



Hernias and Recurrence

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When inguinal hernia
repair goes pear
shaped



Inguinal Hernia Recurrence

Epidemiology

- One of the most often performed operations world wide.
- Life time risk 27-43% for men and 3-6% for women.
- 20 million inguinal hernia surgeries a year is commonly quoted.

Recurrence



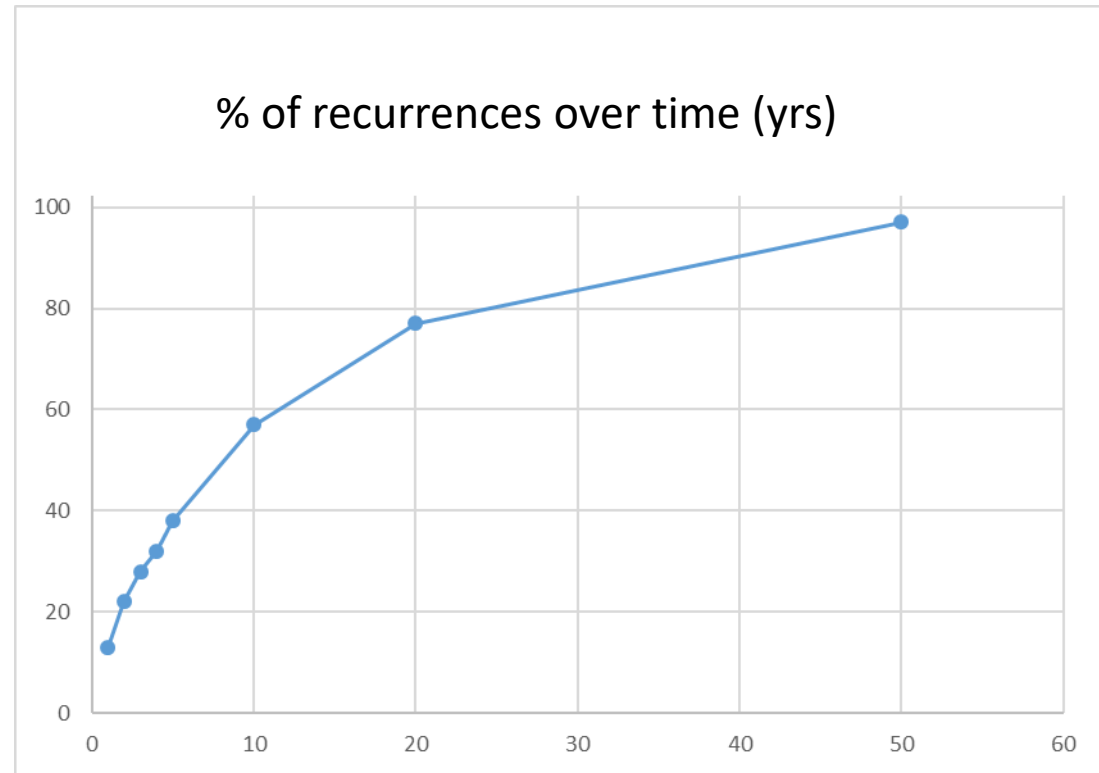
When do recurrences happen?

European multicentre study in 2015¹

171 143 inguinal hernia operations

18 774 for recurrences (10.9%)

Combination of mesh/non-mesh,
laparoscopic/open



1. Kockerling F, Koch A, Lorenz R, Schug-Pass C, Stechemesser B, Reinbold W. How Long Do We Need to Follow-Up Our Hernia Patients to Find the Real Recurrence Rate?. *Front. surg.*. 2015;2:24. doi:10.3389/fsurg.2015.00024

Etiological factors

Patient factors

- Female
- Obesity
- Smoking (in some studies)
- Direct hernias
- Sliding hernias
- ↓ collagen type I/III ratio
- Matrix metalloproteinase levels

Surgery factors

- Surgical experience
- Operation choice

Etiological non-factors

Patient factors

- Age
- Constipation
- Family history
- Size of hernia (<3cm, >3cm)

Surgery factors

- Surgical site infection
- Haematoma
- Emergency surgery
- Post-operative physical activities (after 3-5 days)
- Heavy lifting after 3 weeks

Operation choice

- Shouldice repair

Edward Shouldice



- 1890-1965
- Born in Ontario, Canada
- Med school in Toronto
- Memorialised in the Shouldice Hospital in Toronto

Operation choice

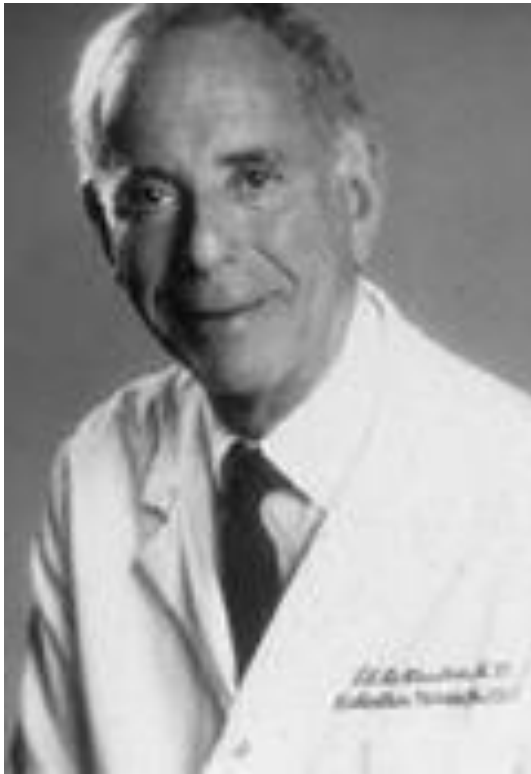
- Shouldice repair
- Cochrane review in 2012¹ showed:
 - Shouldice herniorrhaphy is a good technique for inguinal hernia repair compared to other non-mesh techniques, giving better results in terms of recurrence 4.4% vs. 6.9%;
 - (OR 0.62, 95% CI 0.45 to 0.85).
- Follow up in the studies in the meta-analysis was mostly <5 years

1. Amato B, Moja L, Panico S, Persico G, Rispoli C, Rocco N, Moschetti I. Shouldice technique versus other open techniques for inguinal hernia repair. Cochrane Database of Systematic Reviews 2012, Issue 4. Art. No.: CD001543. DOI: 10.1002/14651858.CD001543.pub4.

Operation choice

- Open mesh repair - Lichenstein

Irvin Lichtenstein



- 1920-2000
- Beverly Hills practice.
- Didn't believe in physical rest after surgery. Used LA and had patients get up from the operating table and walk.

Operation choice

- Open mesh repair – Lichenstein
- Comparing Shouldice to Lichenstein¹, the recurrence rate was lower in the mesh group 3.6% vs 0.8%
 - (OR 3.65, 95% CI 1.79 to 7.47).
- Other complications not statistically different
- Most studies this meta-analysis had follow up times of <5 years

1. Amato B, Moja L, Panico S, Persico G, Rispoli C, Rocco N, Moschetti I. Shouldice technique versus other open techniques for inguinal hernia repair. Cochrane Database of Systematic Reviews 2012, Issue 4. Art. No.: CD001543. DOI: 10.1002/14651858.CD001543.pub4.

Operation choice

- Laparoscopic repair
- Intraperitoneal (TAPP) or Preperitoneal (TEP)
- Posterior approach

- No difference in recurrence¹ as long as 10x15cm mesh is used

1. Simons MP, Aufenacker T, Bay-Nielsen M, et al. European hernia society guidelines on the treatment of inguinal hernia repair in adult patients. *Hernia* 2009; 13:343–403

- Are inguinal hernia peculiar to human beings due to our upright stance?

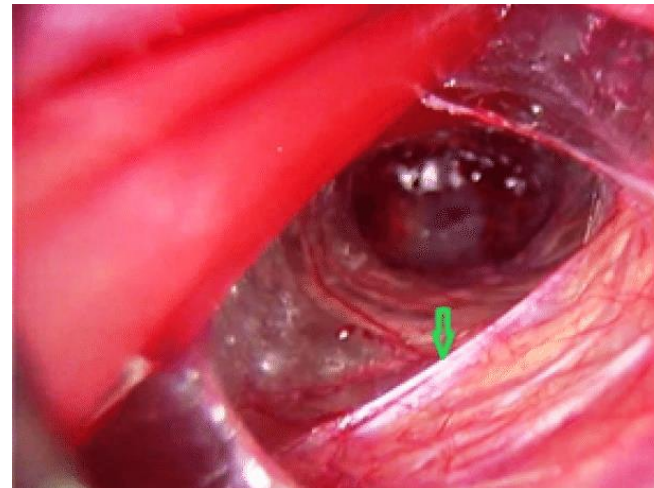
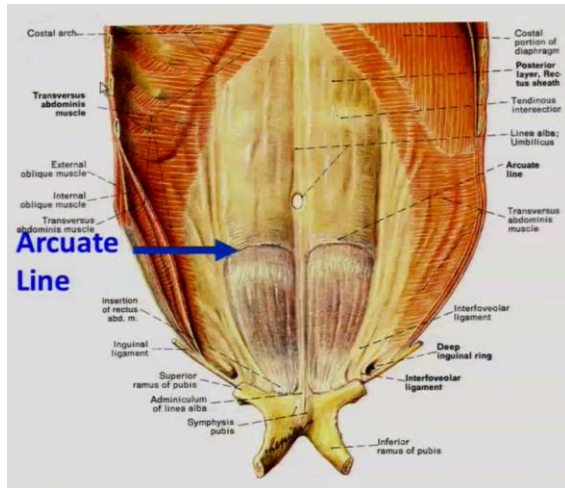


Surgical tips

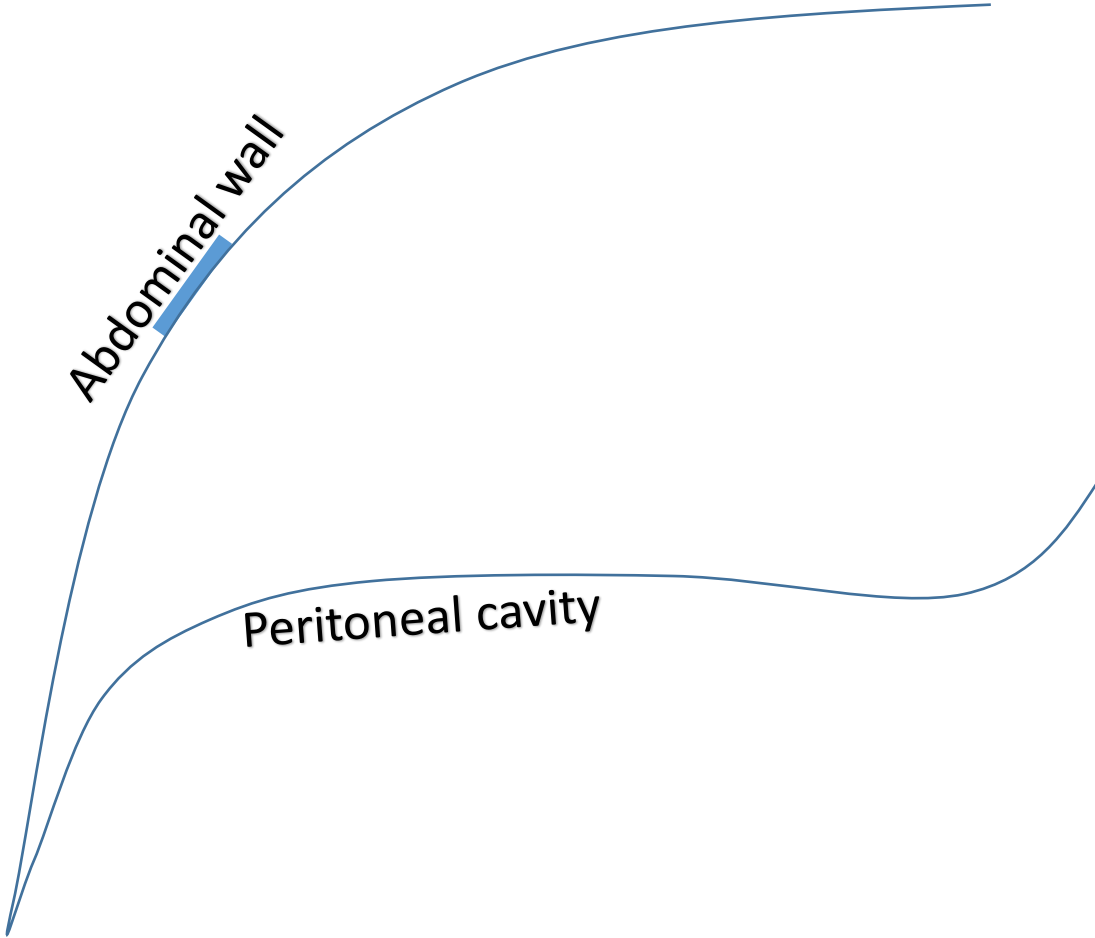


Tip 1 – use a big piece of mesh

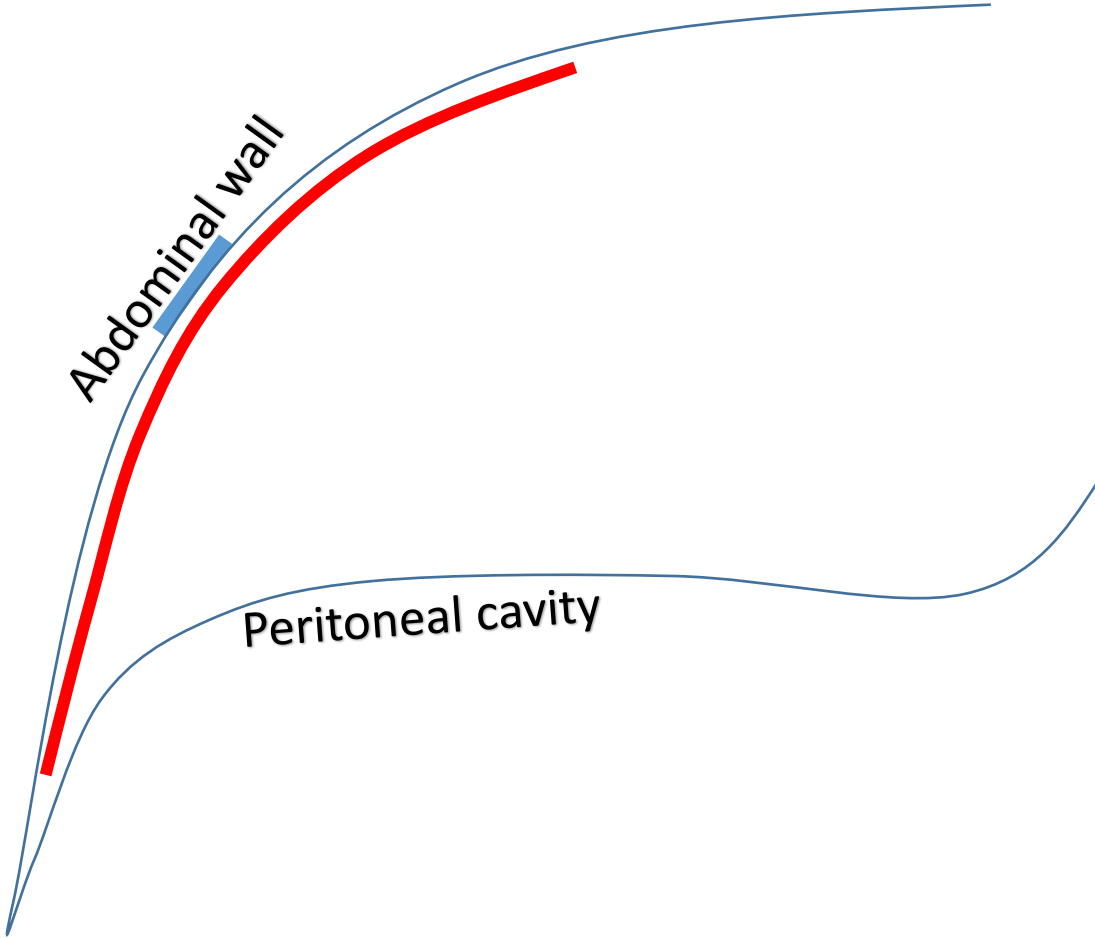
- Associated with less recurrence
 - 15x 10cm mesh is associated with less recurrence than the 12x8cm mesh
- Therefore one needs to have created an adequate space.
 - Freeing up the lateral part of the free edge of the posterior rectus sheath (arcuate line) helps



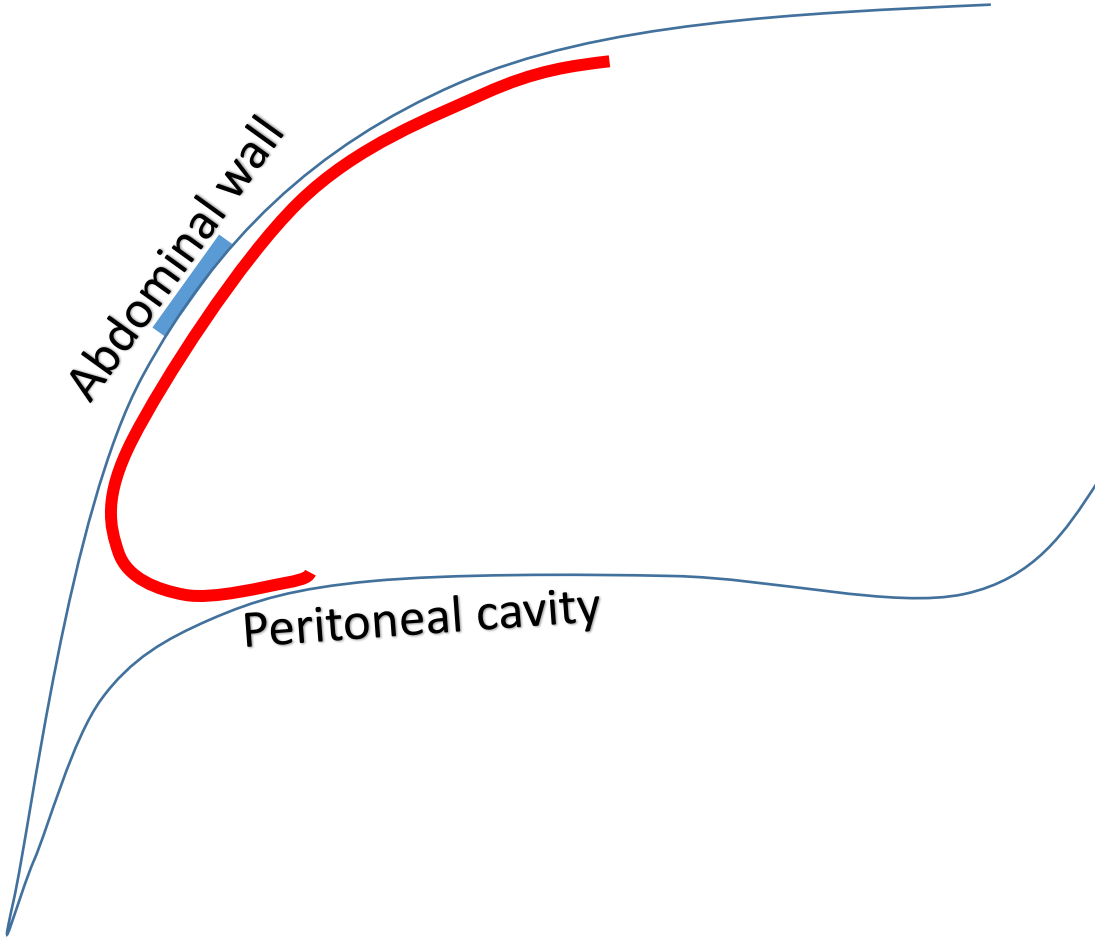
Tip 2– Tuck it in properly



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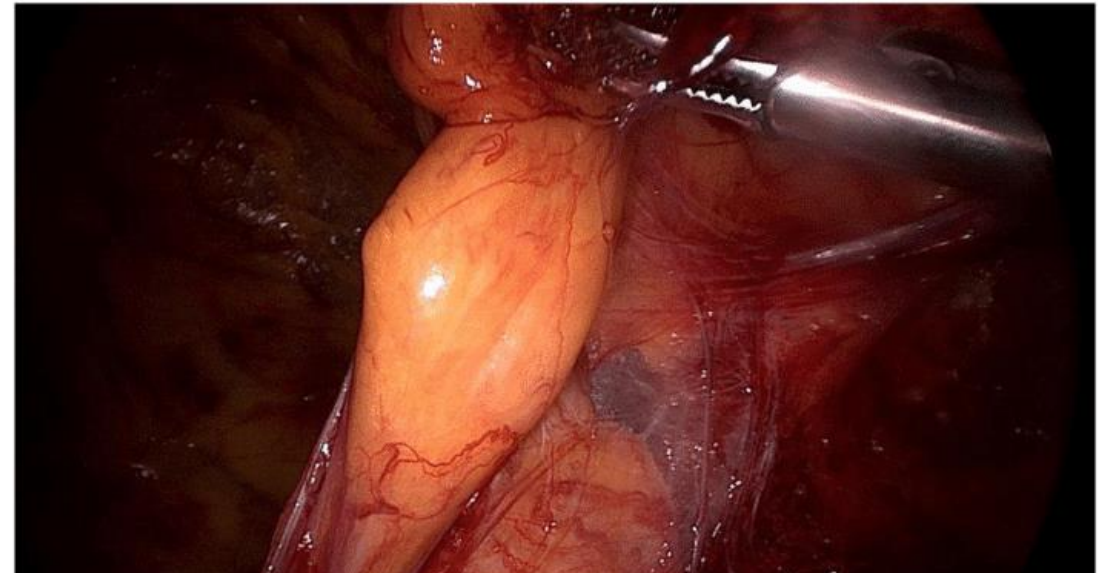
Tip 2– Tuck it in properly



Tip 3– Take off the Lipoma of the cord (or round ligament)

Spermatic cord “lipomas” are masses of fat originating from the preperitoneal position

- Spermatic cord lipomas have herniated out through the fascial defect, just like the hernia sac.
- We always reduce, or excise the sac so that it cannot act as a lead point for recurrence.
- Should also always excise or reduce lipomas as leaving them is associated with recurrence.



1. Köckerling F, Schug-Pass C . Spermatic Cord Lipoma—A Review of the Literature. *Front. Surg.*, 23 July 2020

2. Felix E, Scott S, Crafton B, Geis P, Duncan T, Sewell R, McKernan B . Causes of recurrence after laparoscopic hernioplasty. A multicenter study. *Surg Endosc.* 1998 Mar;12(3):226-31

Tip 4 - Women should have laparoscopy for inguinal hernia repair

- A study from the Danish Hernia database found a 15 fold greater incidence of femoral hernias after inguinal hernia repair compared with spontaneous incidence¹
- All occurred after a primary open inguinal operation.
- Thought to be femoral hernia overlooked at the primary operation.
- It is strongly recommended to exclude a femoral hernia by exploration of the pre-peritoneal space.
- Easiest way to do that is laparoscopic hernia repair.

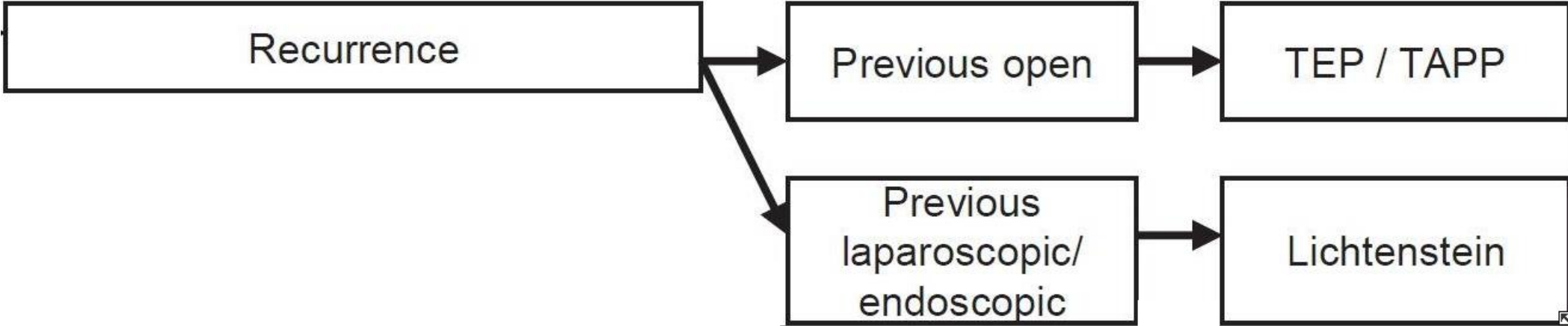
1. Mikkelsen T, Bay-Nielsen M, Kehlet H. Risk of femoral hernia after inguinal herniorrhaphy. Br J Surg. 2002;89:486-488.

Tip 4 – Beware the prostatectomy

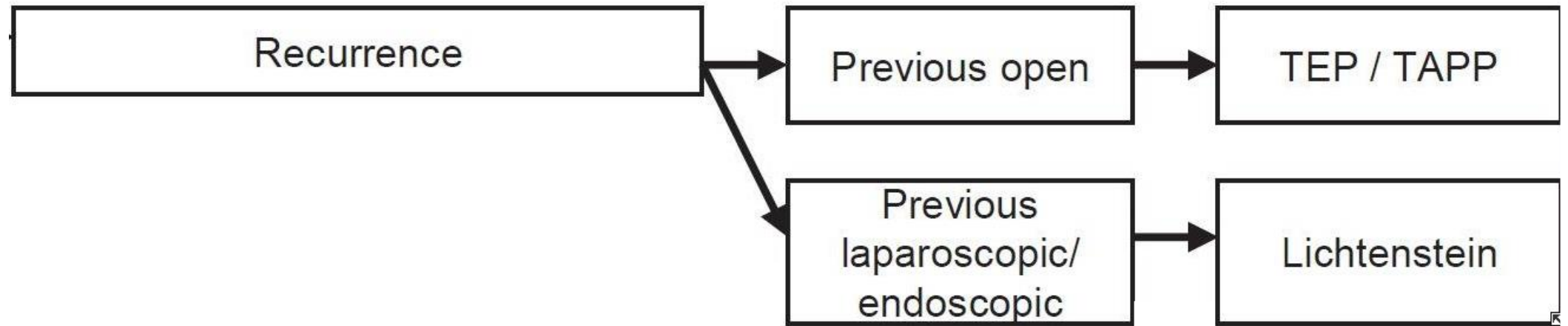
- Patients who have undergone prostatectomy or other pre-peritoneal pelvic surgeries should be approached with caution.



Tip 6 - Fixing a recurrence



Fixing a recurrence



Re-re-repair when both anterior and posterior approaches have already been used?