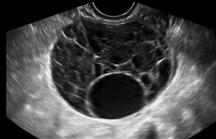


How to use ultrasound to evaluate patients with pelvic pain (non OB)

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Harvard Medical School



1

The curse of pelvic pain

- Many patients never get a diagnosis and live with chronic pain
- 15% of women - as defined by pain for > 6 months in women 18-50 years old.
(Matthias et al OB GYN 1996;87:321)
- Pelvic pain accounts for 10% of referrals to a gynecologist and more than 40% of diagnostic laparoscopies
(Shwayder JM, Semin Reprod Med. 20008;26:25)

2

Get a history during the exam

- Acute or chronic
- Diffuse or focal
- Cyclical or constant
- Sharp or dull or cramping
- What makes it better or worse
- ? Prior surgery
- Menopausal and hormonal status
- Could she be pregnant?

3

During the scan

- How tender is the patient?
- Where is the tenderness? Focal?
- Do organs slide past each other?
- Push deliberately on each part of the pelvis with the probe and other hand to determine where the pain comes from.
- Talk to the patient!

4

What type of pain is it?

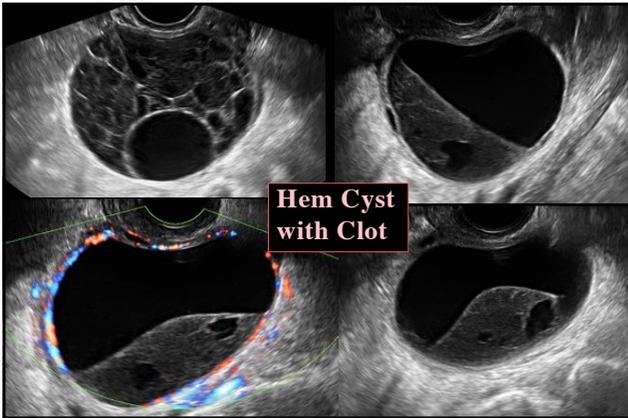
- *Acute?*
 - Ovarian cyst
 - Torsion
 - Degenerating and prolapsing fibroid
 - Embedded IUD
 - PID
 - Appendicitis
 - Diverticulitis
- *Chronic?*
 - Adenomyosis
 - Endometriosis

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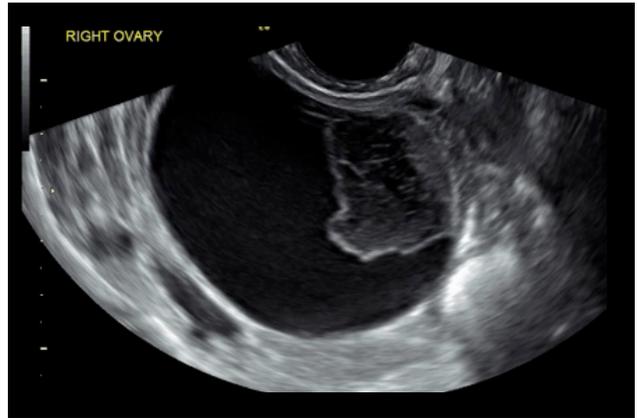
Acute pain: The Ovary/Adnexa

- Hemorrhagic cyst / hemorrhagic corpus luteum
- Torsed ovary or tube (w/wout mass)
- Hydrosalpinx
- Adhesions - peritoneal inclusion cyst
- Tubo-ovarian abscess - PID
- Ectopic pregnancy

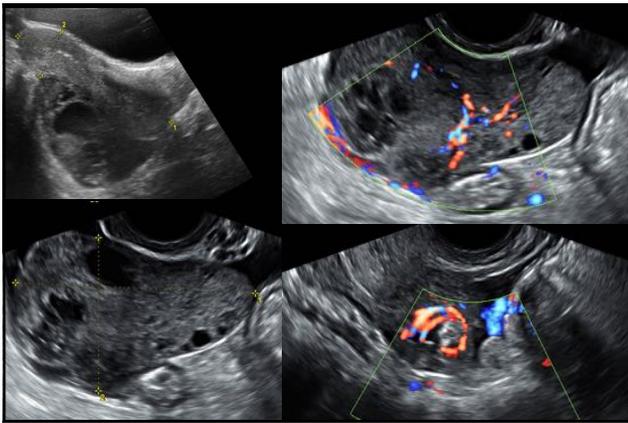
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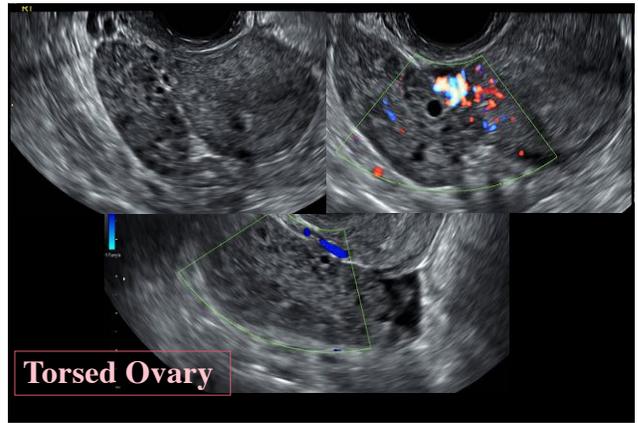
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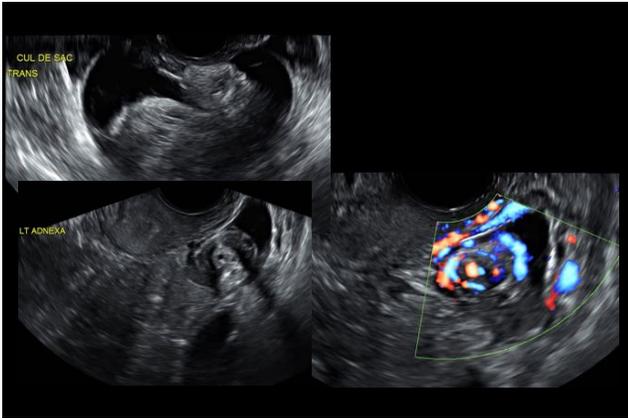
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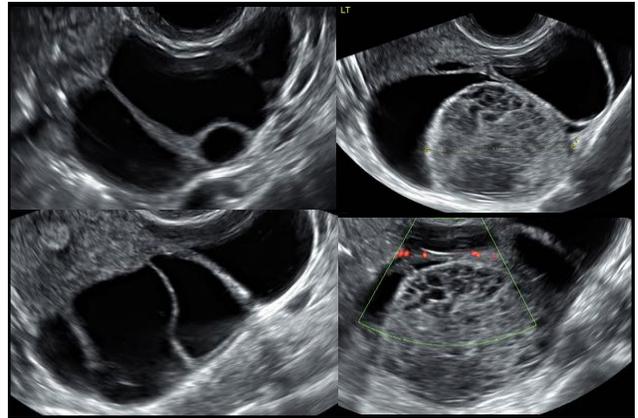
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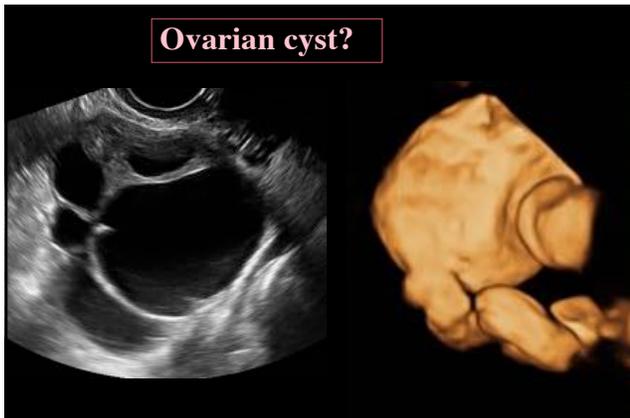
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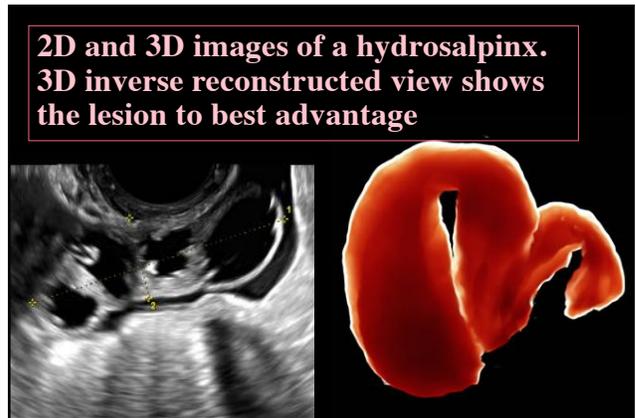
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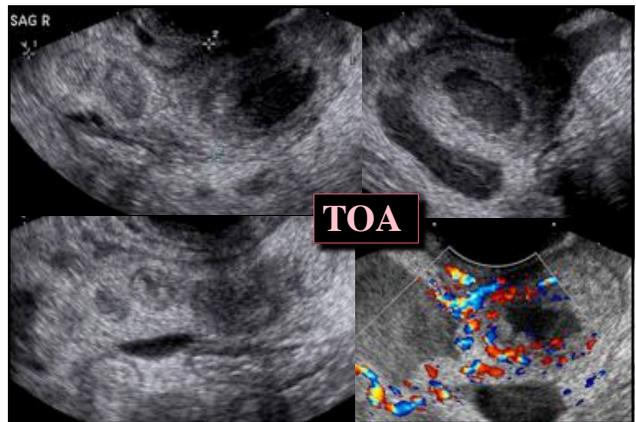
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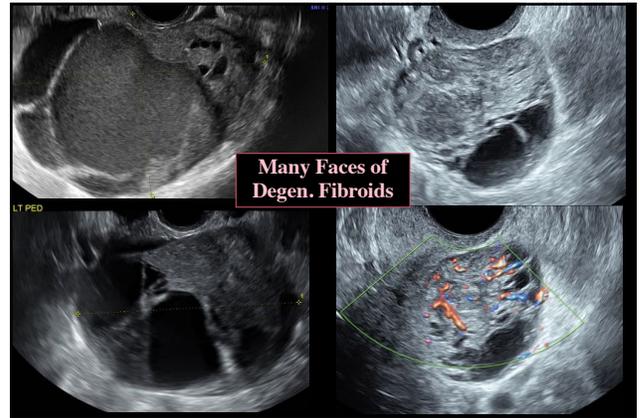
Fibroids

- Fibroids can be acutely painful if they prolapse.
- Degeneration may make them acutely symptomatic.
- Size of fibroid may cause discomfort due to pressure, such as hydronephrosis.

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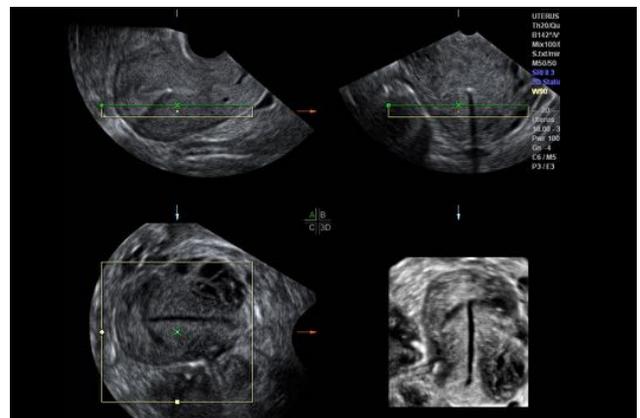
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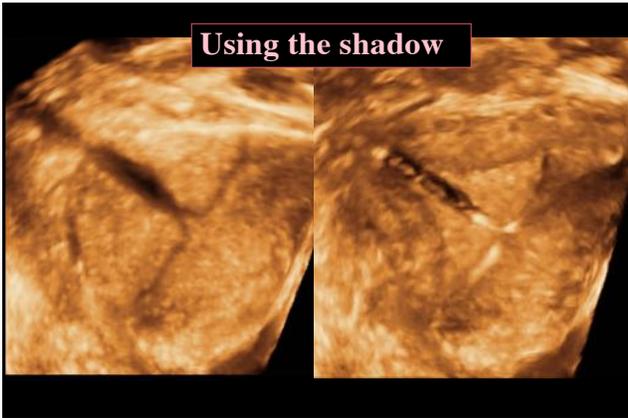
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Indication for scan ⇒	Bleeding	Pain	Either bleeding or pain
<i>IUD Imbedded</i>	10/28 35.7%	11/28 39.2%	21/28 70.4%
<i>IUD Not Imbedded</i>	21/139 15.1%	27/139 19.4%	48/139 34.5%
<i>Fisher Exact test</i>	$p = 0.02$	$p = 0.03$	$p = 0.0001$

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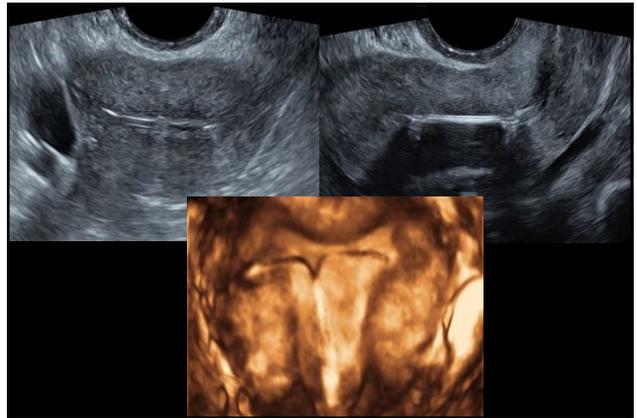


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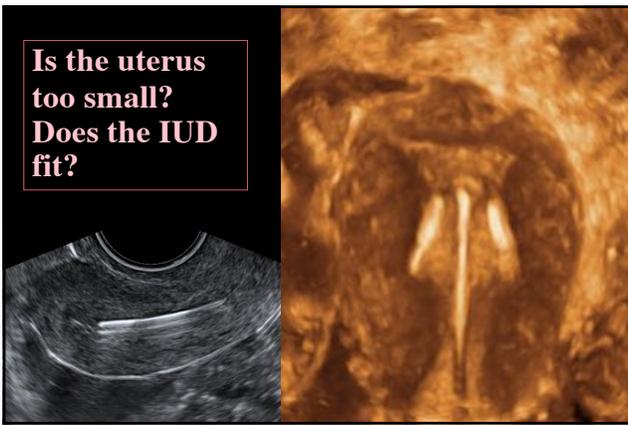


Using the shadow

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Is the uterus too small?
Does the IUD fit?

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Chronic Pelvic Pain

- Adhesions
- Adenomyosis
- Endometriosis
- Chronic Hydrosalpinx

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Long standing pelvic pain

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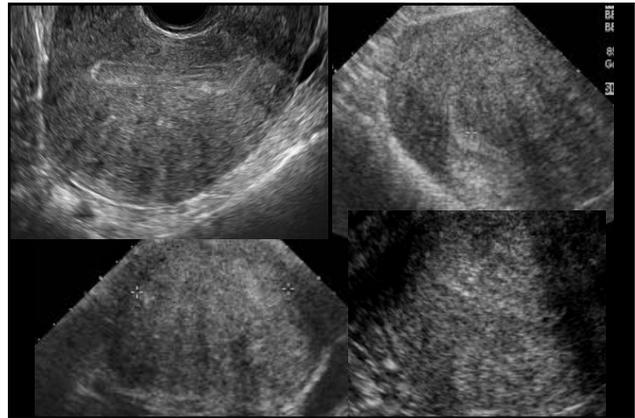


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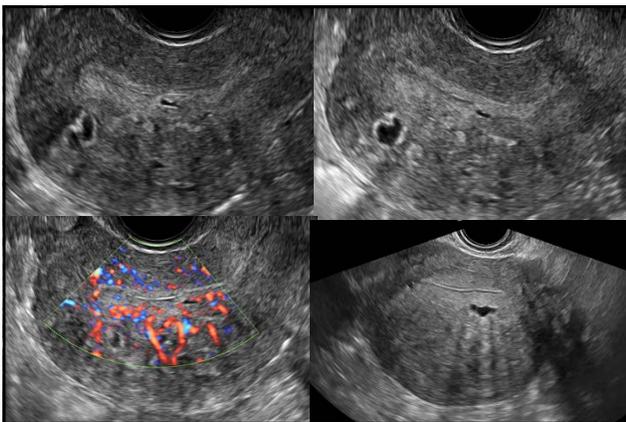
Adenomyosis:

- Thought of as endometriosis of the uterus.
- Characterized by invasion of endometrial glands into the neighboring myometrium.
- Symptoms: Dysmenorrhea, abnormal bleeding, uterine enlargement and tenderness.

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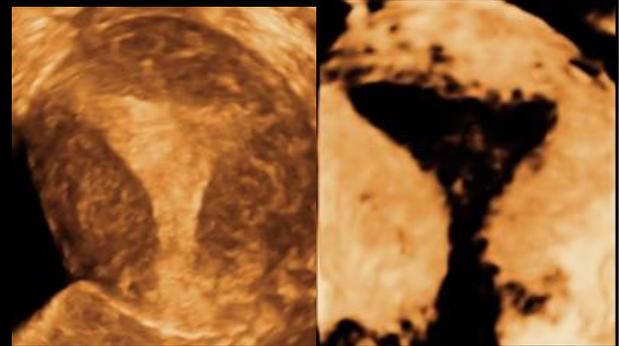


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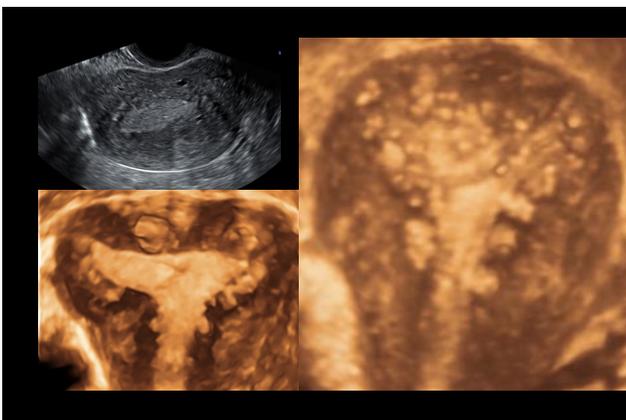


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Fuzzy borders of cavity due to adenomyosis



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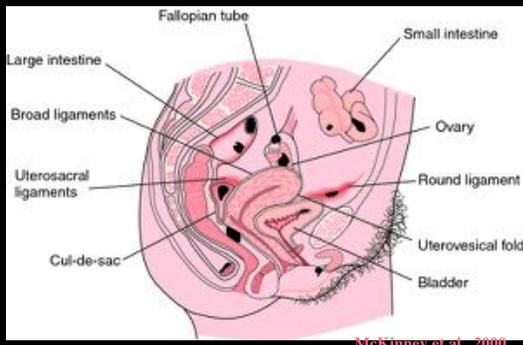


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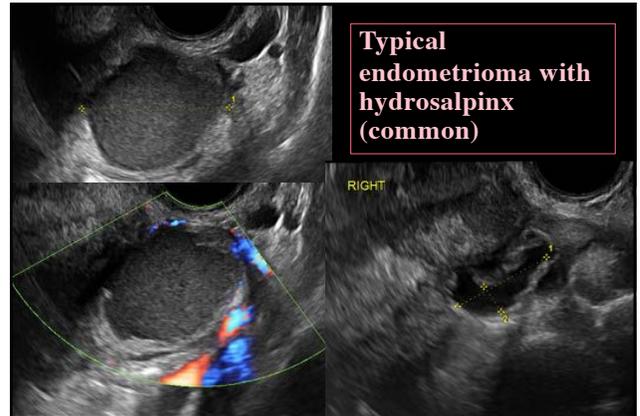
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Common sites of endometriosis

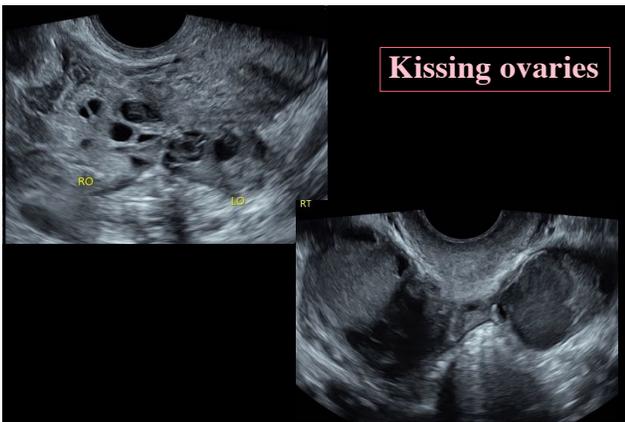


McKinney et al., 2000.

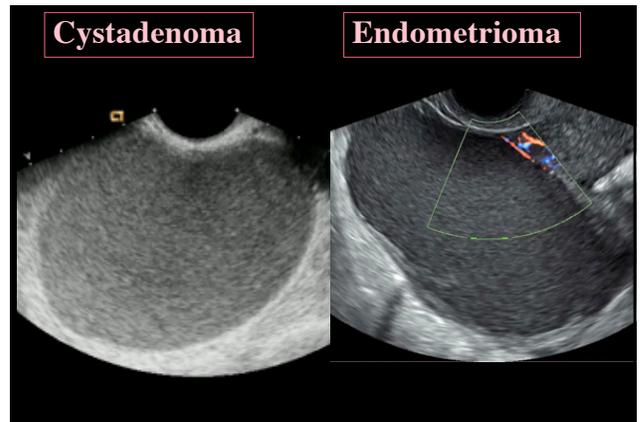
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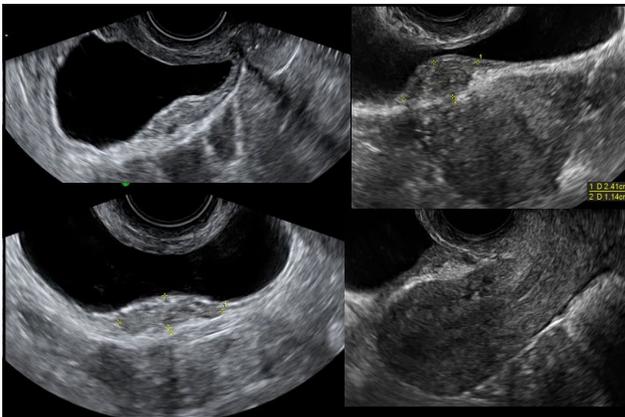
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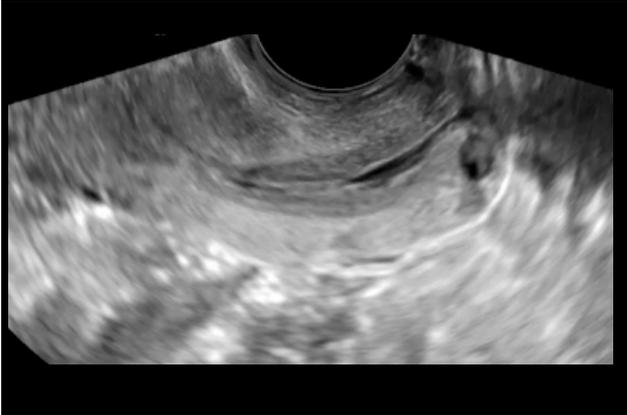
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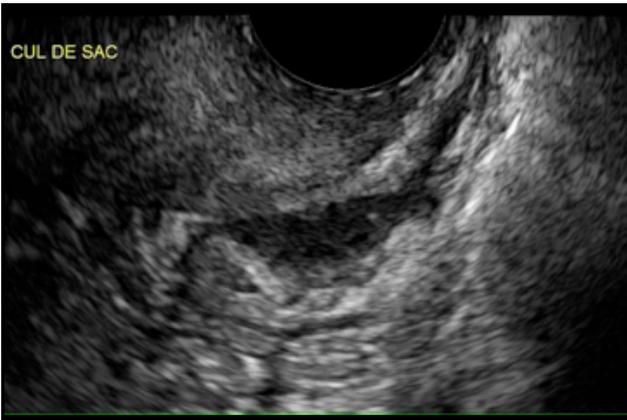
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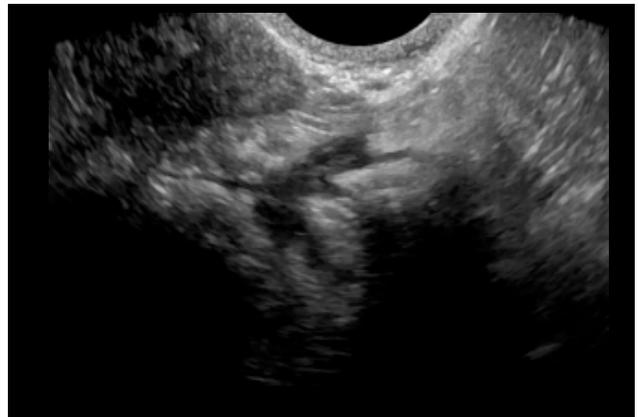
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Ultrasound for detecting deep endometriosis in recto-sigmoid

- 19 studies (2669 patients)
- Ultrasound sensitivity and specificity for detecting disease was 91% and 98% respectively. +LR 38.4 and -LR 0.09

Guerrero et al. UOG(2016);47:281

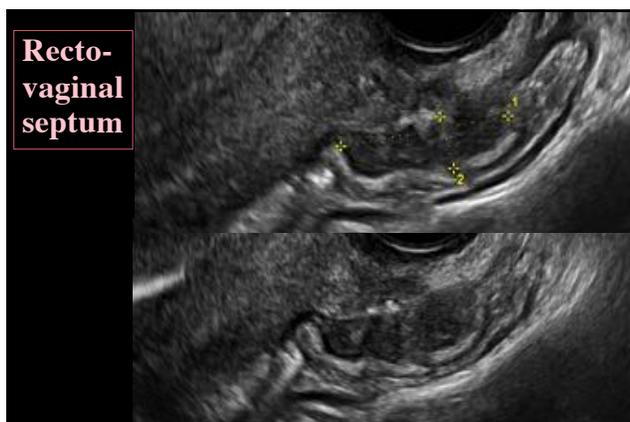
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Detection of Bowel Endometriosis 10 prospective studies – 1106 pts – prevalence of bowel endo 24-73%

Sensitivity	71-98% (pooled data 91%)
Specificity	92-100% (pooled data 98%)
Accuracy	81-99%
+LR	30.36
-LR	0.09

Hudelist et al UOG 2011;37;257

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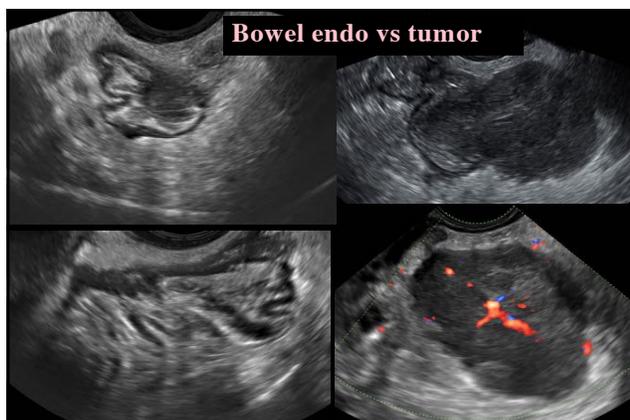


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Tips for the Exam

- More than 50% of patients with an endometrioma have associated DIE
- Data shows that there is a learning curve of about 36-40 cases for someone proficient in GYN ultrasound to learn how to detect DIE accurately.
- Sliding sign - essential part of exam.

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Ultrasound vs. MR 198 pts with surgically confirmed endometriosis

Abrao et al. found that transvaginal ultrasound had a sensitivity, specificity and accuracy of 98%, 100% and 99% respectively compared to MRI's sensitivity, specificity and accuracy of 83%, 98% and 90% for recto-sigmoid endometriosis.

Abrao et al. Hum Reprod. 2007;22:3092-7

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Ultrasound vs. MR for detecting endometriosis

The sensitivity and specificity for detecting deep endometriosis by *tenderness guided* ultrasound was - 86% and 73% respectively while for MRI it was - 90% and 73% respectively.

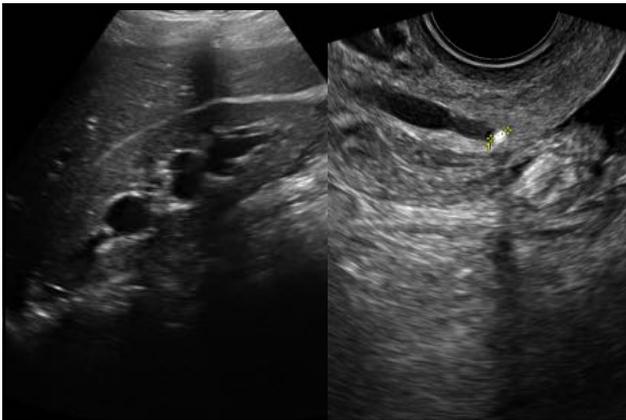
Saba et al. J Magn Reson Imaging. 2012 35:352-60.

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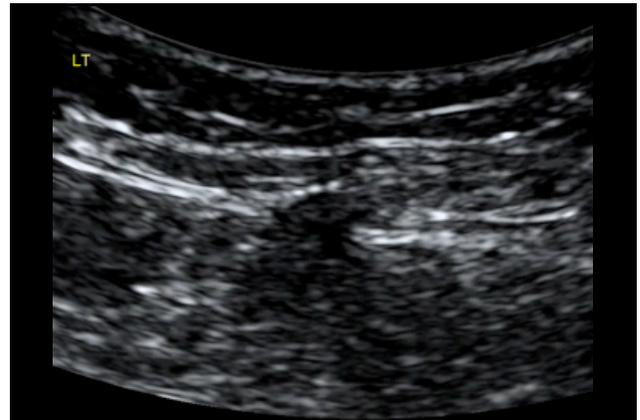
Non-GYN causes of pain

- Ureteral stone
- Cystitis
- Irritable bowel syndrome
- Diverticulitis
- Inflammatory bowel disease
- Adhesions

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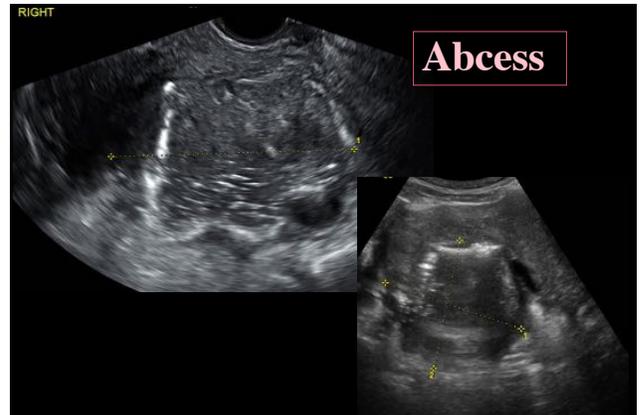
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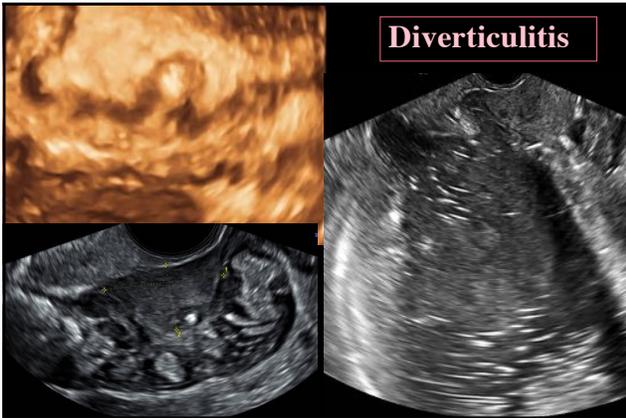
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Diverticulitis

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Conclusions

- Pelvic pain is common and impairs quality of life.
- Accurate Dx requires a combo of ultrasound, physical exam and history.
- Patients with pelvic pain deserve more than just a series of standard pictures of the uterus and ovaries.
- Those that we help are among the most grateful of all our patients!

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