Endometriosis

Superficial endometriosis
Ovarian endometrioma
Deep infiltrating endometriosis (DIE)
- TVS is an accurate and reliable diagnostic tool for diagnosing DIE
- Diagnostic performance similar to MRI

Bowel preparation is NOT essential nor necessary for detection of DIE
(Hudelist, et al., 2011)

Endometriosis assessment should be incorporated into general practice

Benefits

Clinical indications

Pelvic pain
Irregular periods
Menorrhagia
Dysmenorrhea
Dyspareunia

Bowel
Dyschezia
Cyclical rectal bleeding

Bladder/Ureters
Dysuria
Cyclical hematuria
Asymptomatic!!

Systematic approach to scanning for deep infiltrating endometriosis

Overview

1. Uterus and adnexa
2. Pouch of Douglas (POD)
3. Posterior pelvic compartment
4. Anterior pelvic compartment
1. Uterus & Adnexa

- Anteverted and retroflexed uterus
  - Association with POD obliteration (Reid et al., 2013)
- Adenomyosis
  - Loss of junctional zone
  - Myo. cysts
  - Venetian blind
- Ovaries
  - Endometrioma: associated with 50% DIE lesions (Chapron et al., 2009)
  - Kissing ovaries

"Kissing ovaries": a sono graphic sign of moderate to severe endometritis

- Hydrosalpinx
- Pseudo-peritoneal cysts

1. Uterus & Adnexa

- Ovaries
  - Mobility
- Overview
  - Uterus and adnexa
  - Pouch of Douglas (POD)
  - Posterior pelvic compartment
  - Anterior pelvic compartment
2. Pouch of Douglas

- POD – where is it?
- Sliding sign
  - What is it?
  - Non-obliteration
  - Obliteration: partial or complete
  - accurate and sensitive
  - 98% accuracy
  - Positive sliding sign does not exclude DIE in the post compartment
  - 12% w/o POD obliteration had DIE

- 2. Pouch of Douglas

  - Sliding sign
    - Anterior fornix

- 2. Pouch of Douglas

  - Sliding sign
    - Posterior fornix

- 2. Pouch of Douglas

  - Sliding sign – retroverted uterus
    - Push and pull

- 2. Pouch of Douglas

  - Negative sliding sign:
    - hard marker for high-grade endometriosis
    - Women with POD obliteration 3 times more likely to have bowel endometriosis (Khong et al., 2011)
Overview

1. Uterus and adnexa
2. Pouch of Douglas (POD)
3. Posterior pelvic compartment
4. Anterior pelvic compartment

3. Posterior Compartment

Sites commonly affected by DIE:
- Vaginal wall
- Posterior vaginal fornix
- Rectovaginal septum
- Uterosacral ligament
- Anterior rectum
- Anterior rectosigmoid

(Chapron et al., 2006; Chamie et al., 2010)

Overall pooled sensitivity and specificity:
- Vaginal endometriosis: 58% and 96%
- Rectovaginal septum endometriosis: 49% and 98%
- USL endometriosis: 53% and 93%

3. Posterior Compartment

- Vagina
  - Thin and hypoechoic
  - Techniques
    - Posterior fornix
    - Scan from left to right

3. Posterior Compartment

- Vaginal nodule

3. Posterior Compartment

- Mimic of vaginal nodule
3. Posterior Compartment

- Rectovaginal Septum
  - space between the posterior vaginal wall and the anterior rectal wall

- Measurement:
  - distance of the nodule from the anus
  - Low-lying DIE lesions (<5-8cm from the anus) associated with significant post-operative complications (Ruffolo et al., 2010; Moawad, et al., 2013)

3. Posterior Compartment

- Vaginal nodule stuck to a bowel nodule forming a RV nodule

- Uterosacral ligaments (L&R)
  - insert at the level of internal os of cervix just above the posterior vaginal fornix
  - commonly involved in DIE

3. Posterior Compartment

- Uterosacral ligaments – technique
  - Posterior fornix
  - Sweep from right to left
3. Posterior Compartment

- USL nodule stuck to vagina

3. Posterior Compartment

- USL nodule stuck to vagina, ovary and a bowel nodule

3. Posterior Compartment

- Bowel
  - Affect 4%-37% of women with endometriosis (Remorgida et al., 2007)
  - Anterior rectum, rectosigmoid and the sigmoid
  - Isolated, multiple
  - 3 layers: muscularis, submucosal & mucosal layer
  - TVS detection of bowel endometriosis
    - 94% sensitive; 98% specific

(Hudelist et al., 2011)
3. Posterior Compartment

- Bowel nodule

- Bowel nodule – multiple

- Bowel – measuring distance of the nodule from anus
  - Low lying bowel lesions (5-8cm from anus)
  - Measurements taken in short sections & total distance is added

- Bowel nodule – measuring distance of the nodule from anus
3. Posterior Compartment
   • Bowel - pitfalls

Overview
   1. Uterus and adnexa
   2. Pouch of Douglas (POD)
   3. Posterior pelvic compartment
   4. Anterior pelvic compartment

4. Anterior Compartment
   • Bladder – normal

4. Anterior Compartment
   • Bladder nodule

4. Anterior Compartment
   • Bladder – normal

4. Anterior Compartment
   • Bladder nodule

Meta-analysis with overall pooled sensitivity and specificity: 65% and 100%.
4. Anterior Compartment

- Vesico-uterine pouch
  - Sliding test - mobility of the VUP
  - TV probe in the anterior fornix

- Vesico-uterine pouch obliteration

4. Anterior Compartment

- Ureters
  - Endometriotic nodules infiltrate or compress the ureter → strictures
  - Difficult to diagnose
  - R/o hydronephrosis

Summary

- Use the posterior fornix
- Extend the scan into the posterior and anterior compartments
- Be systemic
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References