

TRA-MINW

Hernia Ultrasound Protocol

Reviewed By: Anna Ellermeier, MD

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Contact: (866) 761-4200, Option 1

Billing

- Peri-umbilical, abdominal wall: Abd Ltd
- Low pelvis wall, inguinal, femoral: Pelvis Ltd

****NOTE for all examinations:**

1. If documenting possible flow in a structure/mass, all color/Doppler should be accompanied by a spectral gate for waveform tracing
 2. CINE clips to be labeled: "at rest" and "with Valsalva"
 - MIDLINE structures: "right to left" when longitudinal and "superior to inferior" when transverse
 - RIGHT/LEFT structures: "lateral to medial" when longitudinal and "superior to inferior" when transverse
- **each should be 1 sweep, NOT back and forth****

Hernia evaluations should be performed using a high frequency linear array transducer.

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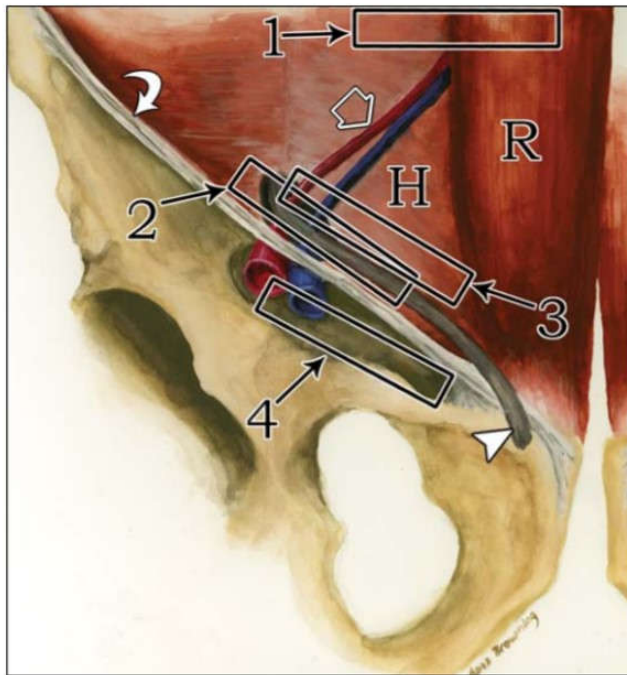
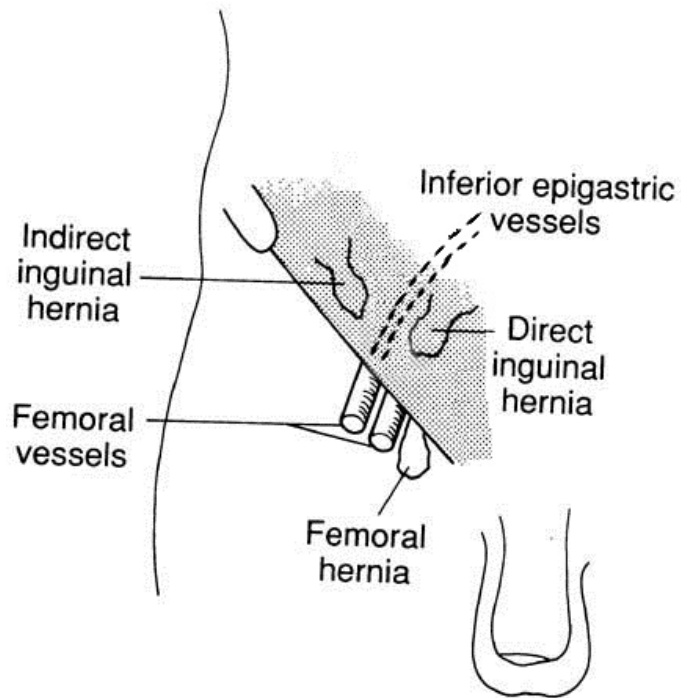


Fig. 4—Illustration of man's right inguinal region from anterior view shows transducer position to evaluate for spigelian hernia (1), indirect inguinal hernia (2), direct inguinal hernia (3), and femoral hernia (4). Note locations of inguinal ligament (*curved arrow*), rectus abdominis muscle (R), lateral boundary of Hesselbach's triangle (H) defined by inferior epigastric artery (*open arrow*), and spermatic cord (*arrowhead*).

DA Jamadar, et al. Sonography of the inguinal region hernia
AJR 2006; 187:185-190

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Assess focal area of concern

Required STILL images:

Representative transverse: at least 2 per side

Representative sagittal: at least 2 per side

Required CINE images:

Representative transverse: at least 1 per side

Representative sagittal: at least 1 per side

Document:

-Content of hernia sac: fat, bowel, both, etc. --> images in transverse and sagittal

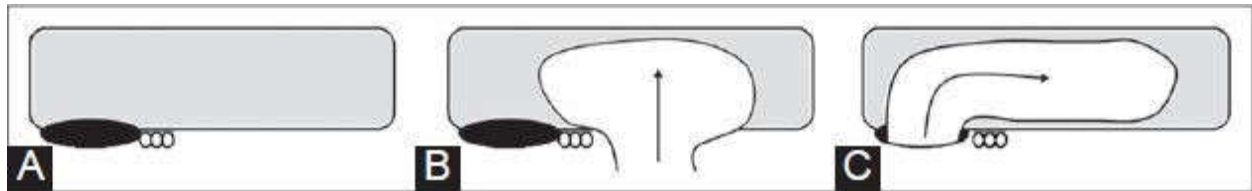
-Size of hernia defect (neck): transverse x sagittal

-Reducibility: spontaneous (without transducer pressure) and with pressure (i.e., push with transducer)

-Changes with Valsalva, including CINE

NOTES of specific hernia types:

Inguinal: clearly label and document location of epigastric vessels



Simplified diagram of a long axis view through the right inguinal canal.

(A): The deep inferior epigastric vessels (three circles) lie at the medial aspect of the deep inguinal ring (black oval) (A)

(B) **Direct** inguinal hernias originate medially to the inferior epigastric vessels

(C) **Indirect** inguinal hernias pass through the deep ring laterally and then over the inferior epigastric vessels

[Indian J Radiol Imaging](#). 2013 Oct-Dec; 23(4): 391–395.

1. Ideally, demonstrate hernia defect in the same image as epigastric vessels
2. Clearly label medial and lateral on the image
3. In the case of a positive examination, CINE with color may be helpful
4. If positive, image opposite side for comparison

Femoral: scan below the inguinal ligament (inferior to course of epigastrics) --> space MEDIAL to femoral vein

-Through femoral ring into femoral canal (posterior/inferior to inguinal ligament)

-Remain lateral to the pubic tubercle

-Compress femoral vein

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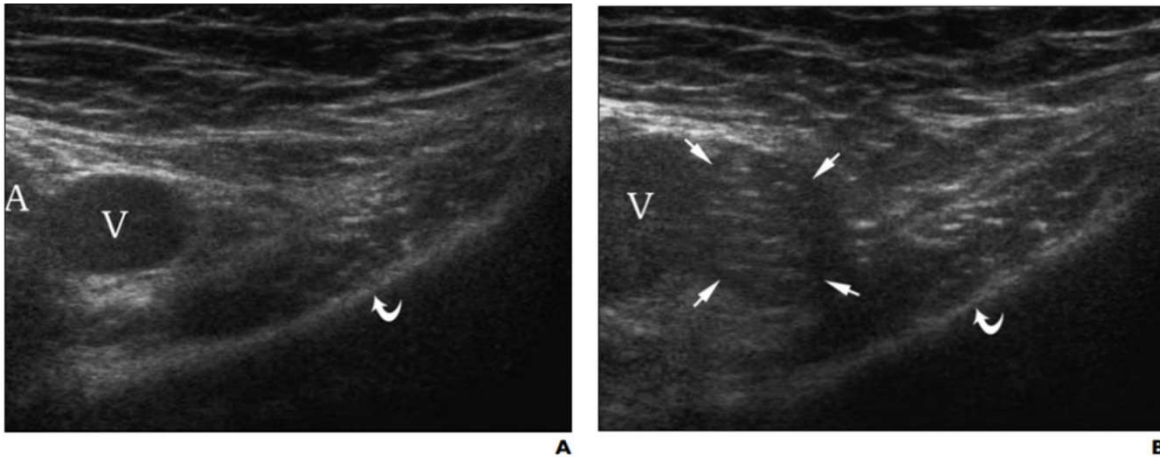


Fig. 10—31-year-old woman with femoral hernia. Sonogram of right inguinal region parallel to and caudad to inguinal ligament corresponding to transducer position 4 in Figure 4.

A, Pre-Valsalva maneuver sonogram shows (hernia not visible) femoral artery (A), femoral vein (V), and superior pubic ramus (*curved arrow*).

B, Post-Valsalva maneuver sonogram shows dilated femoral vein (V) lateral to femoral hernia (*arrows*). Superior pubic ramus (*curved arrow*) is also seen.

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S/P hernia repair with recurrent pain: Ensure entire mesh is imaged