Groin Hernia

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Groin Pain

• Hip joint: labral tear
• Pubic symphysis
• Fracture
• Tendon tear and “sports hernia”
• Inguinal hernia
• Algorithm: radiographs, US, MRI

Sports Hernia?:

• A non-anatomic, non-diagnostic term attributed to many causes of groin pain
  – Tears or attenuation of inguinal structures
  – Bulge posterior wall of inguinal canal
  – Obturator nerve entrapment
  – Common aponeurosis abnormality:
    • Rectus abdominis and adductor tendons
    – Associated: pubic symphysseal instability, FAI

One fish taco.......

Rectus Abdominis +
Adductor: “Sports Hernia”

Note: common aponeurosis

From: RadioGraphics 2008; 28:1415

Author: Joe Lemire, Hemisphere Magazine, Feb. 2015
Inguinal Region Hernia:
- Indirect inguinal
- Direct inguinal
- Femoral

Inguinal Region Hernia:
- Start transverse: rectus abdominis
- Find inf. epigastric artery
- Follow to origin at external iliac artery
- Move superior to find deep ring
- Angle toward pubis
- Scan Hesselbach's triangle

Imaging Inguinal Hernias:
- In diagnosis of occult inguinal hernias:
  - Ultrasound:
    - 86% sensitivity and 77% specificity
  - CT:
    - 80% sensitivity and 65% specificity
  - Herniography:
    - 91% sensitivity and 83% specificity

Jamadar et al. AJR 2006; 187:185
Robinson A. Surg Endosc 2013; 27:11
Indirect Inguinal Hernia:
• Extends through deep inguinal ring
• Lateral to inferior epigastric
• Courses medial within inguinal canal
• Parallel to skin surface
• May contain fat or less commonly bowel
• Confirm in two planes

How do you Valsalva?
• Tighten belly
• Hold breath
• Blow on back of hand
• Stand up
• Clue: femoral vein should distend

Indirect Inguinal Hernias: Pitfalls
• Relying on transducer position in plane or long axis to inguinal canal
  – Must scan short axis to inguinal canal
• Lipoma of inguinal canal
  – True hernias enter through deep ring
• Round ligament varicosities: pregnancy
  – Do not call hemangiomas
Indirect Hernia: Pitfall

- Lipoma of spermatic cord
- May simulate indirect hernia
- True hernia will enter through internal inguinal ring

Indirect: Pitfall

- Undescended testicle
- In males

Spermatic Cord Lipoma

Indirect Inguinal Hernia

Indirect: Pitfall

- Round ligament varicosities
- Early 3rd trimester of pregnancy
- Resolves after childbirth
- Do not misinterpret as vascular malformation

Kahriman G. J Clin Ultrasound 2010; 38:512
Round Ligament Varicosities

Indirect: Pitfall
- Canal of Nuck cyst
- Patent processus vaginalis

Direct Inguinal Hernia:
- Extends through Hesselbach’s triangle
- Medial to inferior epigastric
- Protrudes anterior toward skin surface
- May contain fat or less commonly bowel
- Confirm in two planes

Direct Inguinal Hernia

+ Valsalva

Direct Inguinal Hernia

Axial  Sagittal

Medial  Lateral  Superior  Inferior

Artery  A
Direct Hernia: Pitfall
- If only scanning long axis to inguinal canal in Hesselbach’s triangle
- Intra-abdominal contents may move inferior
- Simulate direct hernia
- True hernia shows focal movement in two planes

Femoral Hernia:
- Extends through femoral ring
- Usually medial to femoral vein
- Protrudes inferior to inguinal ligament
- May contain fat or less commonly bowel
- Confirm in two planes
- Femoral vein should distend with adequate Valsalva!

Paralabral Cyst into Femoral Canal

Hernia Repair: mesh
Recurrent Inguinal Hernia

Mesh Hernia

Lateral Medial

Umbilical Hernia

Transverse Sagittal

Take Home Points

- Groin pain is multifactorial
  - Include common aponeurosis
- Assess for inguinal hernias
  - Document in two planes
  - Sagittal plane is essential!
- Valsalva: femoral vein should distend

Syllabus on line and other educational material:
www.jacobsonmskus.com
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