US of Abdominal Wall Hernias

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Disclosures

• None relevant to this presentation

Educational Objectives

• Following the presentation, participant should be able to:
  – Discuss normal and pathologic anatomy for abdominal wall hernias
  – Describe the ultrasound criteria for evaluating these hernias

Normal Abdominal Wall
**Inguinal Hernia Epidemiology**

- Most common hernia type
- More than 1 million hernias repaired each year in US: 75% are inguinal
Identification of the inferior epigastric vessels is critical to localizing an inguinal hernia

Types of Inguinal Hernias
- Indirect: lateral to vessels, goes through internal inguinal ring
  - Occur at any age
  - Most common (2/3)
- Direct: Medial to vessels
  - Most common in middle aged and elderly men

Ultrasound Method
- Identify inferior epigastric vessels in cross-section
- Follow them down to the confluence with femoral vessels
- Slide above inguinal ligament and find the internal inguinal ring
- Re-find vessels in long axis

Ultrasound Method
- Put probe lateral to vessels aligned with inguinal canal
  - Supine
  - Valsalva
  - Standing if needed
- Repeat medial to vessels

Left Indirect Inguinal Hernia
Indirect Inguinal Hernia

Inguinal Hernia: Reducible

Indirect Inguinal Hernia

Inguinal Hernia: Not Reducible

Indirect Inguinal hernia: Importance of Standing
Direct Inguinal Hernia: Short Axis (Standing)

Direct Inguinal Hernia Long Axis

“Pantaloons” Hernia

“Pantaloons” Hernia
Recurrent Inguinal Hernia
3 Surgeons Said No

27-Year-Old Man With Pelvic Pain
Scheduled for Orchiectomy

Spermatic Cord Lipoma

Normal Motion of Spermatic Cord

Normal Motion of Spermatic Cord

Femoral hernias

• 3% of all hernias
• Originate below inguinal ligament, whereas inguinal hernias originate above
Femoral hernia: 37 y.o. Woman

Inguinal and Femoral Hernia 91-Year-Old Man

Normal Femoral Canal

Inguinal and Femoral Hernia 91-Year-Old Man

Inguinal and Femoral Hernia 91-Year-Old Man
Inguinal and Femoral Hernia
91-Year-Old Man

Cyst of Canal of Nuck
“Female Hydrocele”

Cyst of Canal of Nuck

“Sports Hernia”
- Posterior inguinal wall deficiency
- Also sometimes used to refer to groin pain in athletes: prefer “athletic pubalgia”

“Sports Hernia”
- DDx:
  - True hernias
  - Rectus abdominis pathology
  - Adductor tendon pathology
  - Osteitis pubis
The conjoint tendon forms when the medial fibers of the internal oblique aponeurosis unite with the deeper fibers of the transversus abdominis aponeurosis.

The conjoint tendon turns inferiorly and attaches to the pubis, forming part of the posterior wall of the inguinal canal.
“Sports Hernia”

Direct Inguinal Hernia
Short Axis

References