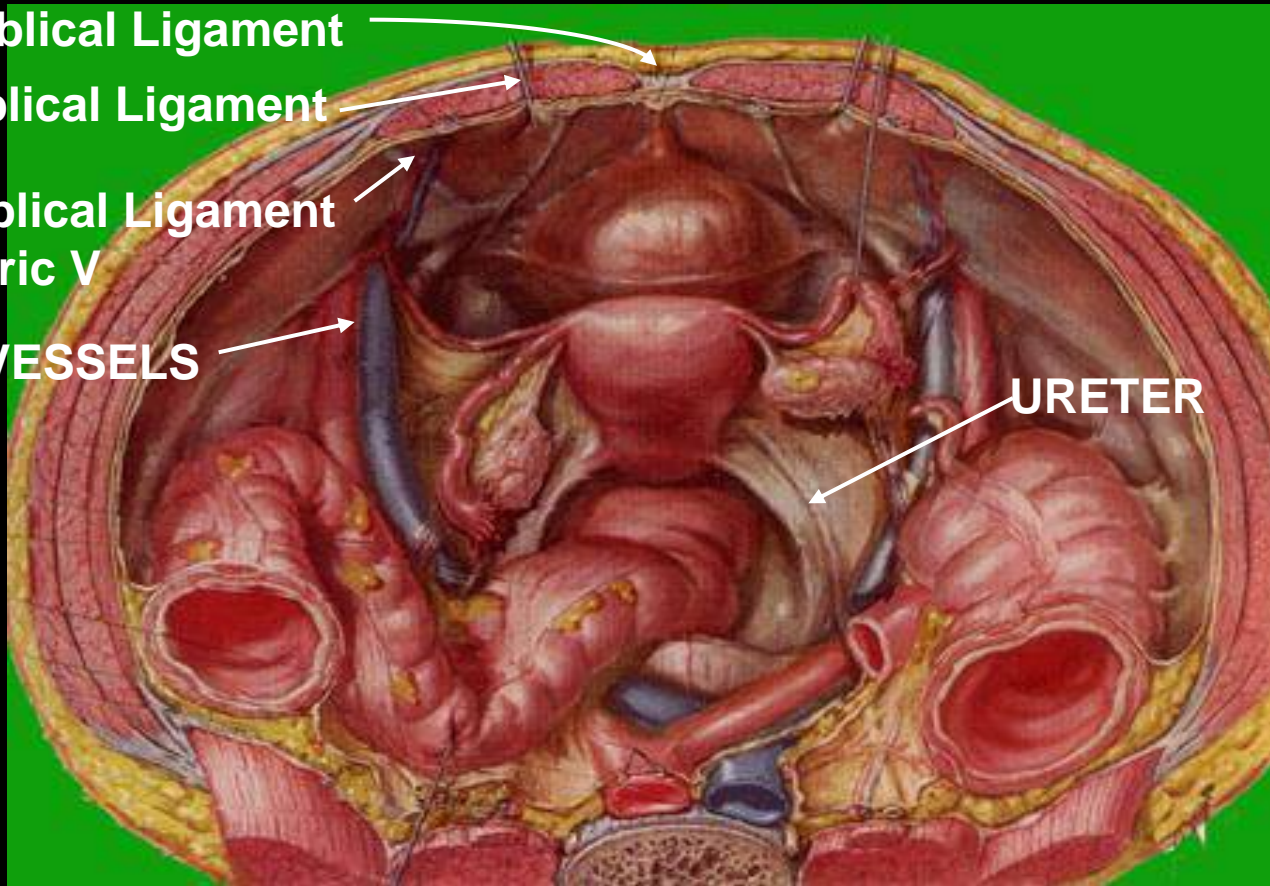
Medial Umbilical Ligament

Lateral Umbilical Ligament

Inf. Epigastric V

EXT.ILIAC VESSELS

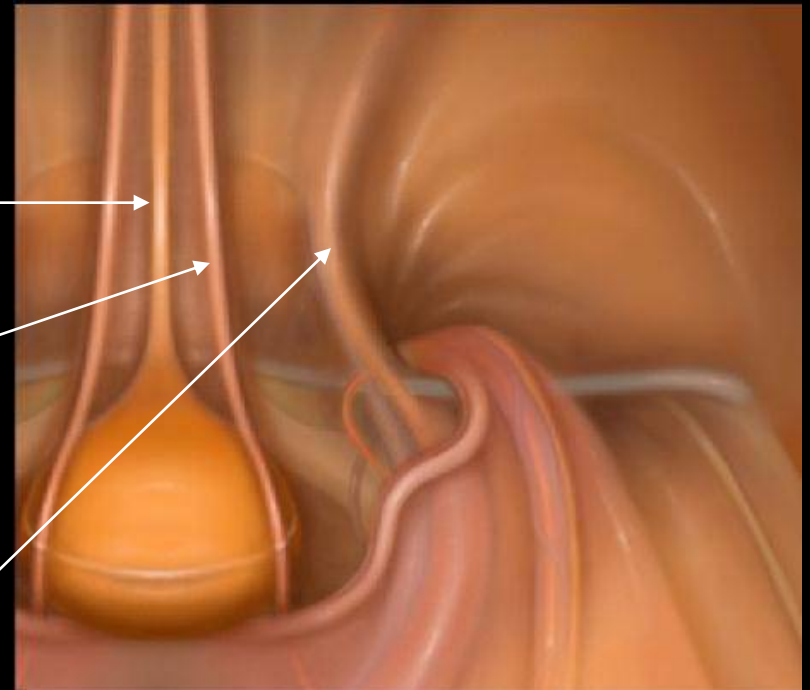
URETER



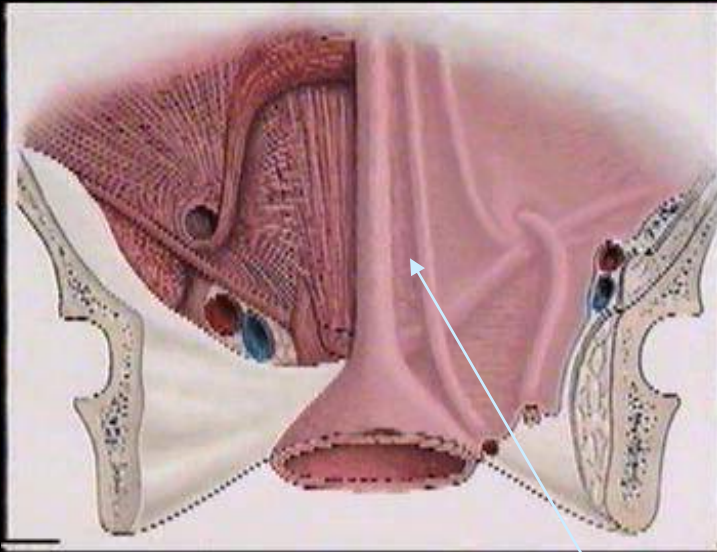
Anatomy

LIGAMENTS:

- ❑ 1. Median Umbilical Ligament-Obliterated Urachus
- ❑ 2 Medial Umbilical Ligament-Obliterated umbilical arteries
- ❑ 3. Lateral Umbilical Ligament- Inferior epigastric vessels.



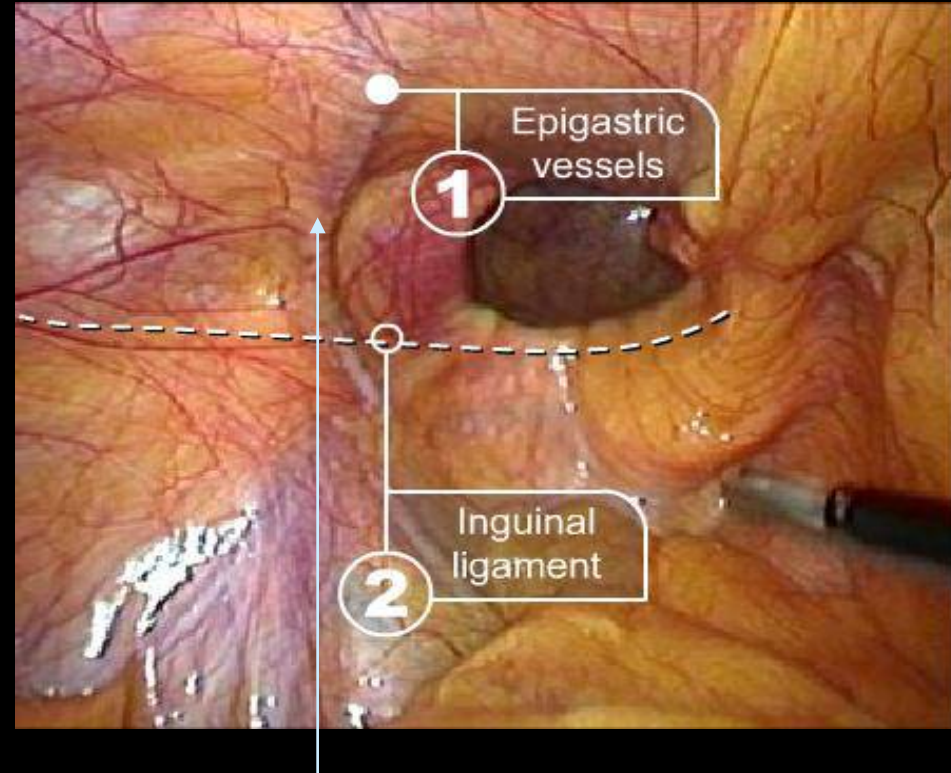
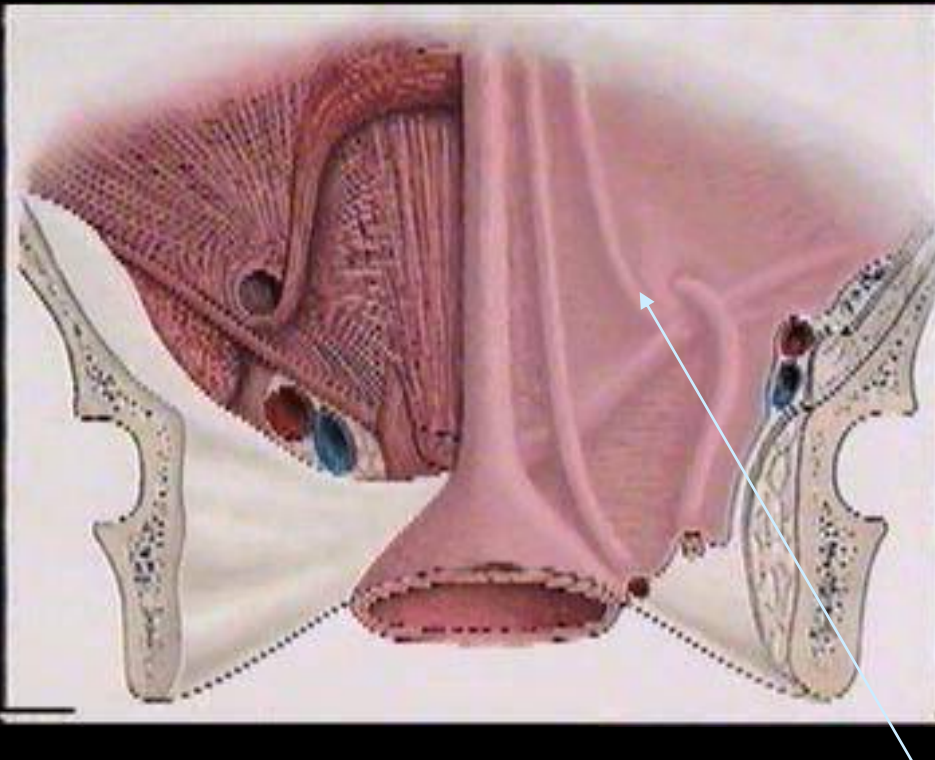
Anatomy



First Identify Medial Umbilical Ligament



Anatomy

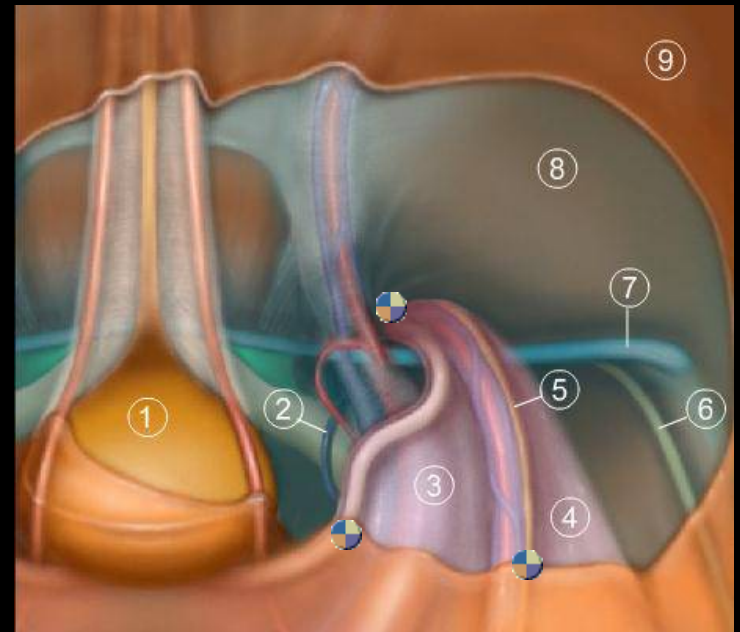


Then Identify Lateral Umbilical ligament for Inferior epigastric vessels

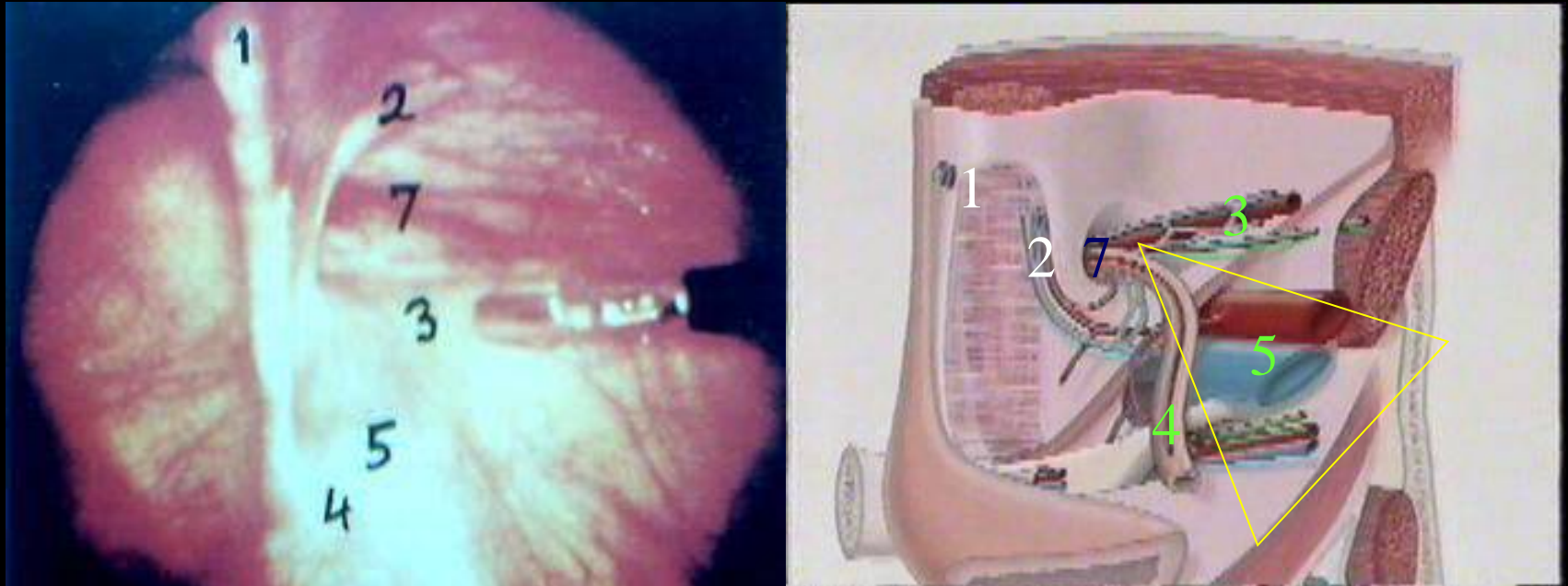


Anatomy

1. Urinary bladder
2. Corona mortis vein
3. Spermatic sheath
4. External extension of the urogenital fascia
5. Genital branch of the genitofemoral nerve
6. Femoral cutaneous nerve
7. Inguinal ligament
8. Transversalis fascia
9. Peritoneum

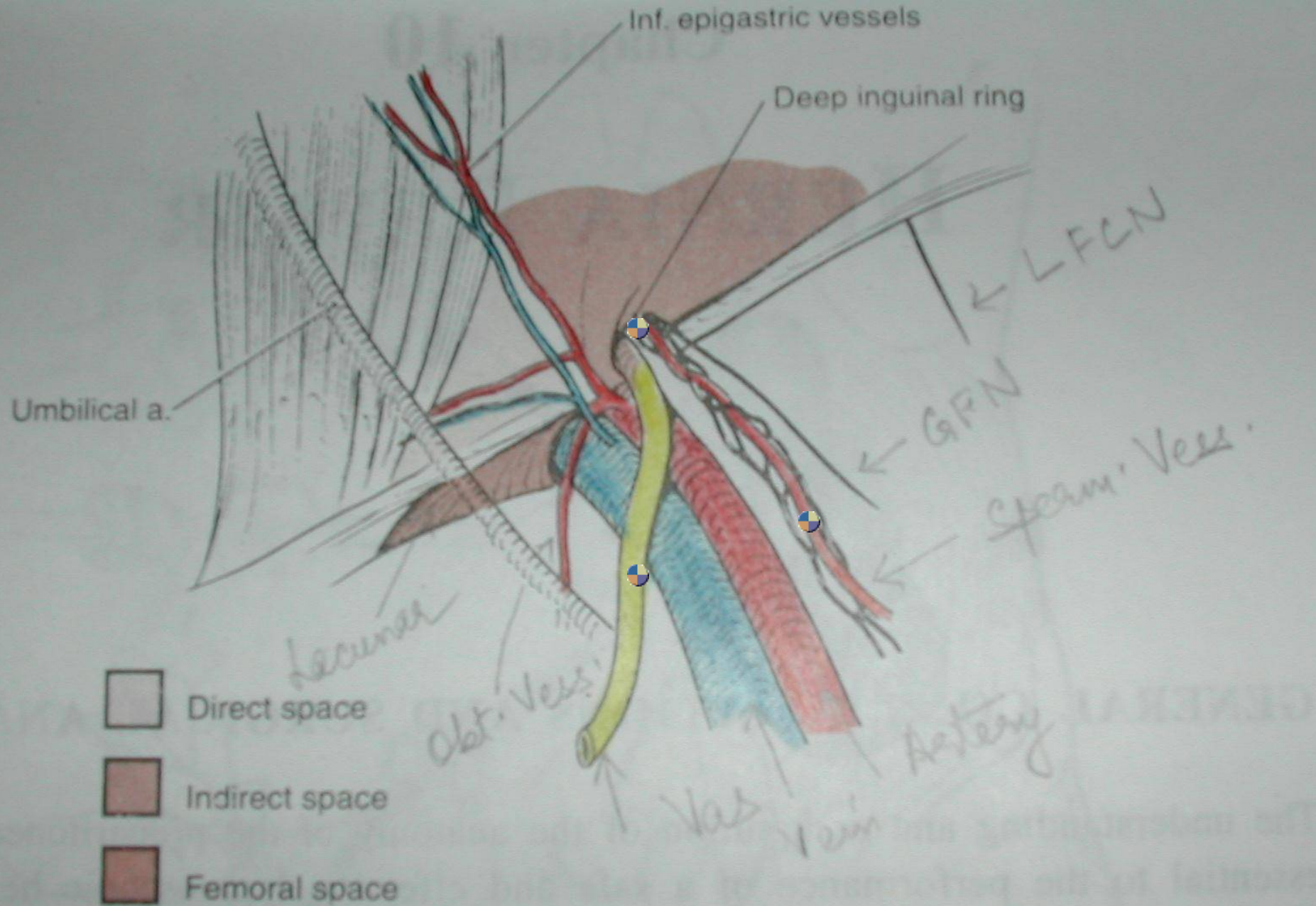


Triangle of Doom



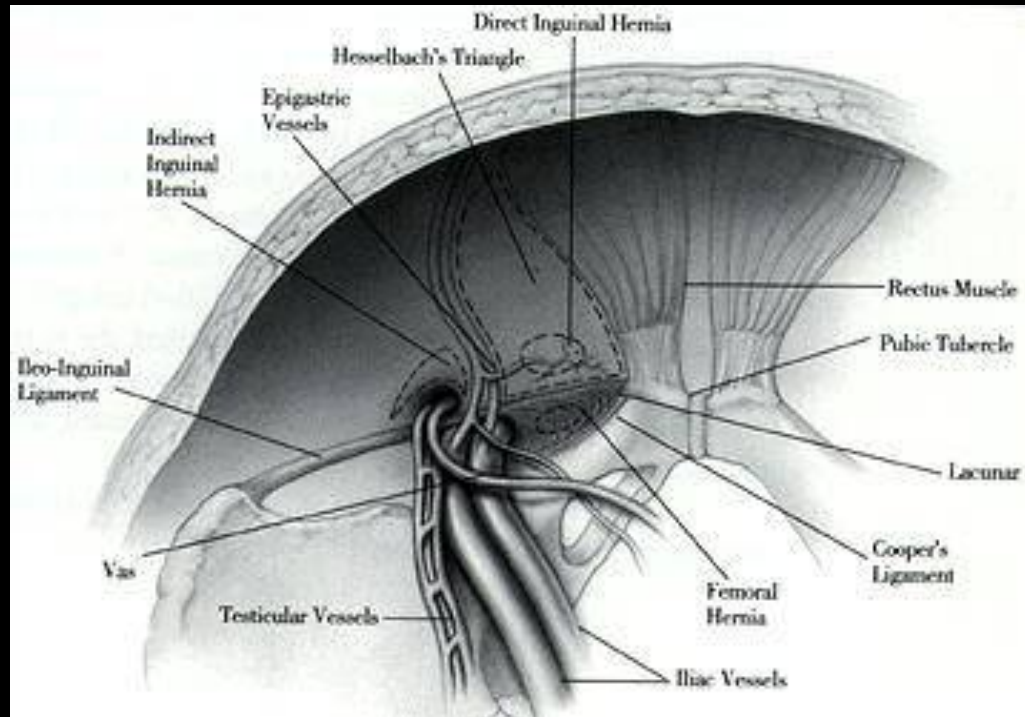
1. Medial umbilical ligament, 2. Inferior Epigastric vessels, 3. Spermatic vessels, 4. Vas deferens, 5. External iliac vessels in “Triangle of Doom”, 7. Indirect defect,





0.2 Hernia spaces.

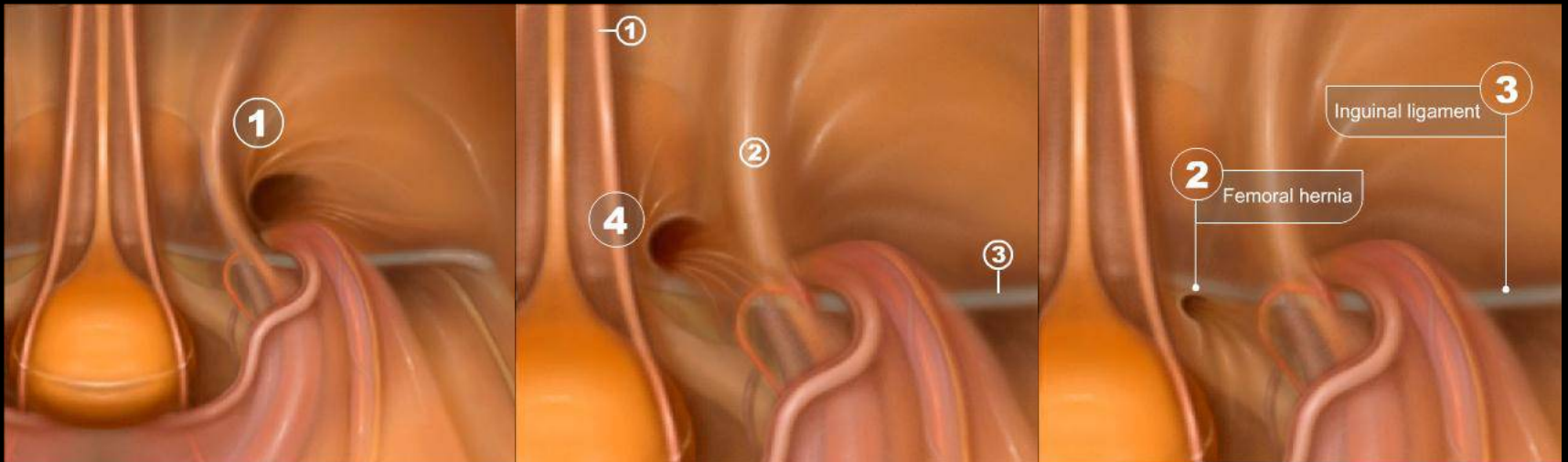
Left side Anatomy



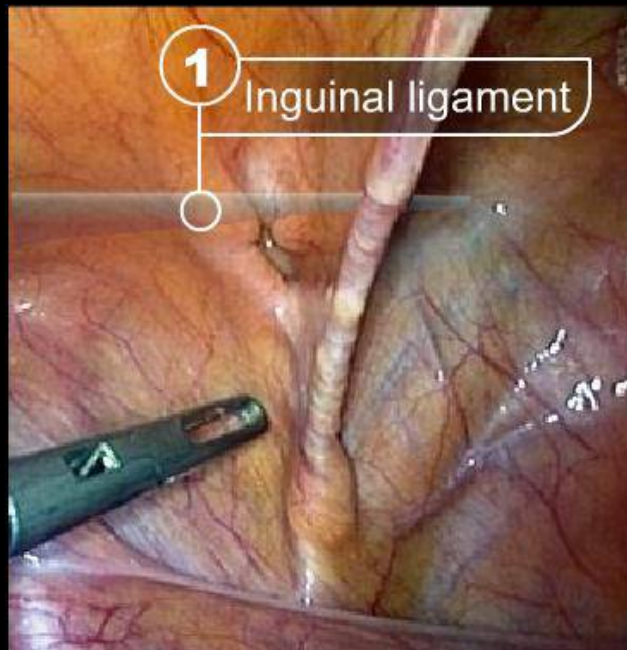
Key landmark to differentiate between direct and indirect inguinal hernia



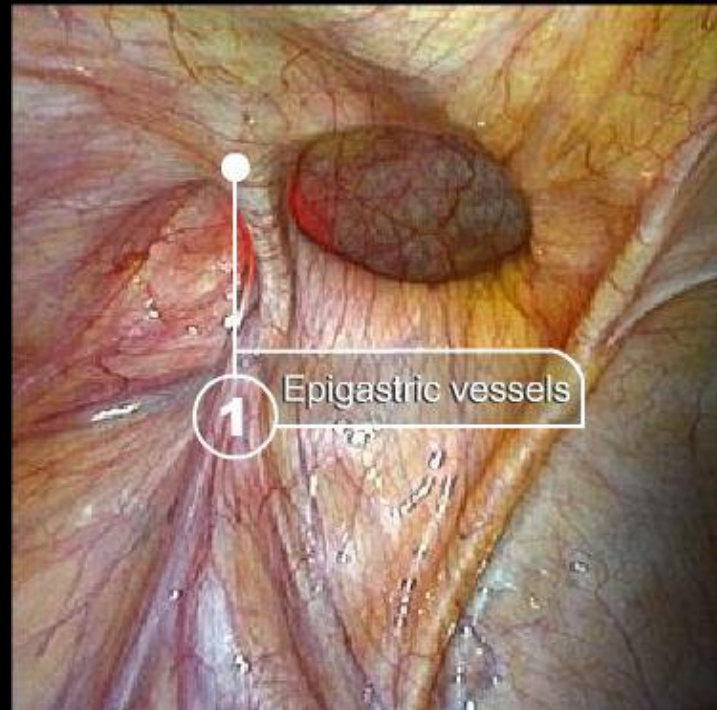
Anatomy



Femoral and Sliding Hernia



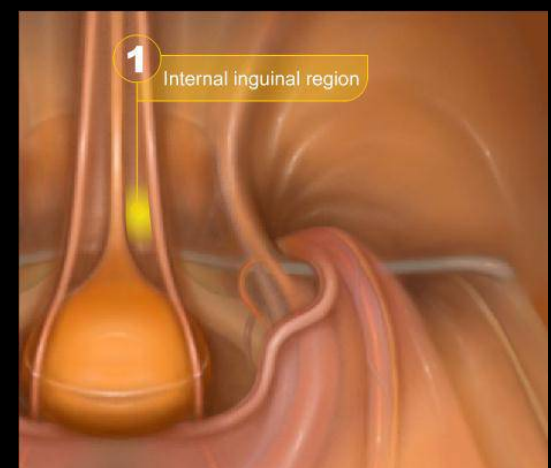
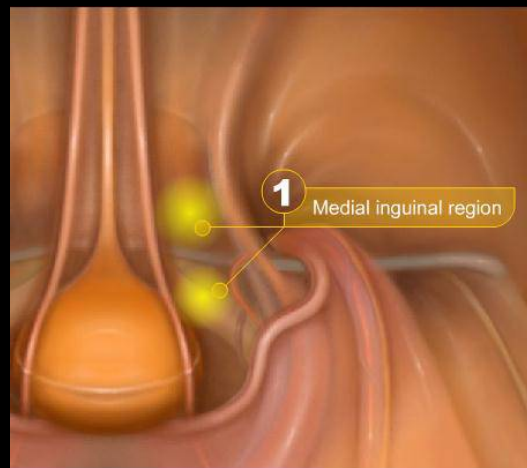
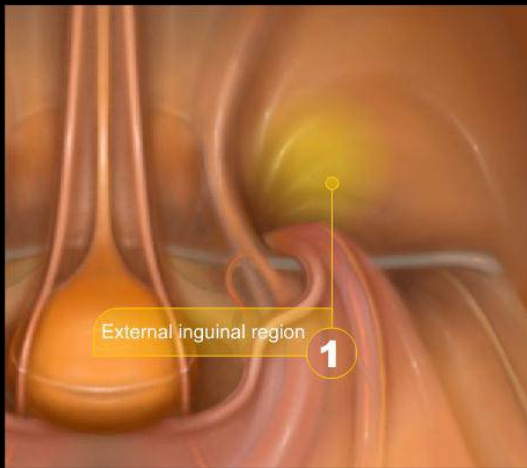
Pantaloon Hernia



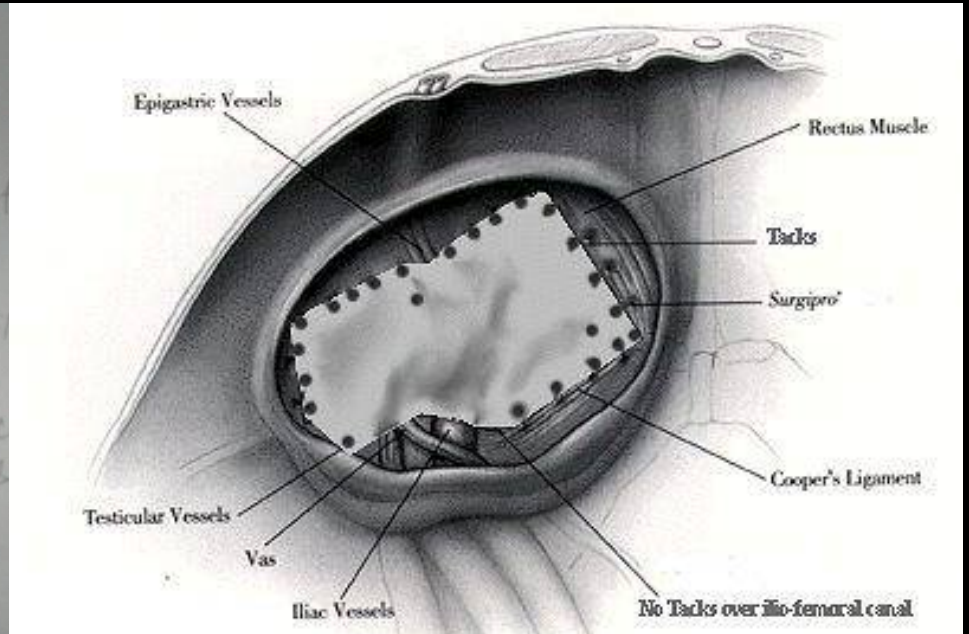
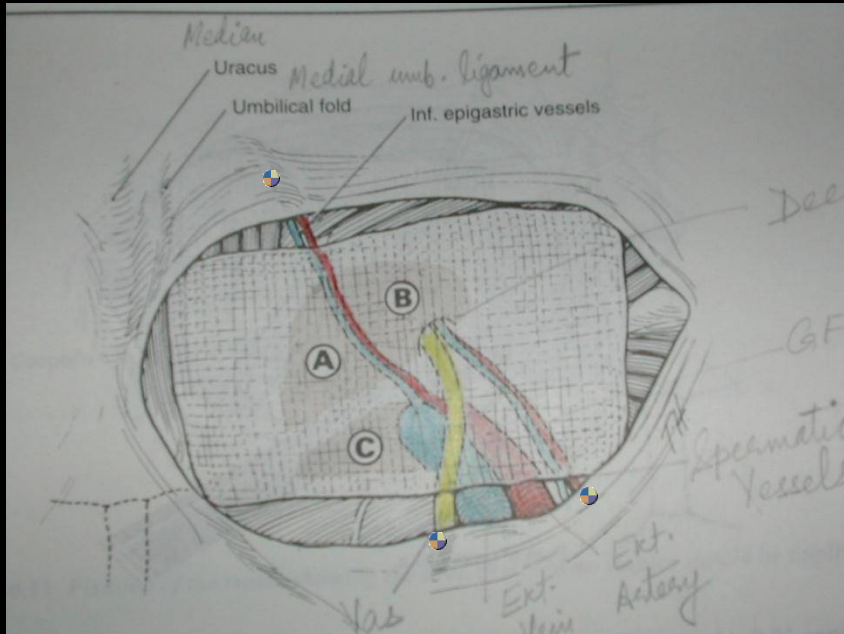
They are also called pantaloon hernias, because they overlap the epigastric vessels. They are associated with an intimate adhesion of the sac to the epigastric vessels which may be injured during the dissection.



Laparoscopic Classification

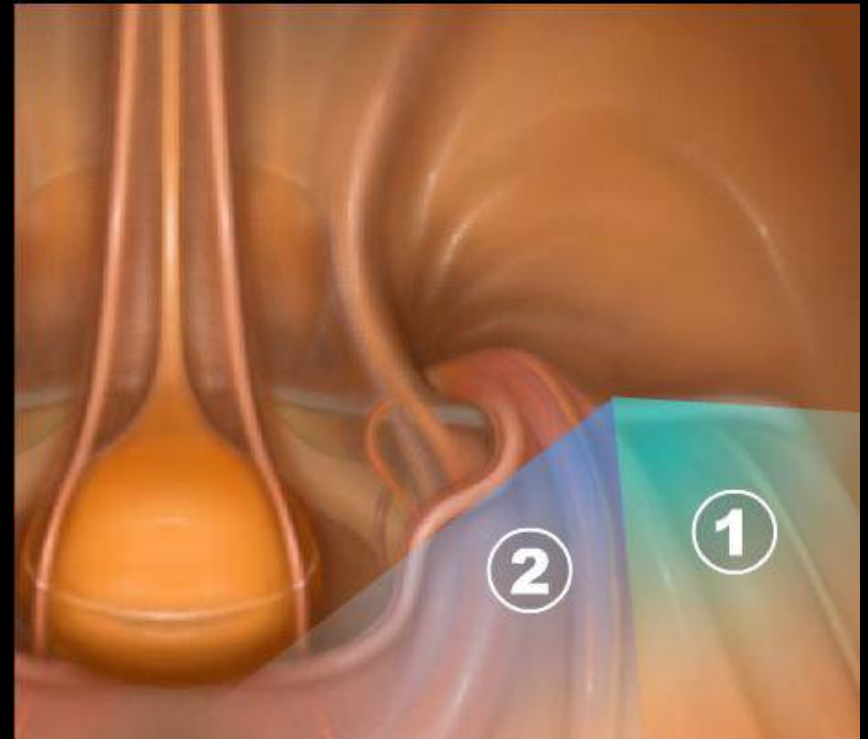


Mesh



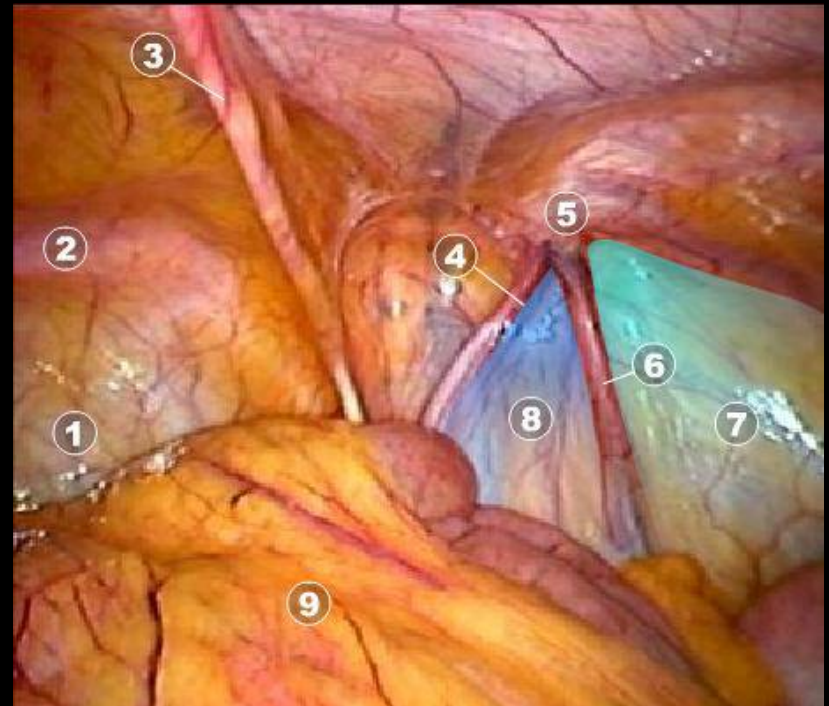
Anatomy

- TRIANGLE OF DOOM
 - Iliac Vessels
- TRIANGLE OF PAIN
 - GFN and LFCN
- TRAPEZOID OF DISASTER
 - abnormal Obturator artery.



Anatomy

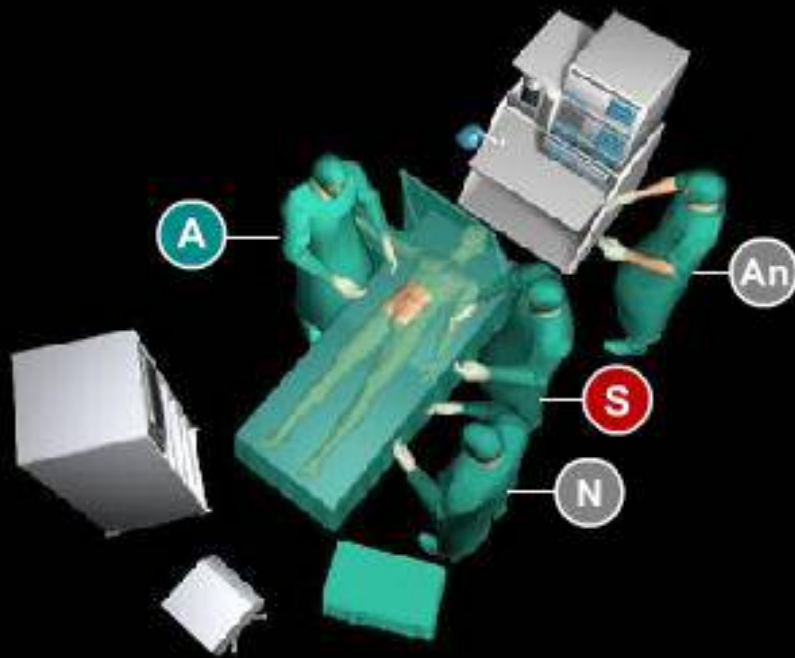
1. Urinary bladder
2. Pubis
3. Umbilical artery
4. Ductus deferens
5. Internal inguinal ring
6. Spermatic vessels
7. Triangle of Pain
8. Triangle of Doom
9. Omentum



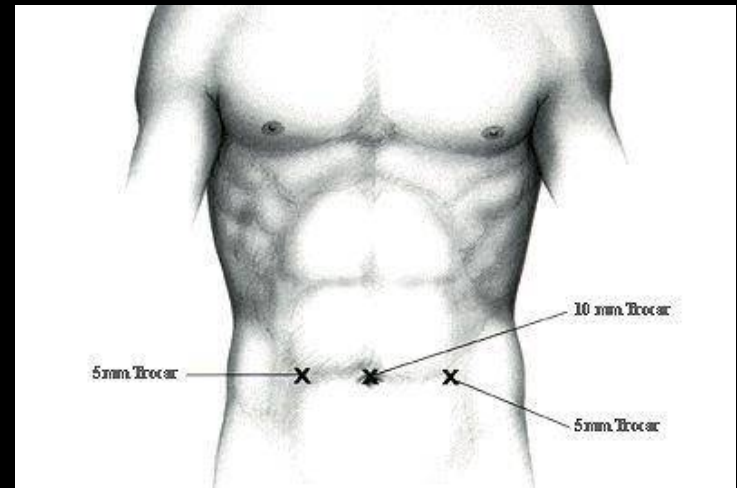
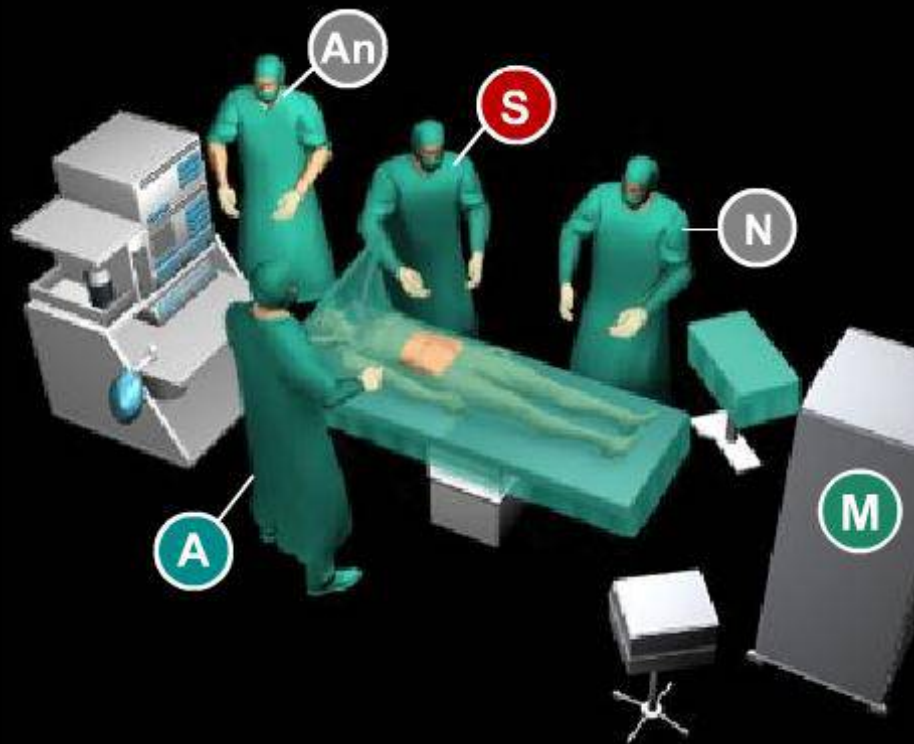
Diagnosis



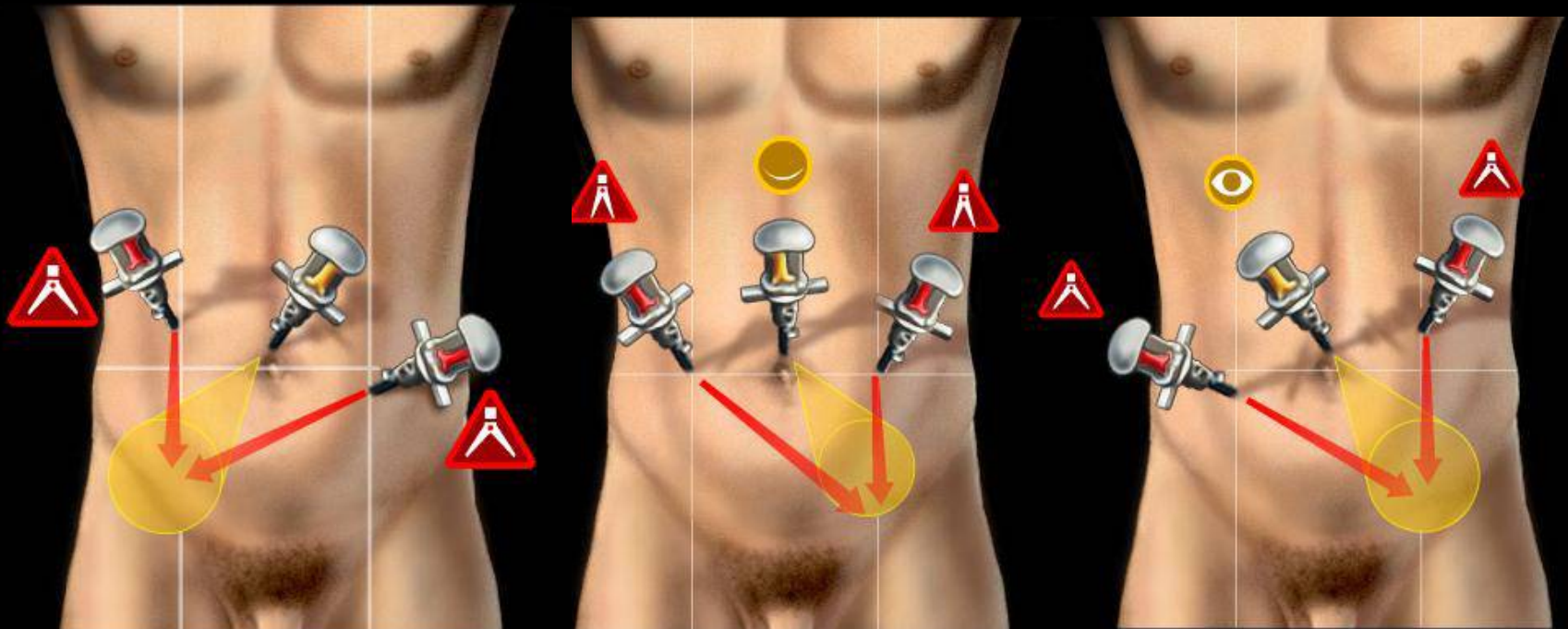
Position of surgical team



Position of surgical team



Port Position



Port position



Trans abdominal Pre Peritoneal





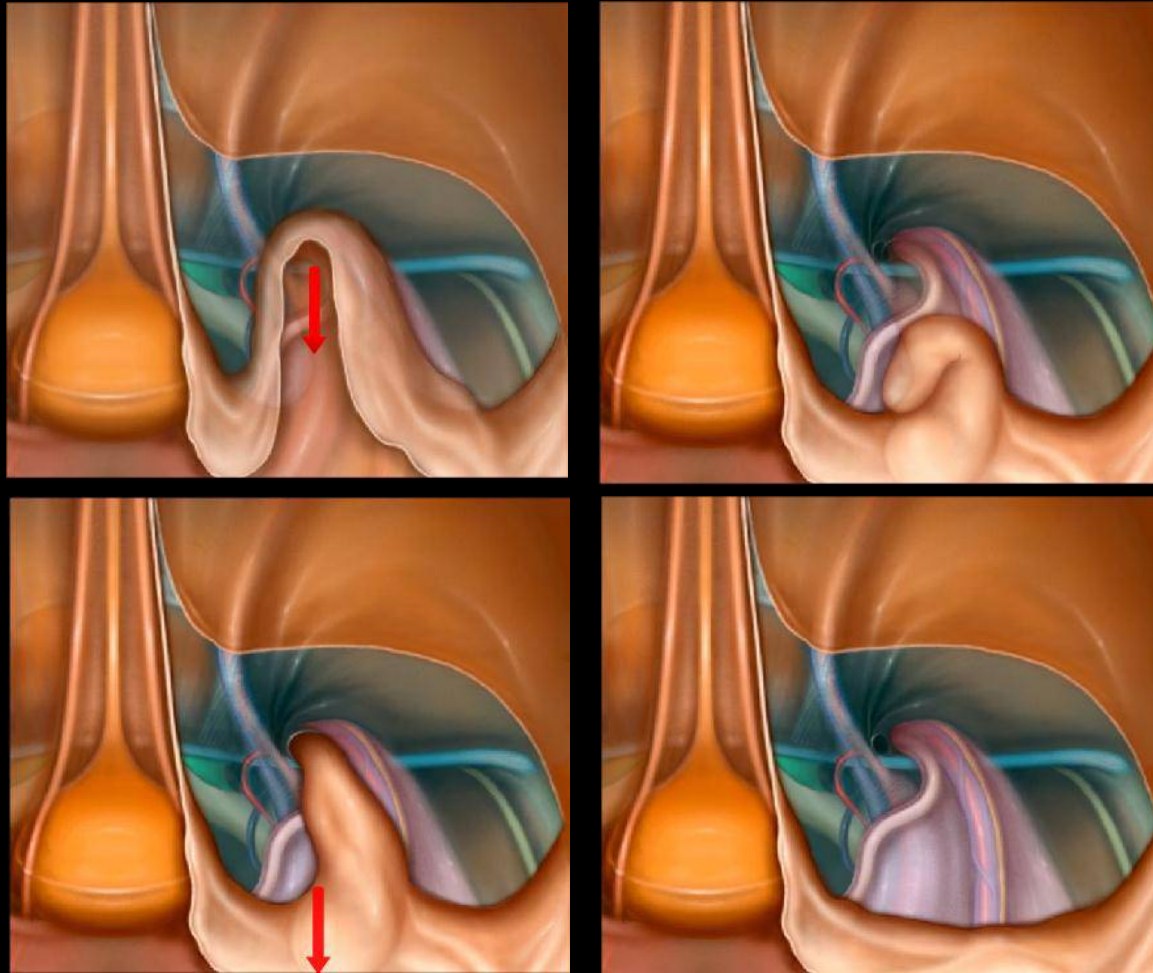
Steps of TAPP

Opening the pre-peritoneal space

- Incision begins just above and 4 cm lateral to the outer margin of the deep ring
- Peritoneum incised medially almost up to the midline
- Epigastric vessels should be safe guarded



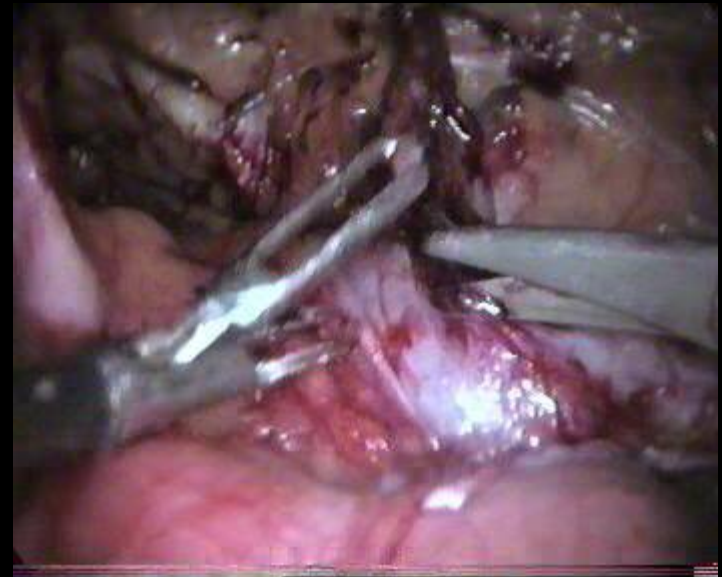
Hernia sac Dissection



Steps of TAPP

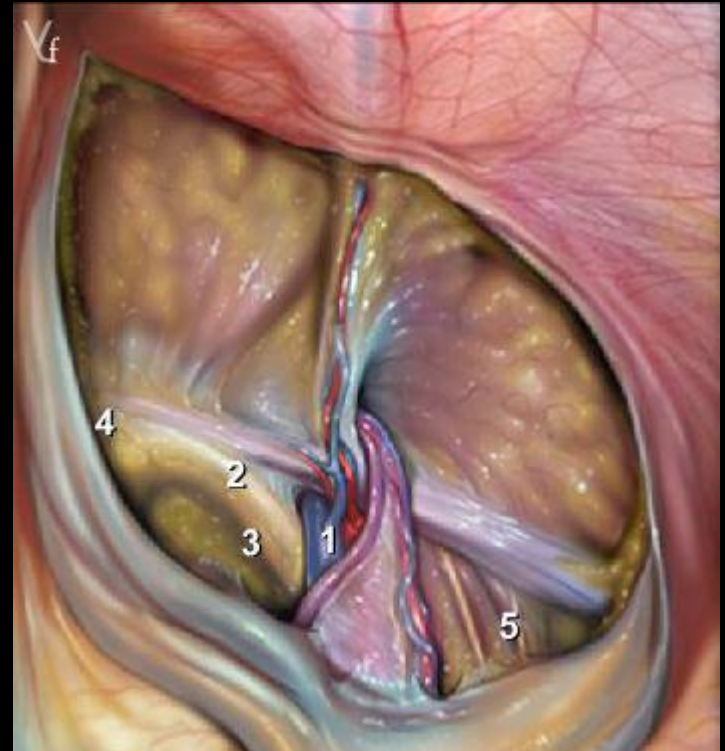
Dissection of pre-peritoneal space

- Dissect the peritoneal flap towards the iliac vessels inferiorly & towards anterior abdominal wall superiorly.
- Cooper's ligament, arch of transverses abdominus, conjoint tendon & iliopubic tract should be seen.
- Separate the elements of the spermatic cord from the peritoneal sac.

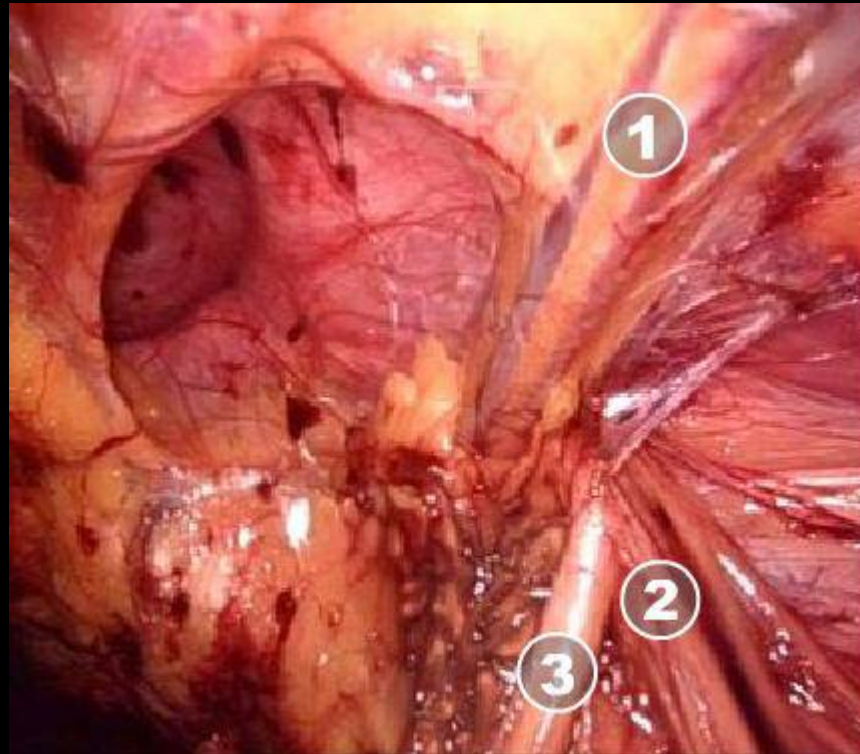


View at the end of Hernia sac dissection

the iliac vessels (1), the pectineal ligament (2) and the posterior surface of the iliopubic tract (3), the posterior aspect of the pubis (4) and the psoas muscle (5) covered by its fatty tissue.

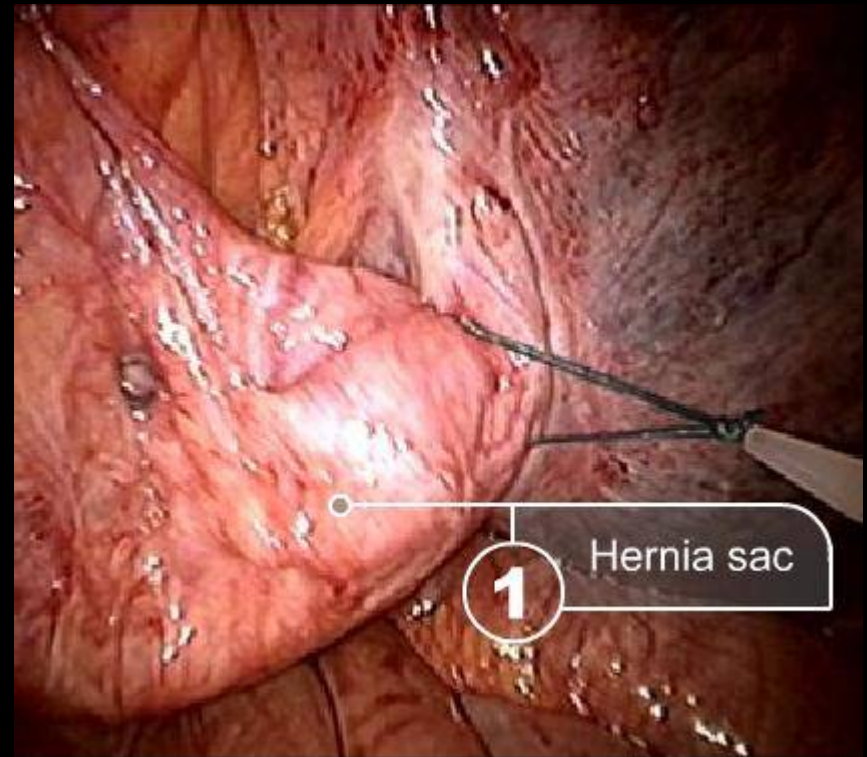


View at the end of Hernia sac dissection



Voluminous Hernia

Endoloop is applied in case of voluminous hernia

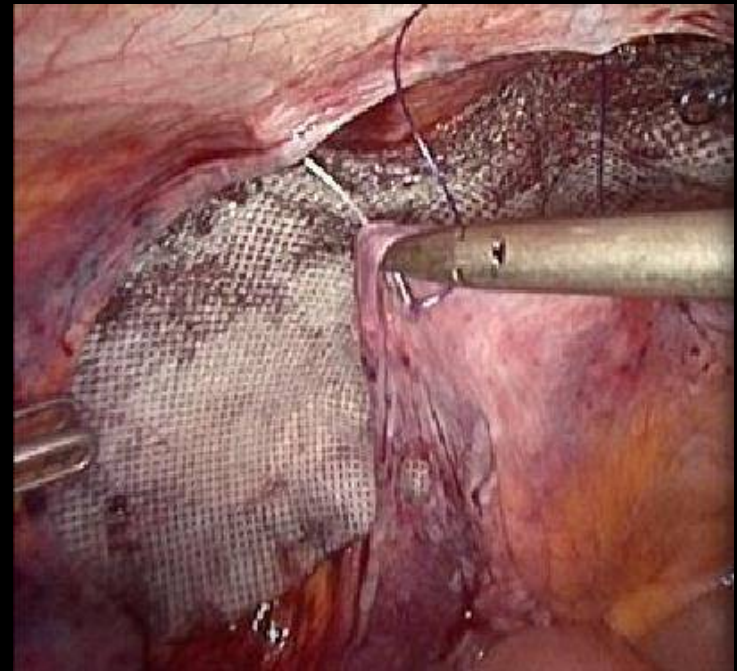
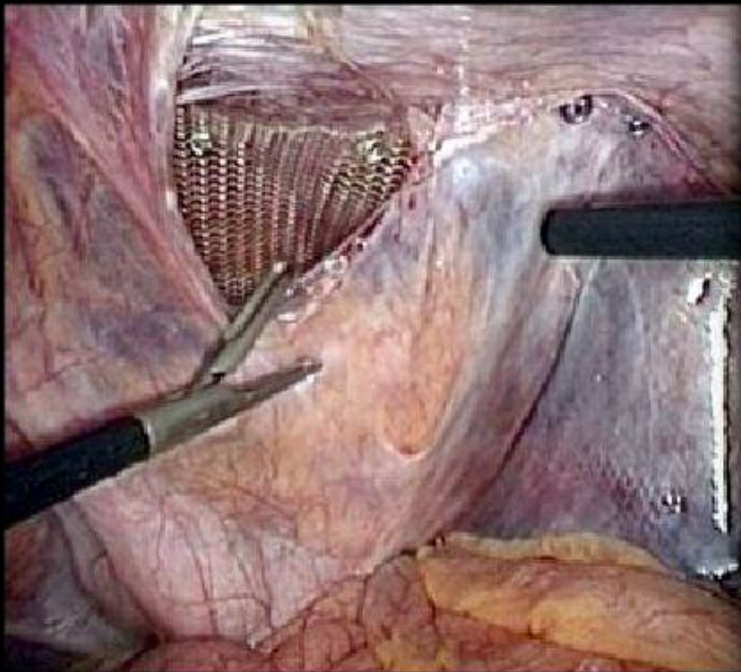


Steps of TAPP Placement of Mesh

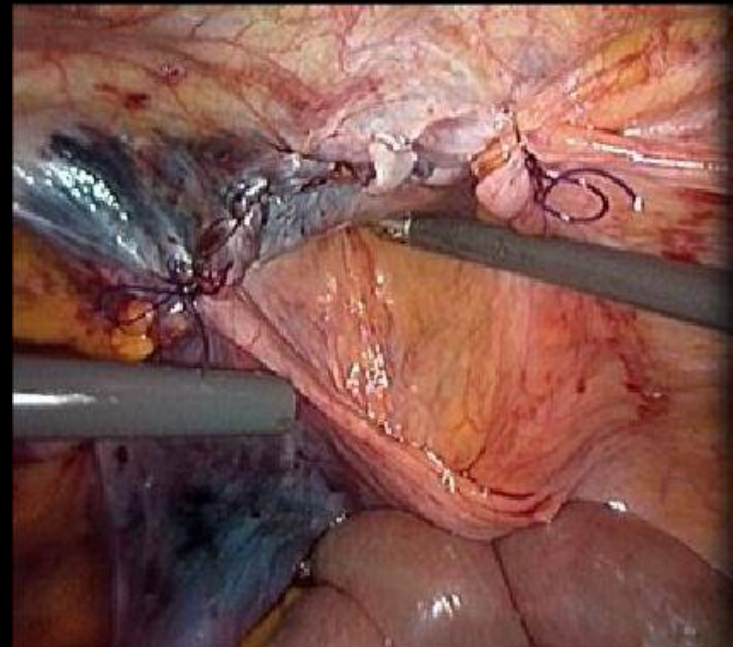
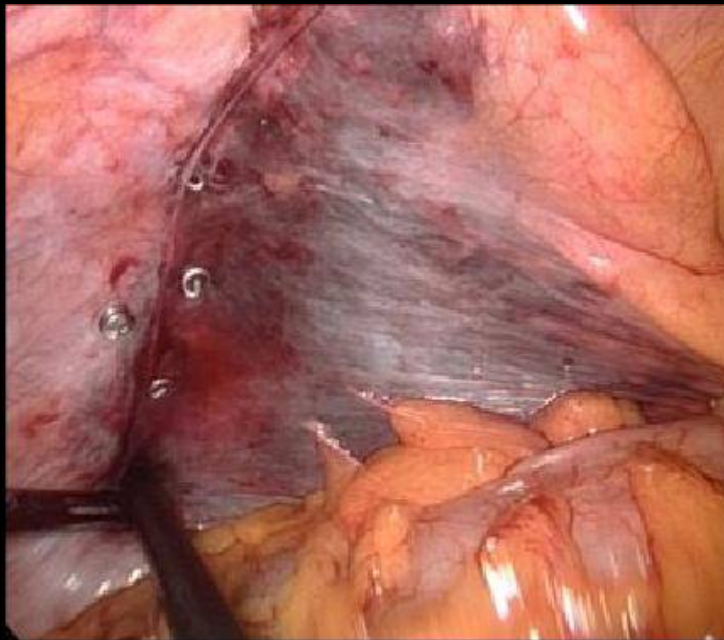
- ❑ Cut the mesh in appropriate Size usually 7 - 11 Cm.
- ❑ Roll the mesh and load backward in one of the port.
- ❑ Unroll it when it reaches in Peritoneal cavity
- ❑ Fix the mesh by stapling or suturing first its middle part 3 finger above the superior limit of the internal ring

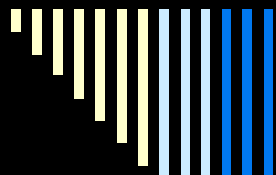


Closure of Peritoneum

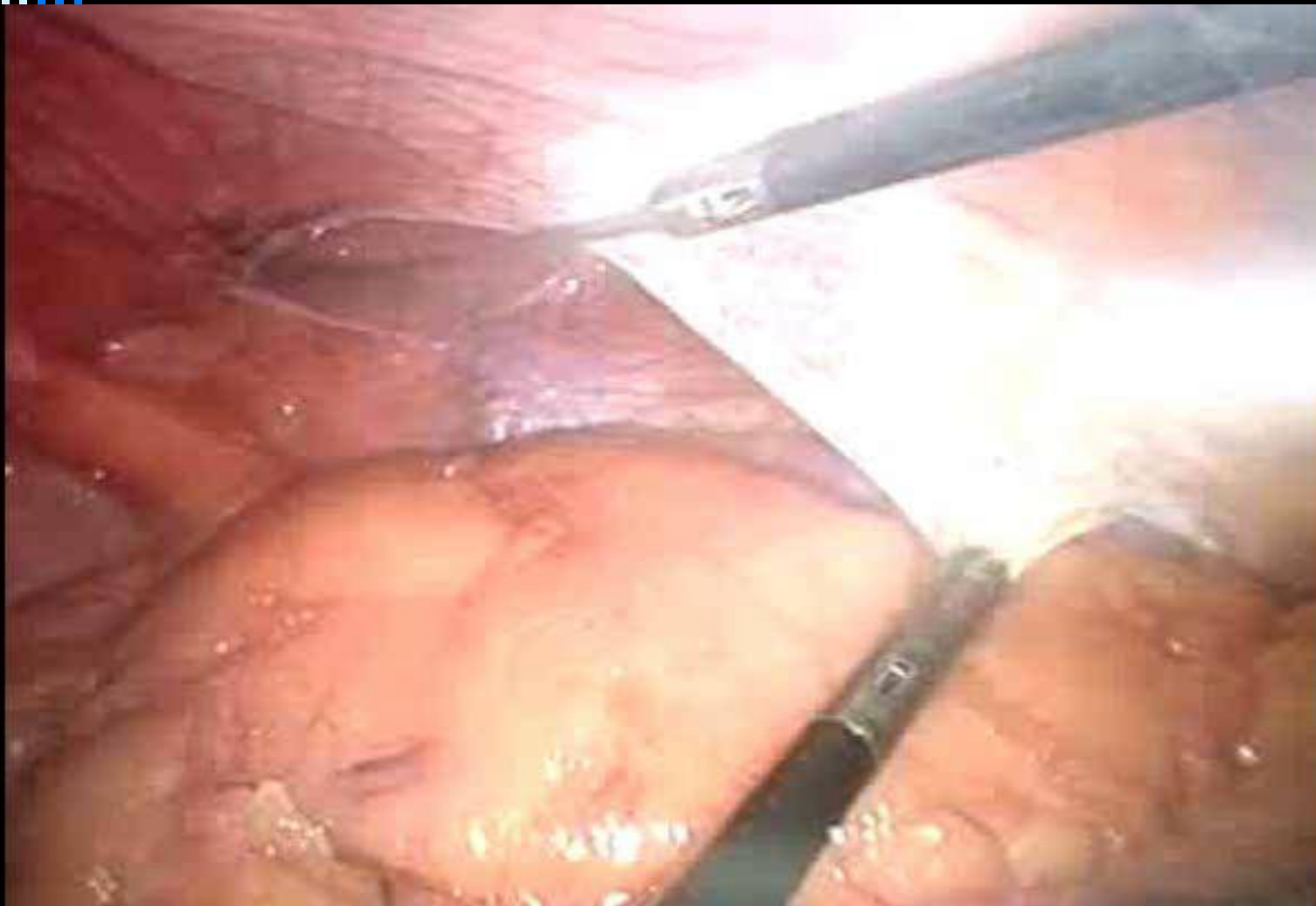


Closure of Peritoneum





Procedure



Complication

□ Immediate

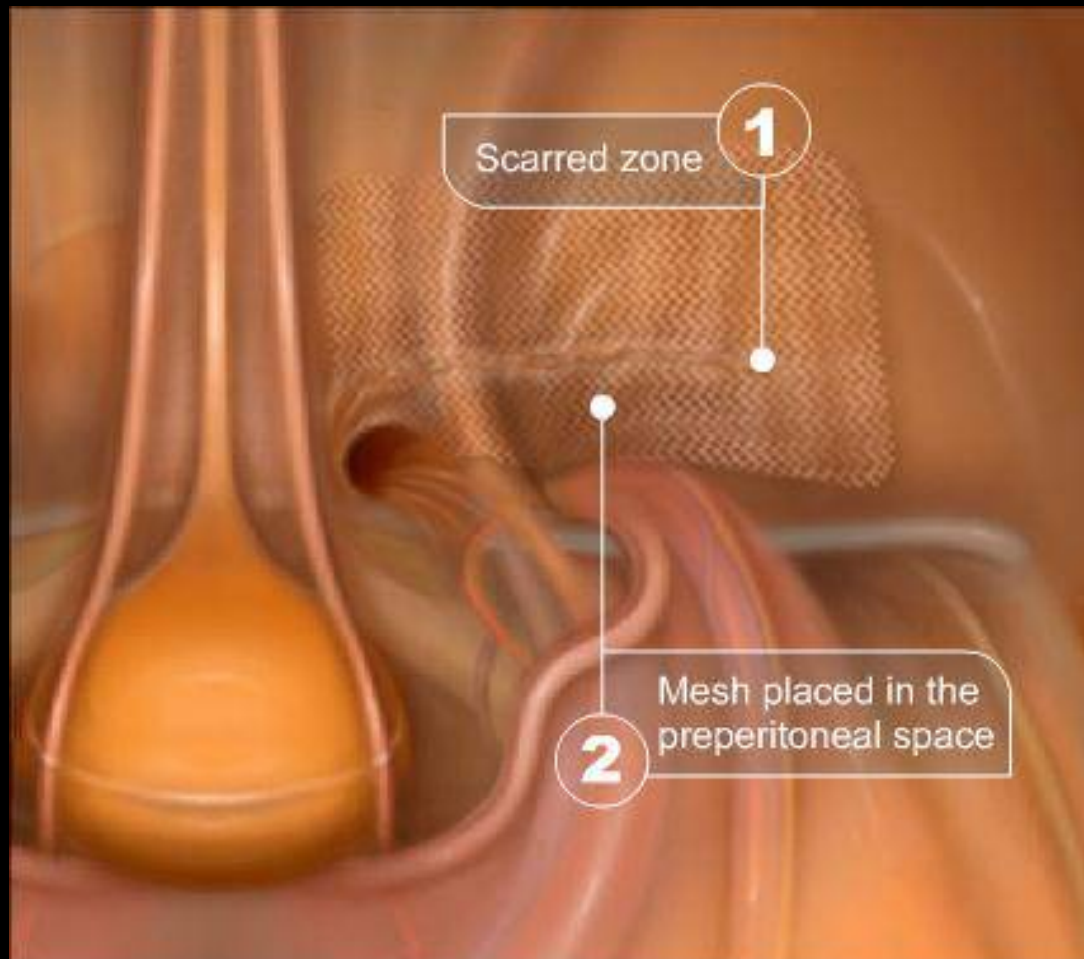
- Visceral Injury
- Vascular Injury
- Injury to Vas, Spermatic vessels

□ Late

- Bowel Adhesions to mesh
- Intestinal Obstruction
- Fistulisation
- Orchitis
- Testicular atrophy
- Nerve entrapment
- Incisional Hernia
- Recurrence



Recurrent Hernia



Excessive Use of Implant



Complication

- Vascular Injury

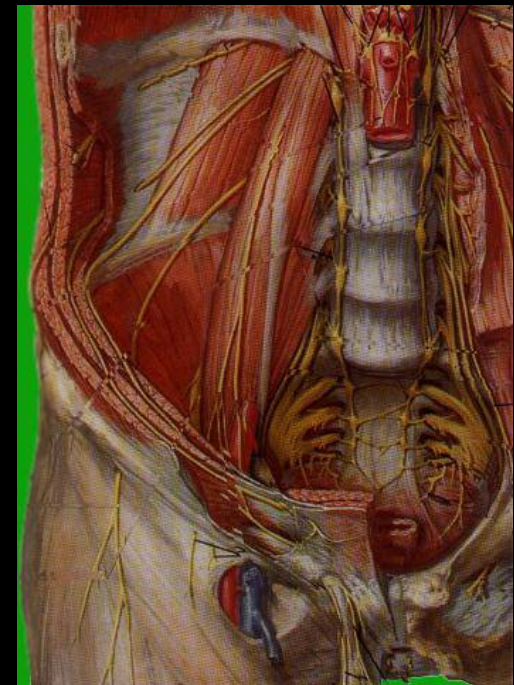
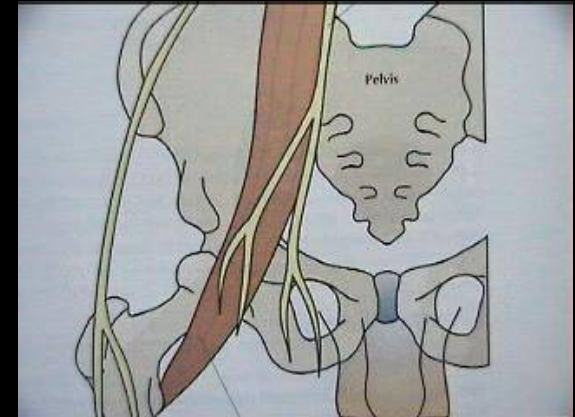
- Injury to Iliac Vessels: Chances of Mortality
- Inferior Epigastric Vessel: Haematoma
- Iliopubic vein and artery which travers the lacunar ligament: Haematoma
- Injury to Spermatic vessels: Postoperative scrotal haematoma



Complication

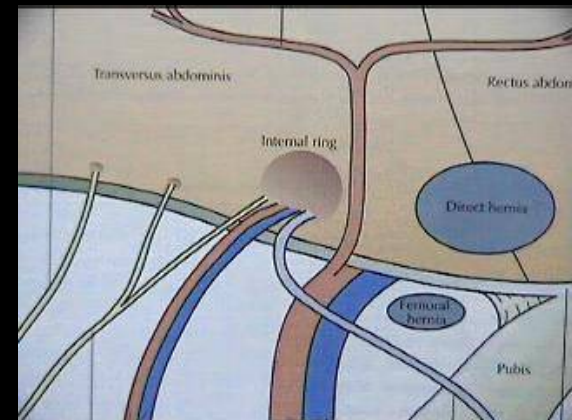
□ Lateral cutaneous nerve Injury

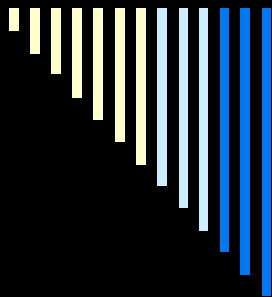
- Most common nerve injured is lateral femoral cutaneous nerve (2%): Hyperesthesia or Paraesthesia of upper aspect of thigh and hip.
- If pain start days after surgery will recover within 2-4 weeks (or percutaneous steroid)
- If pain starts within 24 hour of surgery there is permanent nerve damage
- Cryotherapy with destruction of sensory branch is indicated
- Lifelong numbness



Complication

- Genitofemoral nerve injury
 - Genitofemoral nerve injury (1%): Hyperesthesia or Paraesthesia of scrotum
 - Not significant
 - With time it will subside
- Other complication
 - Migration of Mesh
 - Rejection of Mesh (Rare)
 - Bowel adhesion





Dubai Course
March 2007



Thank you

Dr Mishra's Training in Dubai



World Laparoscopy Hospital

Essentials of Laparoscopic Surgery

