Management Of Groin Hernia

Gunadi Petrus
DEFINISI

• Hernia is an abnormal protrusion of the whole or a part of viscus through an opening in the wall of the cavity

• Types:
  – External
  – Internal
• United States, approximately 96 percent of groin hernias are inguinal and 4 percent are femoral. Inguinal hernias are bilateral in as many as 20 percent of affected adults.

• The male-to-female ratio is 9:1 for inguinal hernias and 1:3 for femoral hernias. While inguinal hernias occur fairly equally across adult age groups, femoral hernias tend to occur more often in elderly women.
Anatomy of Groin Hernias

• Inguinal hernias are broadly classified as indirect, direct or hernia femoralis

Route of an indirect hernia. Note that the hernia sac passes outside of the boundaries of Hesselbach's triangle and follows the course of the spermatic cord.

Route of a direct hernia. The hernia sac passes directly through Hesselbach's triangle and may disrupt the floor of the inguinal canal.

Route of a femoral hernia. The hernia sac follows the potential space along the femoral vessels. It may be palpable near the femoral ring or in the medial thigh.
Hesselbach's triangle. This anatomic landmark is bounded by the rectus abdominis muscle medially, the inguinal ligament inferiorly and the inferior epigastric vessels laterally. The triangle is outlined in red.
Indirect hernia is the result of two conditions:

1. The existence of a potential space due to nonobliteration of the processus vaginalis and
2. A weakening of the fascia of the transversalis muscle fibers surrounding the exit of the spermatic cord at the internal abdominal ring.
DIRECT HERNIA

- Direct inguinal hernias are not generally congenital. Instead, they are acquired by the development of tissue deficiencies of the transversus abdominis muscle, which makes up the floor of the inguinal canal. Thus, these hernias protrude directly through a defect in the inguinal canal floor, rather than indirectly following the potential space of the processus vaginalis and the path of the spermatic cord.
FEMORAL HERNIA

• Femoral hernia can occur as a result of elevated intra-abdominal pressure. In this circumstance, preperitoneal fat can protrude through the femoral ring, with its accompanying pelvic peritoneum. The hernial sac can then migrate down along the femoral vessels into the anterior thigh. Women may be predisposed to femoral herniation due to weakness of the pelvic floor musculature from previous childbirth.
Aetiology

• Increased abdominal pressure
  Cough, urinary trouble, constipation, straining, ascites, intraabdominal malignancy.
• Weakness of abdominal musculature:
  – Congenital sacs as processes vaginalis, patent canal of nuck in females
  – Acquired
    • Excess fat (obesity)
    • Muscle weakness following pregnancy
    • Surgical incisions – Nerve damage, Improper repair
  – Destruction of connecting tissue as smoker, Marfan’s syndrome
• Familial
in cases where there is an obvious swelling in the areas of the abdomen commonly associated with hernia and which is more obvious when you cough, strain or stand up and which gets smaller or goes completely when you lie down. No other tests are usually needed.

Stadium hernia.

- Reponobilis
- Irreponibilis
- Incarcerata
- Strangulata
Would I need any tests, x-rays or scans?

Not usually and not if you are examined by a clinician with extensive experience in diagnosing all kinds of hernias. However in a small number of cases, where the symptoms are inconclusive, there are special tests that can be performed.
Herniagram

This is a special x-ray (not often done now, partly because it is ‘invasive’) that involves an injection with a needle. A liquid that shows on x-rays (radio-opaque) has to be injected into the abdominal cavity. If there is a hernia (hole in the abdominal wall) the liquid trickles through the hole and can be seen on the x-ray. It’s sometimes helpful if there is a question about whether a previously repaired hernia has returned (recurred).
• **Ultrasound**

  • Similar to the ultrasound exam used on pregnant women. Ultrasound gives a shadowy black and white picture. The result is operator dependent, meaning it depends on who is doing it.

• **CT scan**

  • Uses x-rays

• **MRI scan**

  • Uses magnetism. A good, modern test
CLASSIFICATION

- **Casten:**
  - Stage 1: an indirect hernia with a normal internal ring
  - Stage 2: an indirect hernia with an enlarged or distorted internal ring
  - Stage 3: all direct or femoral hernias

- **The Halverson and McVay[1]:**
  - Class 1: small indirect hernia
  - Class 2: medium indirect hernia
  - Class 3: large indirect hernia or direct hernia
  - Class 4: femoral hernia

- **Ponka's**
  - (1) uncomplicated indirect inguinal hernia
  - (2) sliding indirect inguinal hernia and three types of direct hernias:
    - small defect in the medial aspect of Hesselbach's triangle near the pubic tubercle
    - diverticular hernia in the posterior wall with an otherwise intact inguinal floor; and
    - a large diffuse direct inguinal hernia of the entire floor of Hesselbach's triangle.
Types 1, 2 and 3 are indirect hernias; types 4 and 5 are direct.

- Type 1 hernias have a peritoneal sac passing through an intact internal ring that will not admit 1 fingerbreadth (i.e., <1 cm.); the posterior wall is intact.

- Type 2 hernias (the most common indirect hernia) have a peritoneal sac coming through a 1-fingerbreadth internal ring (i.e., ≤2 cm.); the posterior wall is intact.

- Type 3 hernias have a peritoneal sac coming through a 2-fingerbreadth or wider internal ring (i.e., >2 cm.).

- Type 3 hernias frequently are complete and often have a sliding component. They begin to break down a portion of the posterior wall just medial to the internal ring.

- Type 4 hernias have a full floor posterior wall breakdown or multiple defects in the posterior wall. The internal ring is intact, and there is no peritoneal sac.

- Type 5 hernias are pubic tubercle recurrence or primary diverticular hernias. There is no peritoneal sac and the internal ring remains intact. In cases where double hernias exist, both types are designated (e.g., Types 2/4). Descriptors such as L, Sld., Inc., Strang. Fem. are used to designate lipoma, sliding component, incarceration, strangulation and femoral components.
Nyhus

• Type 1 is an indirect hernia with a normal internal ring;
• Type 2 is an indirect hernia with an enlarged internal ring;
• Type 3a is a direct inguinal hernia;
• Type 3b is an indirect hernia causing posterior wall weakness;
• Type 3c is a femoral hernia;
• Type 4 represents all recurrent hernias.
• SURGICAL
• Herniotomy
• Herniorrhaphy
  – Bassini’s Repair
  – Shouldice Repair
• Hernioplasty
  – Lichtenstein
  – Koegel

• LAPAROSCOPY

  - Intraperitoneal onlay mesh repair
  - Transabdominal preperitoneal mesh repair (TAPP) (Arregui 1991)
  - Total extraperitoneal repair (TEP) (Stopa 1975)
• **Indications and Contraindications**
  • Indications for Lichtenstein hernioplasty include the following:
  • Adult patients with uncomplicated inguinal and femoral hernia
  • Primary repair of all unilateral and bilateral, adult inguinal hernias
  • Recurrent hernias - Recurrence after primary posterior technique (such as laparoscopic TEP, TAPP, or open posterior technique)
  • Contraindications include complications such as obstruction or strangulation and a history of allergy to local anesthesia or prosthesis. Recurrence after primary anterior technique should preferably be dealt with using laparoscopic TEP, TAPP, or the open posterior technique.
PROCEDURE Lichtenstein

- **Contraindications**
  include complications such as obstruction or strangulation and a history of allergy to local anesthesia or prosthesis. Recurrence after primary anterior technique should preferably be dealt with using laparoscopic TEP, TAPP, or the open posterior technique.
The recurrence rate for Lichtenstein hernioplasty at specialist clinics in the United States is consistently less than 1%. In an audit of Lichtenstein hernioplasty performed under local anesthesia by surgical residents, the recurrent rate was 2.1% during a 10-year follow-up.
PROCEDURE KOEGEL

- **Skin Incision**: 4 cm
- **Pubic Tubercle**
- **Ant. Sup. Iliac Spine**
- **Head**
- **Foot**
- **Midpoint**
PROCEDURE KOEGEL

sac

cord structures
PROCEDURE KOEGEL
Trocar Position.

Position of the surgical team.
TEP
1. Fat being pulled in from the hernial defect

2. The defect as it looks from the inside

3. A mesh introduced like a rolled cigarette is being unrolled and

4. The mesh being fixed into place.
Contraindications of Laparoscopic Repair of Hernia

- Non-reducible, Incarcerated Inguinal Hernia
- Prior laparoscopic herniorrhaphy
- Massive Scrotal hernia
- Prior pelvic lymph node resection
- Prior groin irradiation
Advantages of Laparoscopic Approach

Tension free repair that reinforces the entire myopectoneal orifice.

- Less tissue dissection and disruption of tissue planes
- Three ports are adequate for all type of hernias
- Less pain postoperatively.
- Low intra-operatively and postoperative complications.
- Early return to work.
The overall risk of complications after inguinal hernia surgery reportedly varies from 15-28% in systematic reviews. Early complications include seroma formation and hematoma (8-22% of cases), urinary retention, and wound infection (1-7% of cases). Late complications include sensory loss, hyperesthesia, chronic inguinal pain, mesh-related problems, hydrocele, testicular pain, testicular swelling, atrophy, and recurrence of hernia.
Terima Kasih