BMUS

Endometriosis: Navigating the sonographic journey from first clue to complex pathway

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UK

NHS
Cambridge
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NHS Foundation Trust

- No conflicts of interest relating to this presentation

34 year old with cyclical pelvic pain and dyschezia



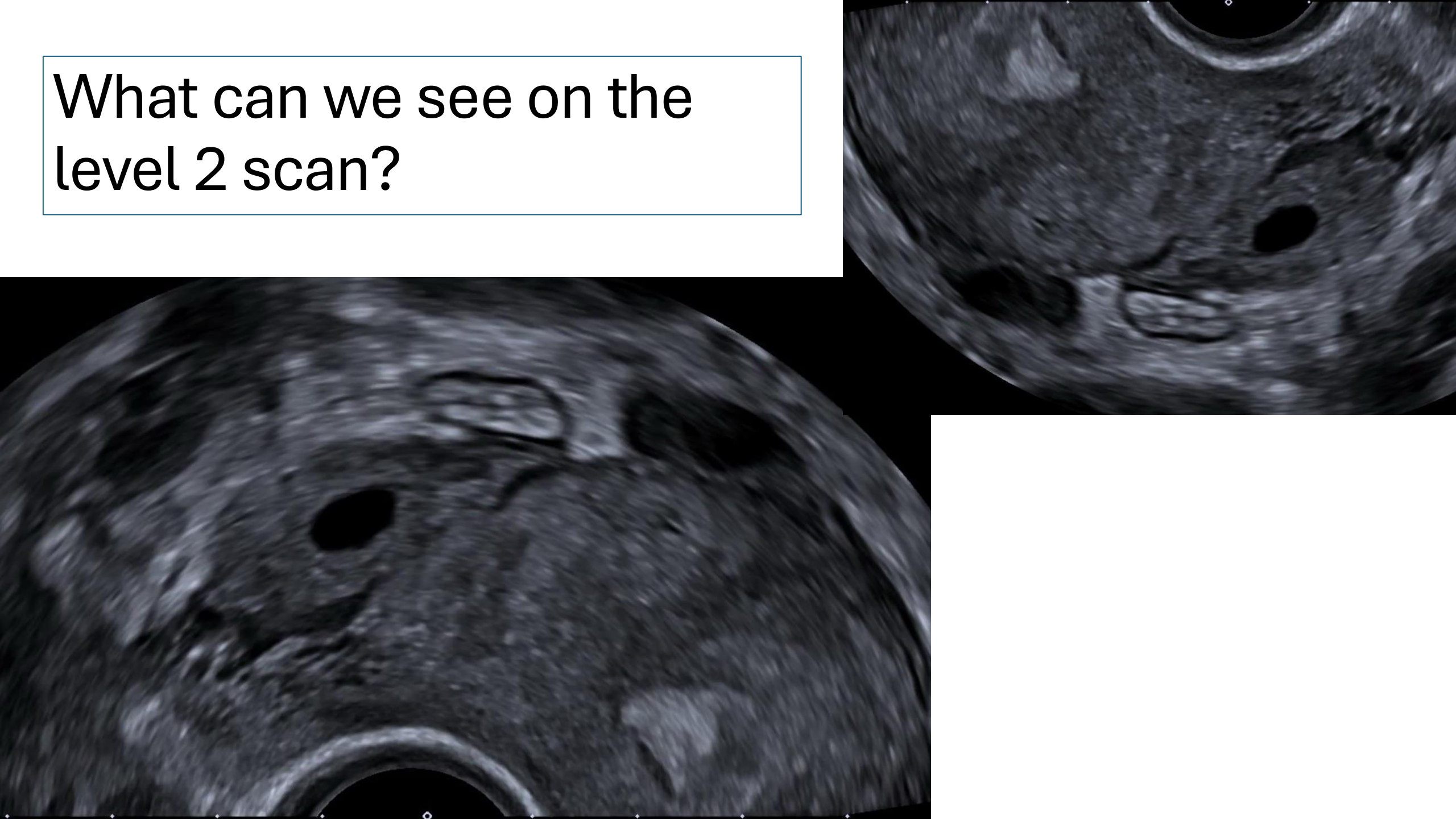
- Level 1 scan detected both ovaries posteromedially displaced into the POD
- In view of patient's symptoms, level 2/3 endometriosis scan recommended

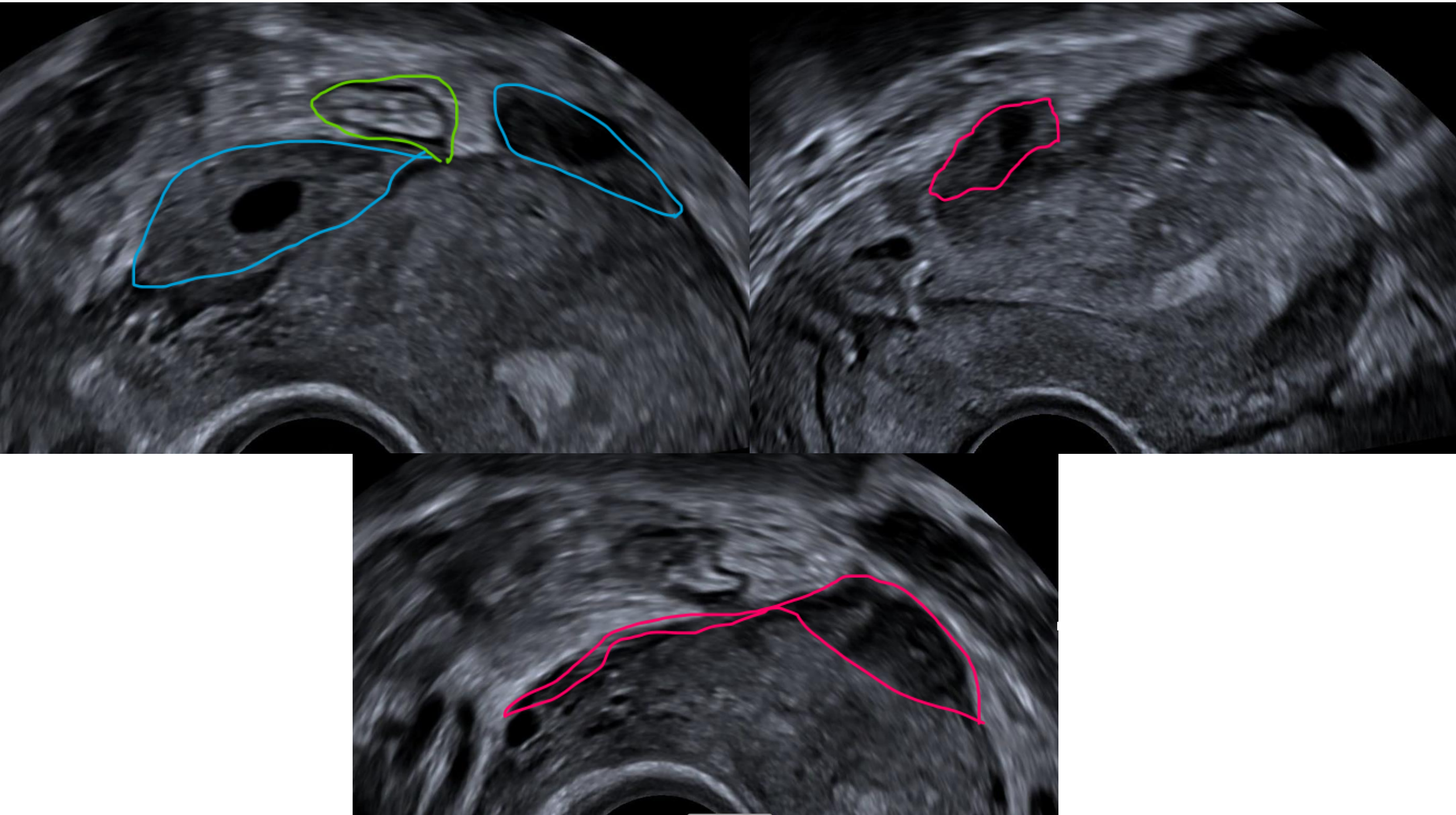
34 year old with cyclical pelvic pain and dyschezia

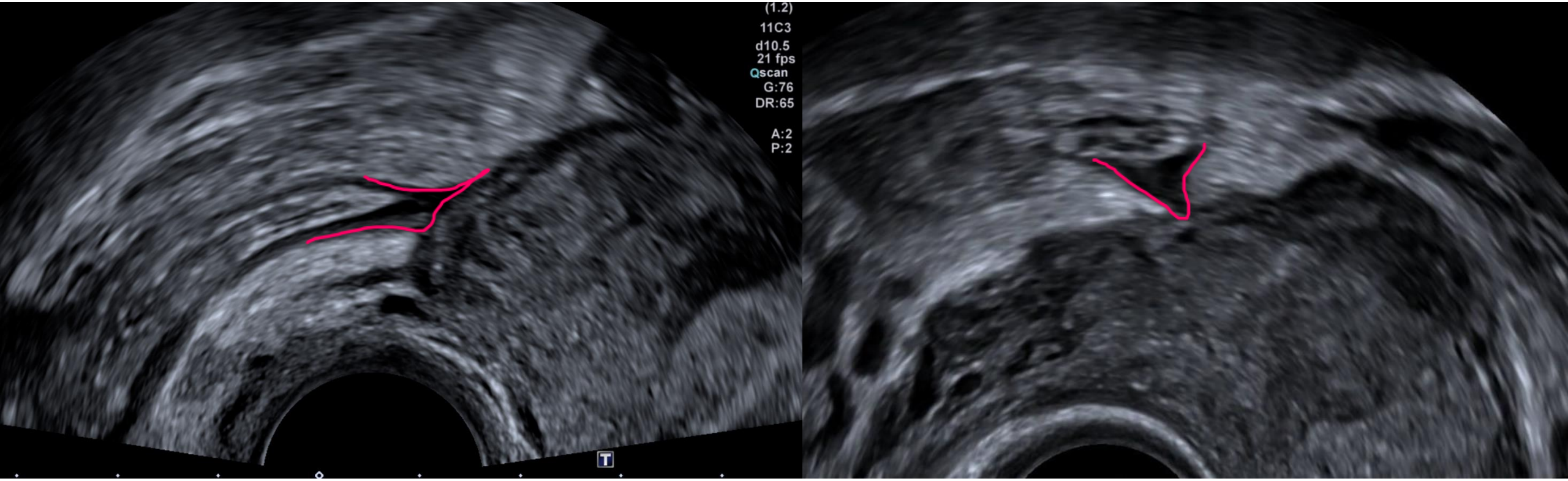




What can we see on the level 2 scan?







- Retrouterine endometriotic plaque
- Both ovaries adherent to the endometriotic plaque
- The rectum is adherent to the endometriotic plaque
- Tiny muscle invasive endometriotic bowel nodule

Outline

- Level 2 & 3 endometriosis scan

- Compartments
  - Posterior
  - Middle
  - Anterior

- Key areas to assess:
  - USLs / uterine torus
  - Posterior vaginal fornix / rectovaginal space
  - Bowel
  - Bladder / vesicouterine space / ureters

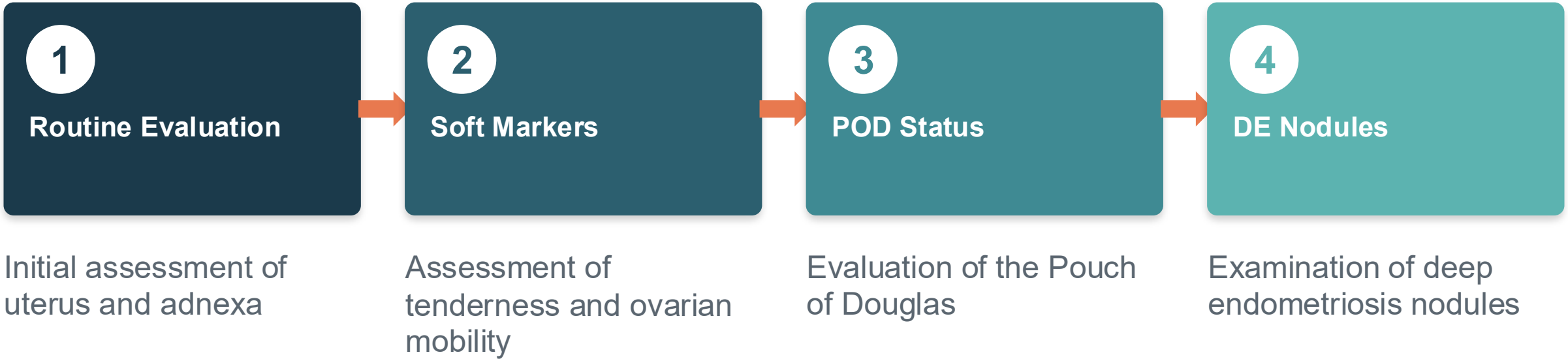
Pelvic US

ULTRASOUND in Obstetrics & Gynecology

isuog

Systematic approach to sonographic evaluation of the pelvis in women with suspected endometriosis, including terms, definitions and measurements: a consensus opinion from the International Deep Endometriosis Analysis (IDEA) group

- Systematic ultrasound technique essential



Pelvic US

20-40% pts with DE have endometrioma

Ovarian sliding sign

Adhesions between uterus & bowel

1 **Routine Evaluation**

2 **Soft Markers**

3 **POD Status**

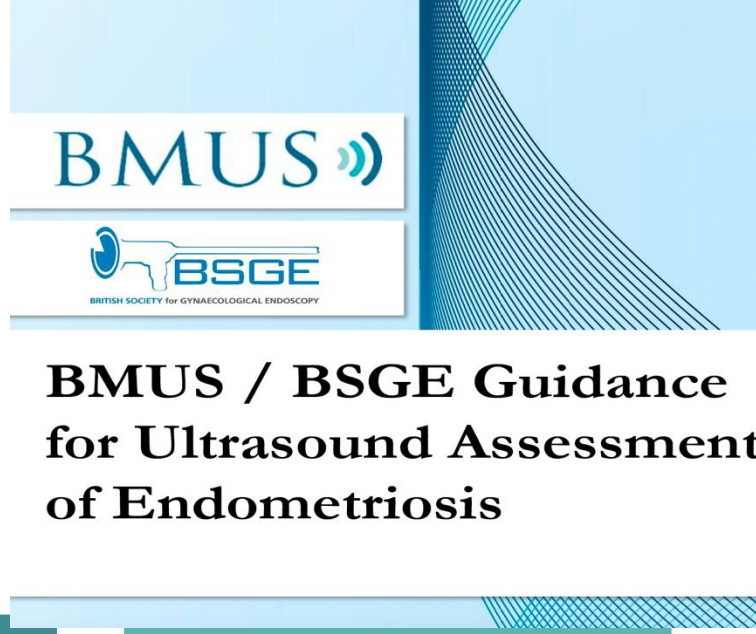
4 **DE Nodules**

Endo & adeno co-exist

Take a history

Uterine sliding sign

Methodical assessment for DE



Level 2 & 3 endometriosis scan competencies

Level 2 competencies

In addition to level 1, level 2 ultrasound practitioners should have the skills to:

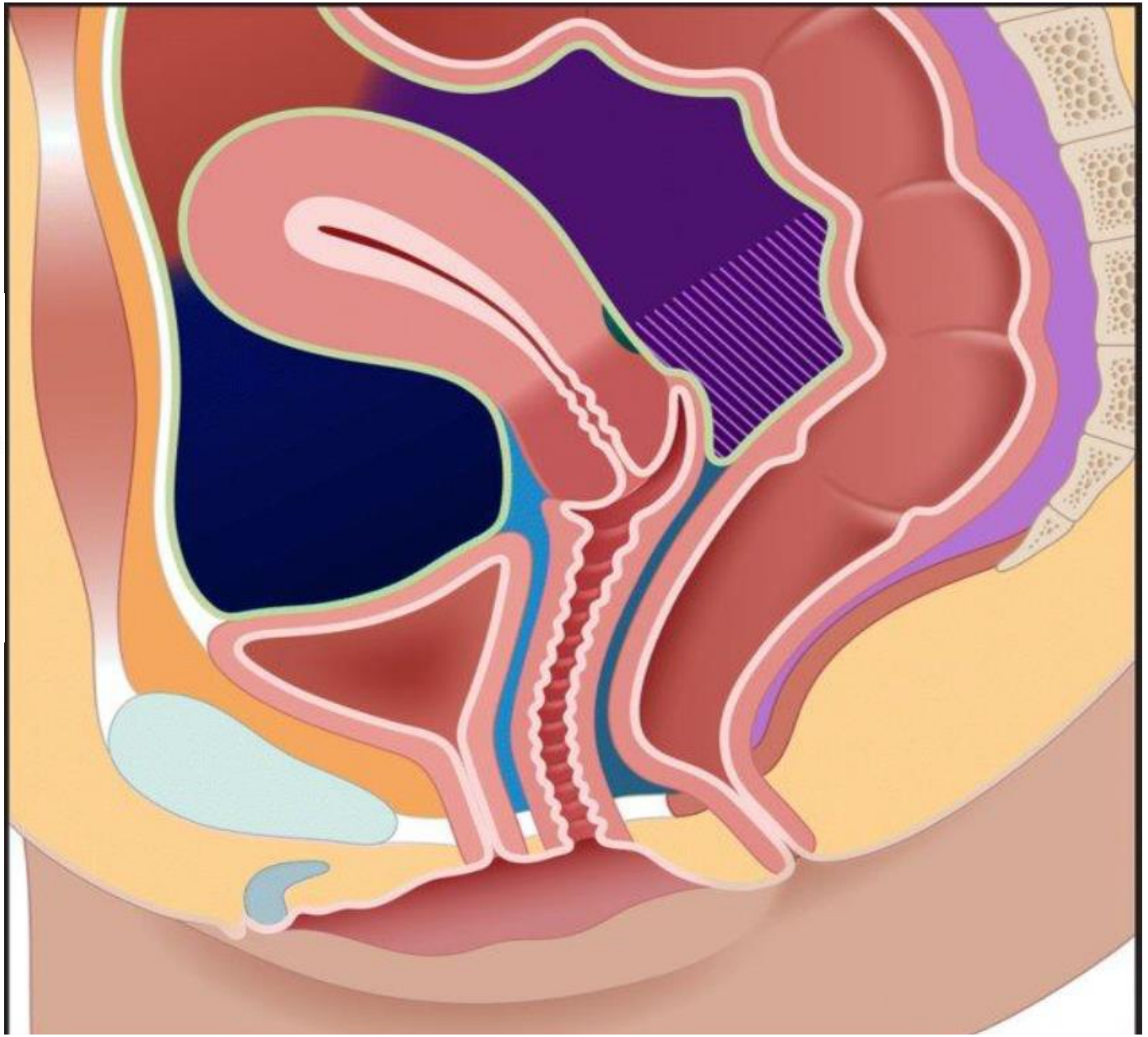
- Assess the cervix and the posterior vaginal fornix
- Assess the uterus for more subtle features of adenomyosis
- Recognise and describe the appearance, volume and location of pelvic fluid (free vs loculated)
- Identify, assess and report thickening of the uterosacral ligaments / torus uterinus and associated nodules
- Assess ovarian mobility (in relation to surrounding structures)
- Identify and report bowel nodules and associated adhesions
- Able to write a detailed and clinically relevant ultrasound report to describe the above features and advise appropriate onward referral for management of potential endometriosis

Level 3 competencies

- Assess the extent of bowel muscle invasion and distance of nodules from anal verge
- Map subtle peritoneal lesions
- Identify and report bladder nodules
- Identify and report vesico-uterine junction (VUJ) adhesions
- Evaluation of ureter from pelvic sidewall to VUJ to assess disease within the parametrium
- Provide a transrectal US service (where governance and local guidelines permit)

Pelvic anatomy

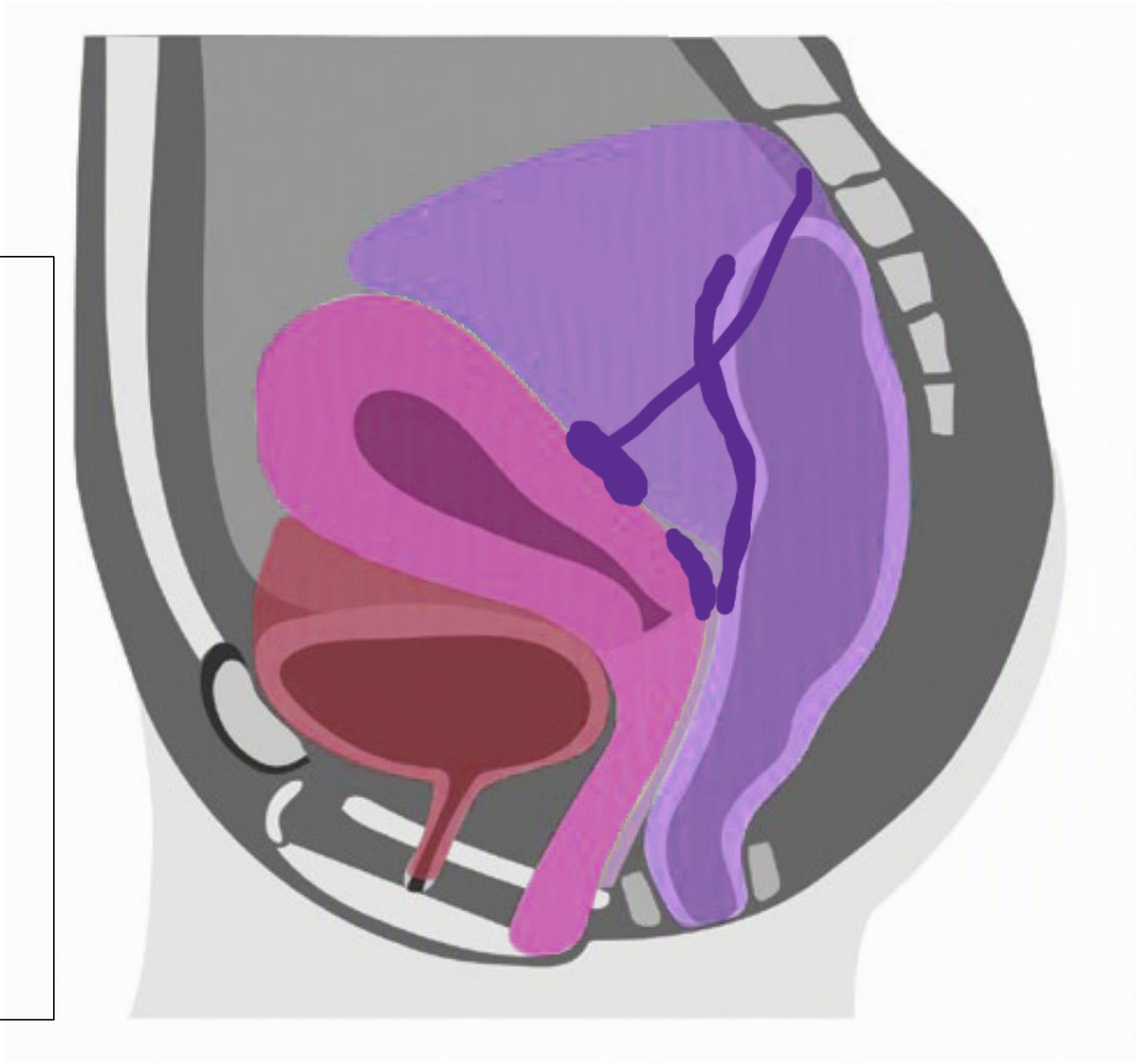
- Prevesical space
- Peritoneal reflection
- Vesicouterine/ vesicocervical space
- Vesicovaginal space/septum
- Torus uterinus
- Rectouterine space
- Retrocervical space
- Rectovaginal space/septum
- Presacral space



BMUS / BSGE Guidance for Ultrasound Assessment of Endometriosis

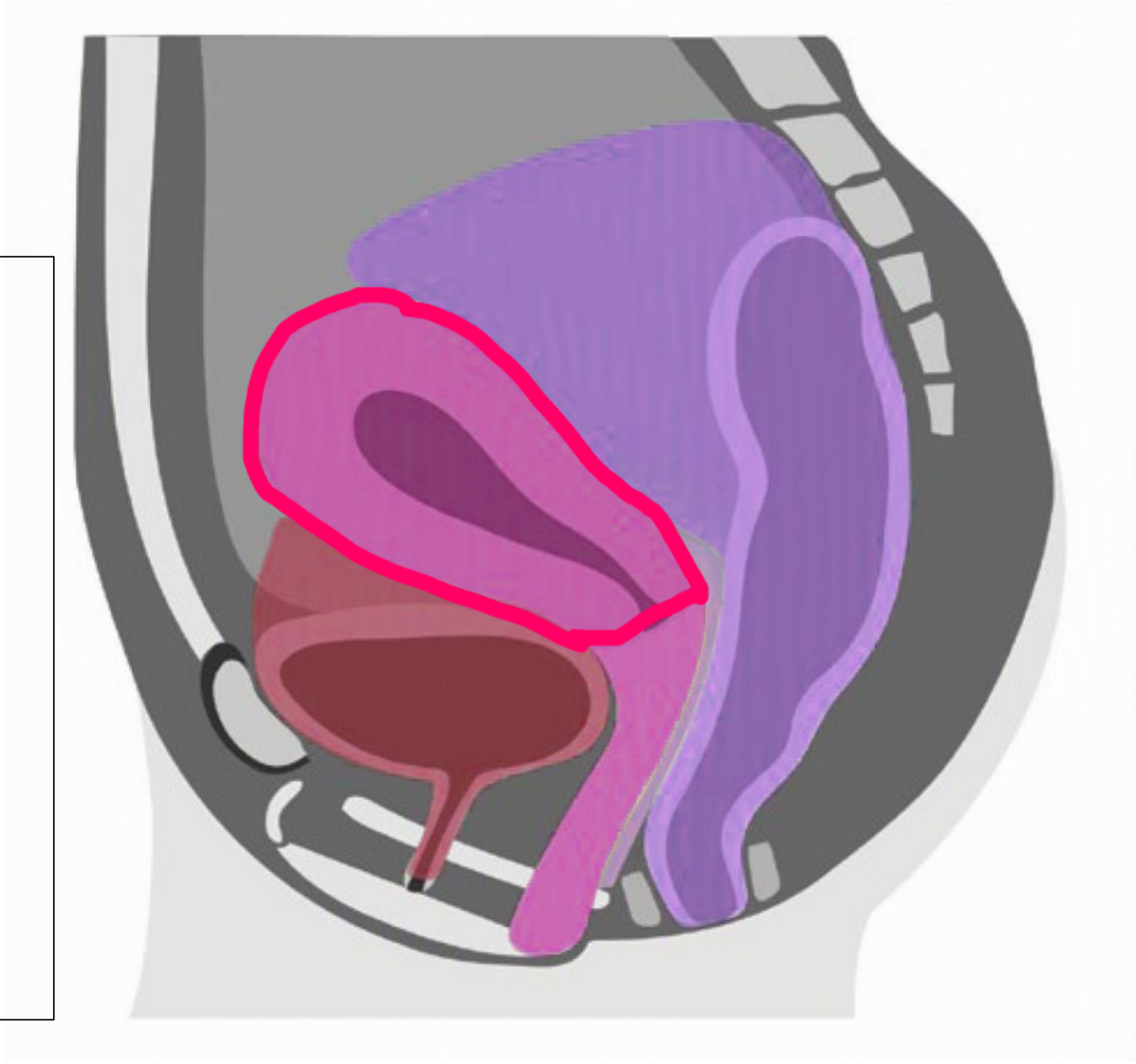
Compartments

- Posterior compartment
  - Torus uterinus / USLs
  - Posterior vaginal fornix / rectovaginal space (RVS)
  - Rectum / distal sigmoid



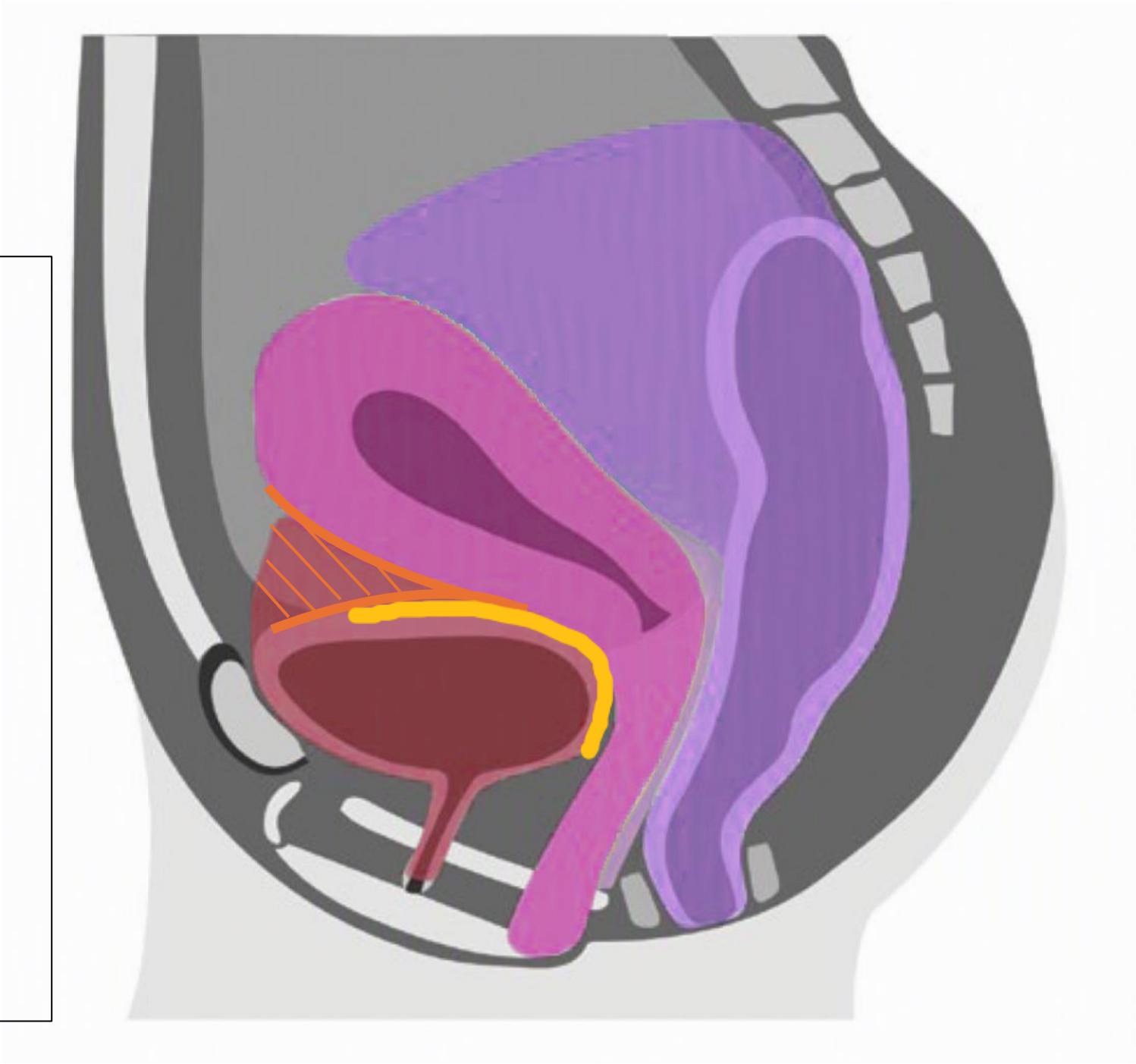
Compartments

- Posterior compartment
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  - Rectum / distal sigmoid
- Middle compartment
  - Uterus
  - Ovaries / fallopian tubes



Compartments

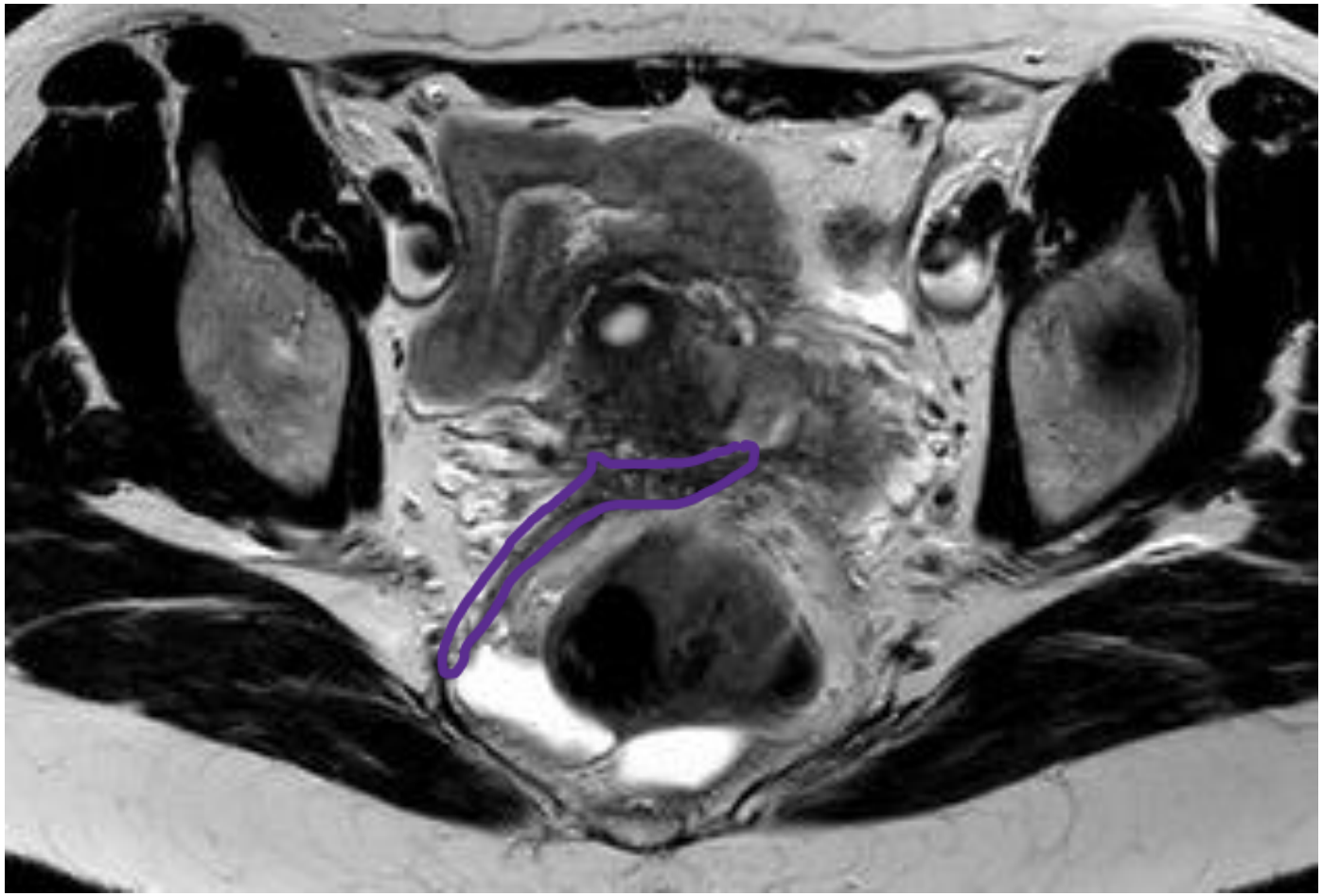
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- Anterior compartment
  - Vesicouterine space
  - Bladder
  - Ureters

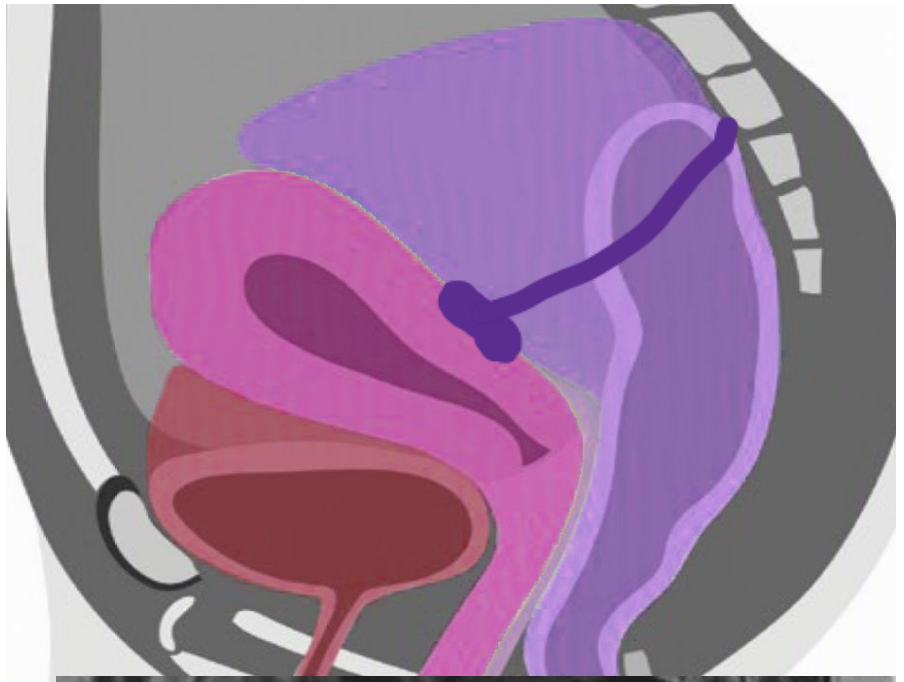


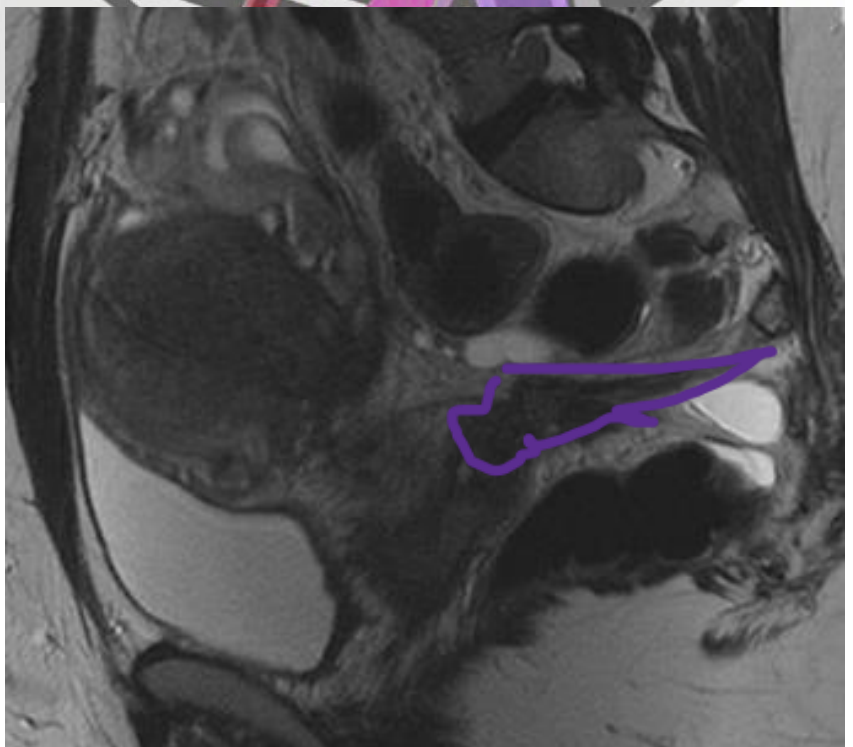
Key areas to assess

- **Torus uterinus / USLs**
- Posterior vaginal fornix / RVS
- Bowel
- Vesicouterine space / bladder/ ureters

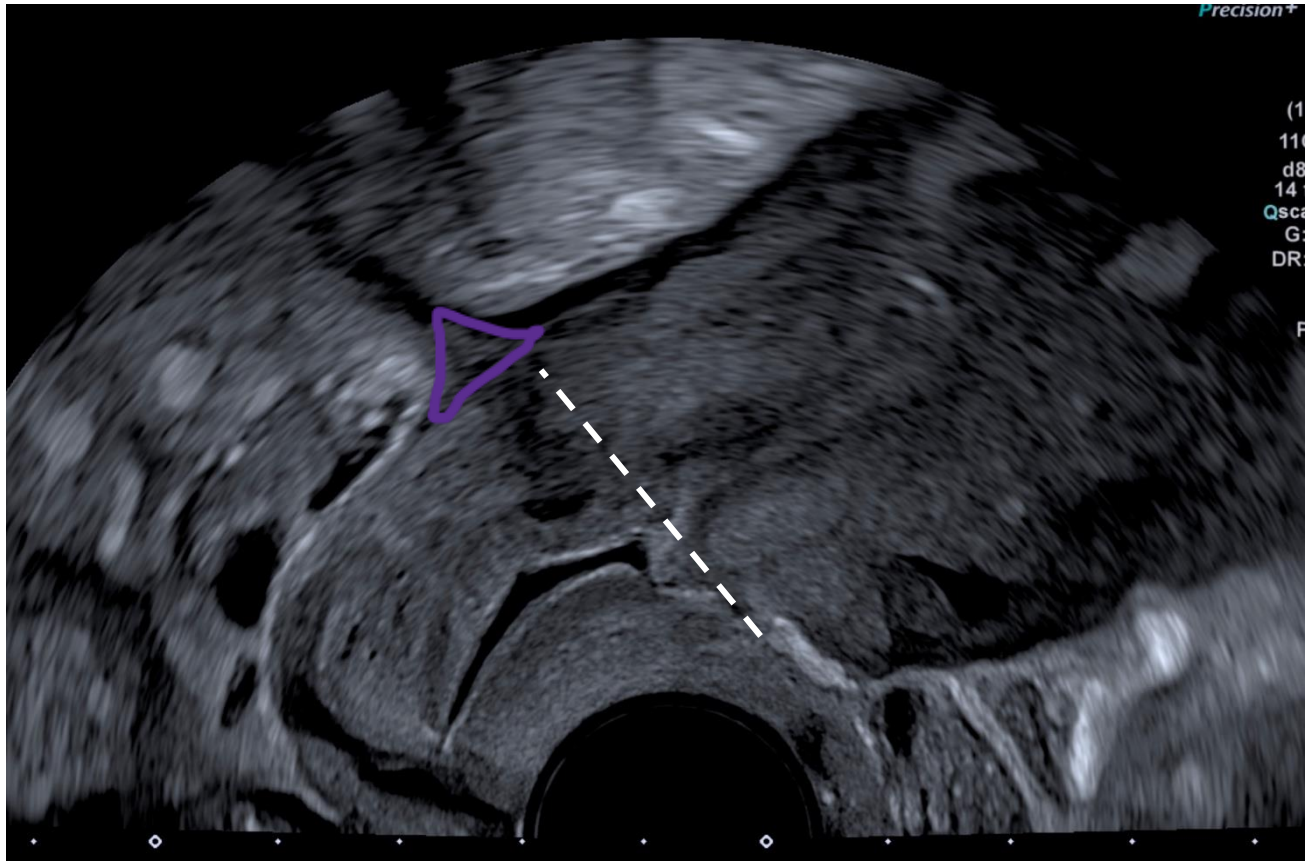
Torus uterinus / USLs



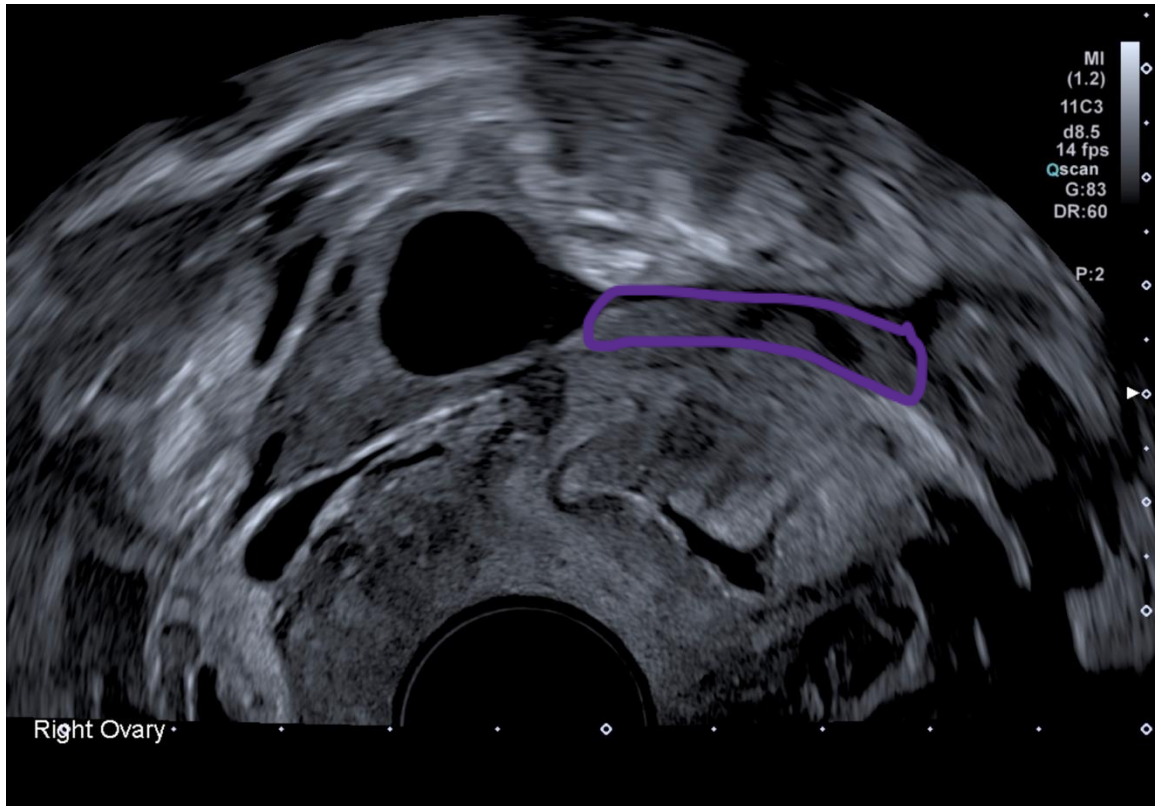




Torus uterinus / USLs



LS

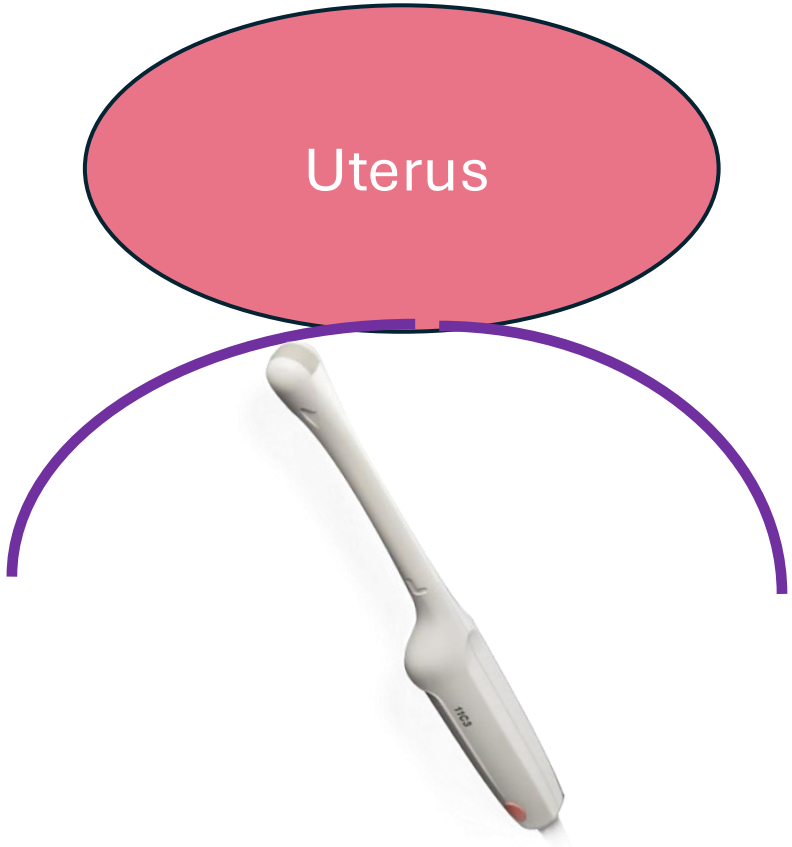


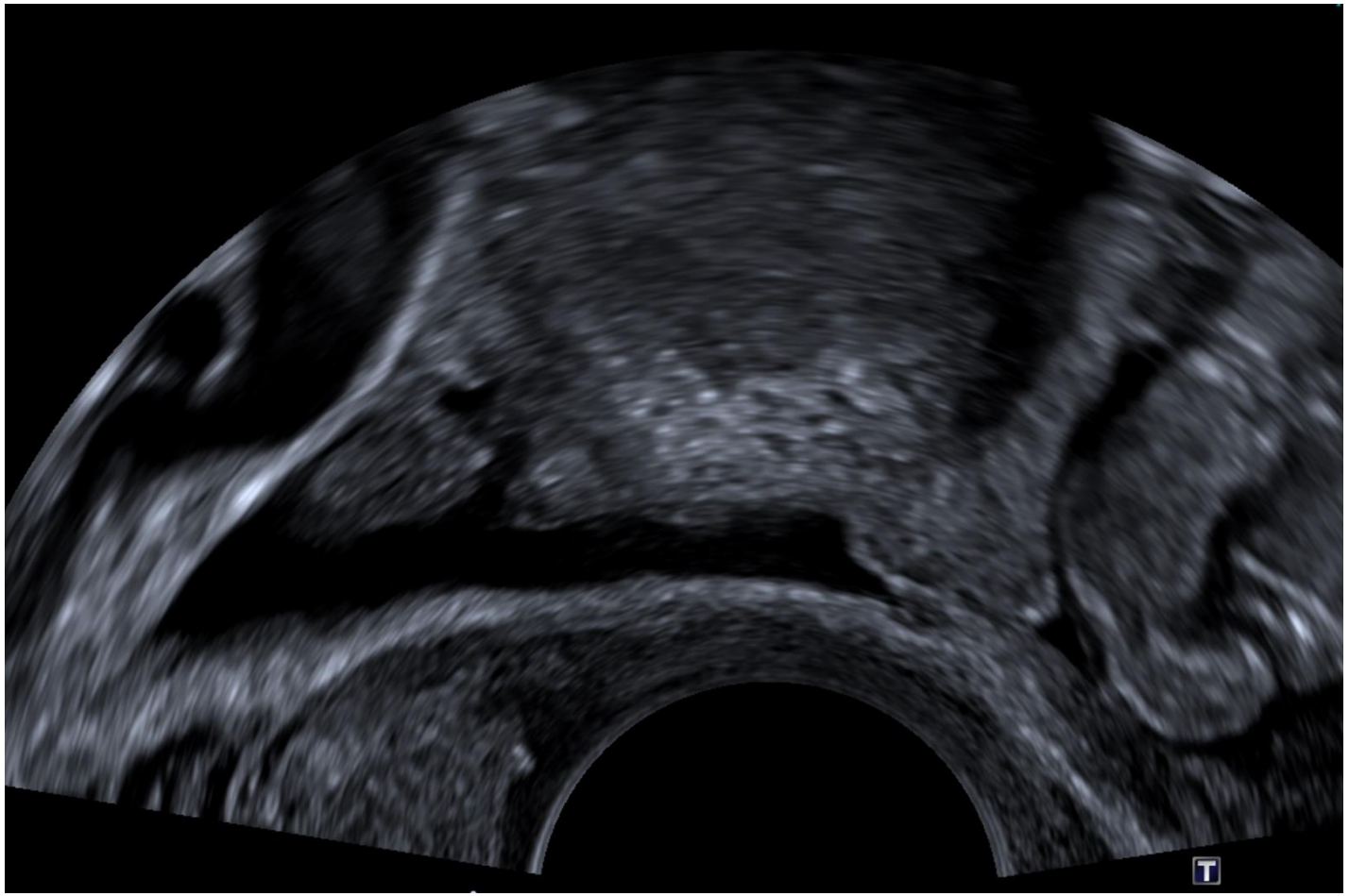
TS

Inserting the probe into the posterior vaginal fornix



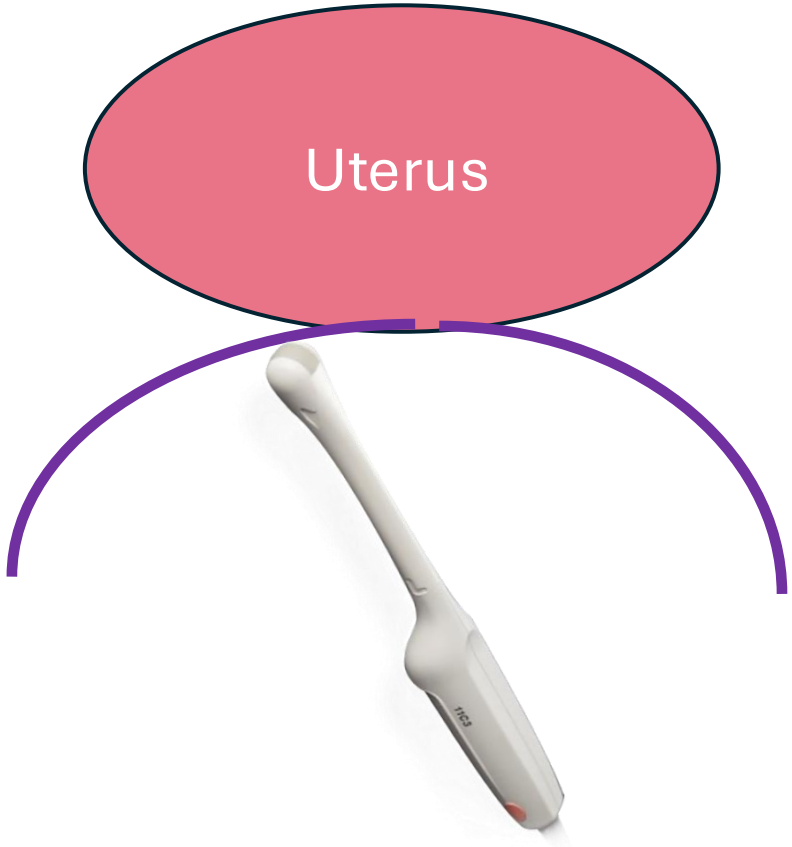
Torus uterinus / USLs

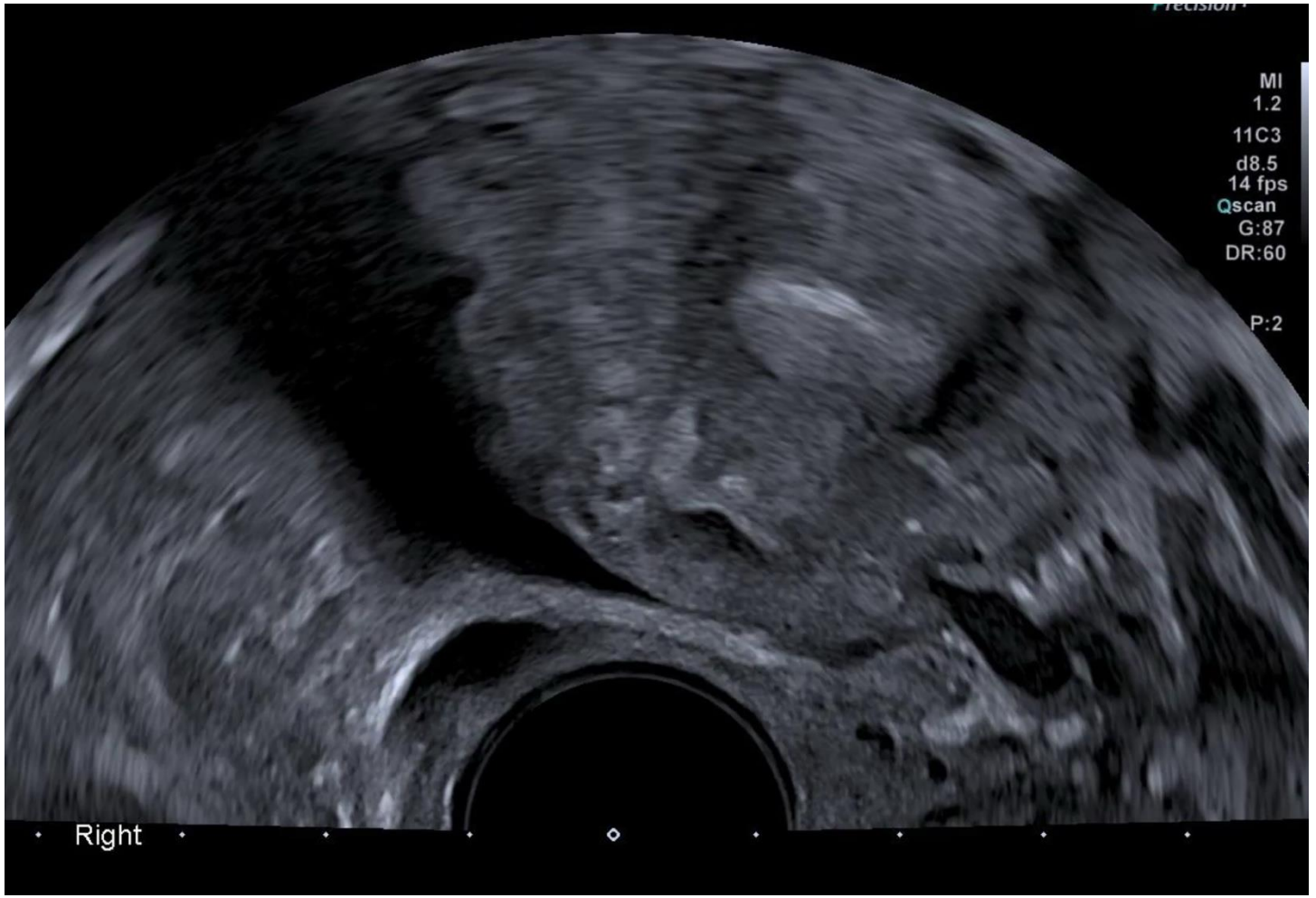




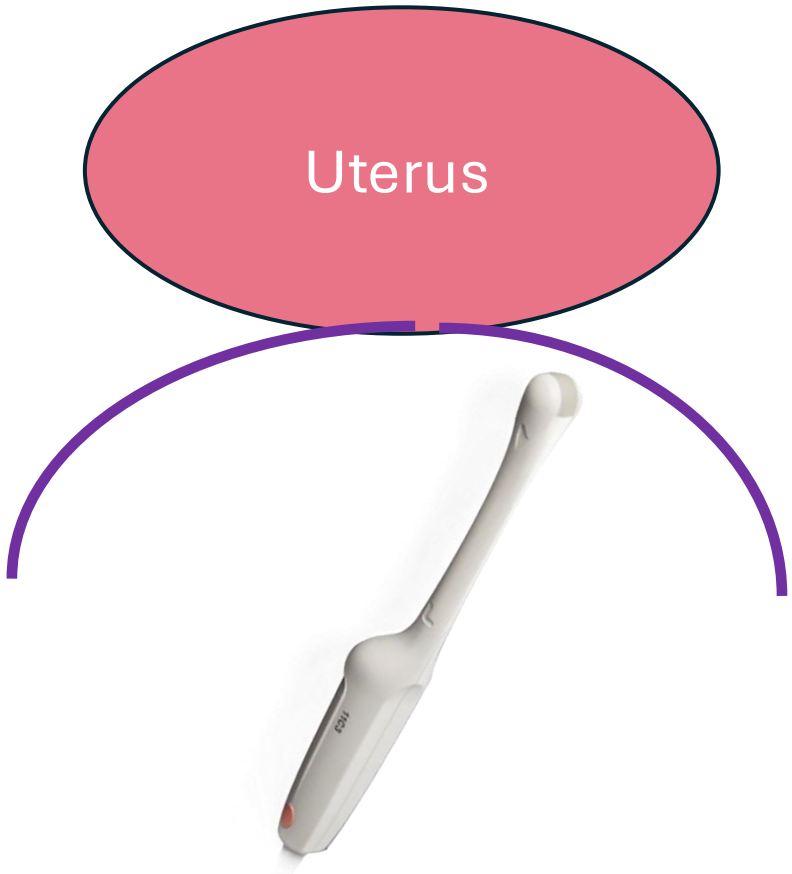
VanBuren, Radiology 2024

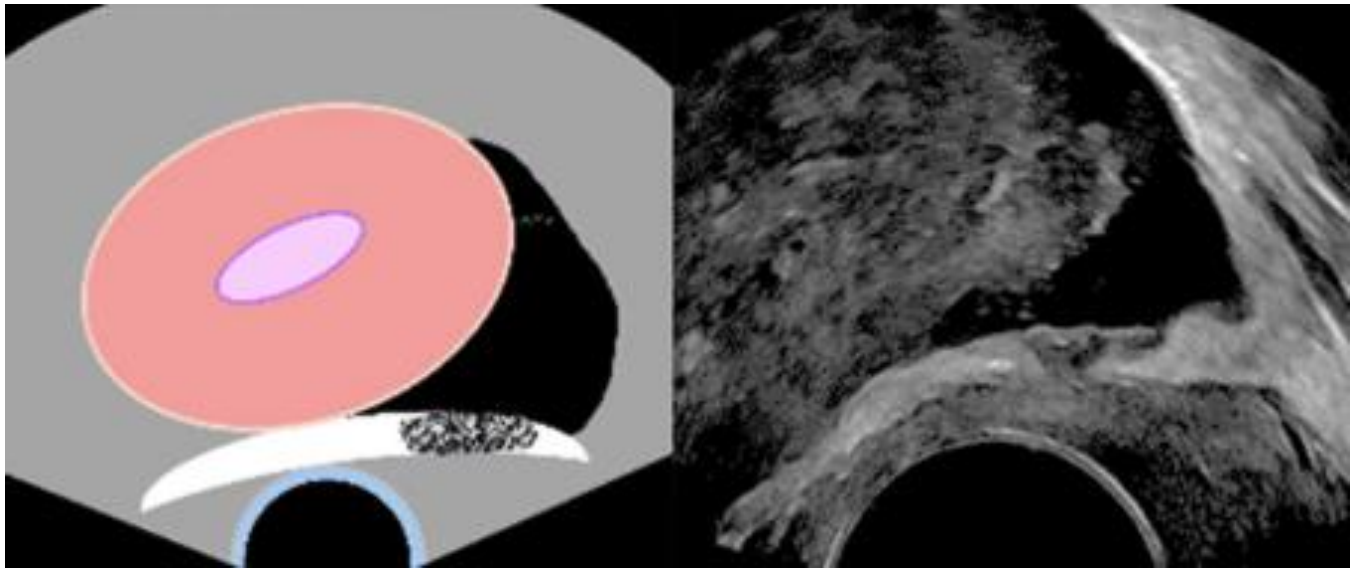
Torus uterinus / USLs

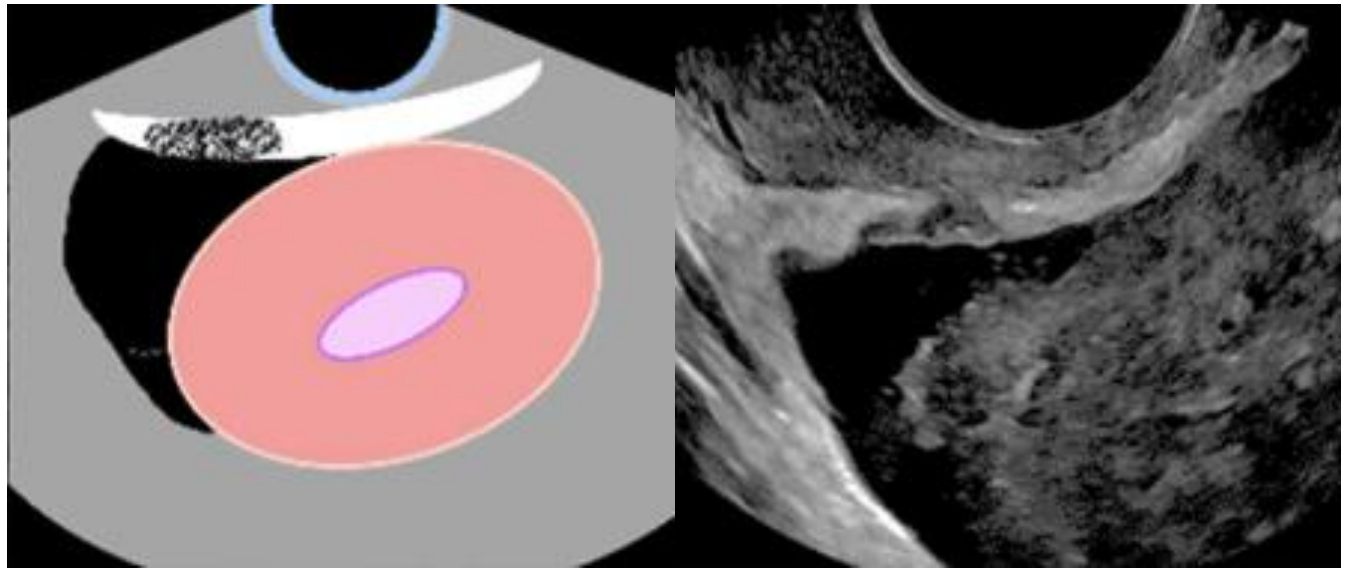




Torus uterinus / USLs

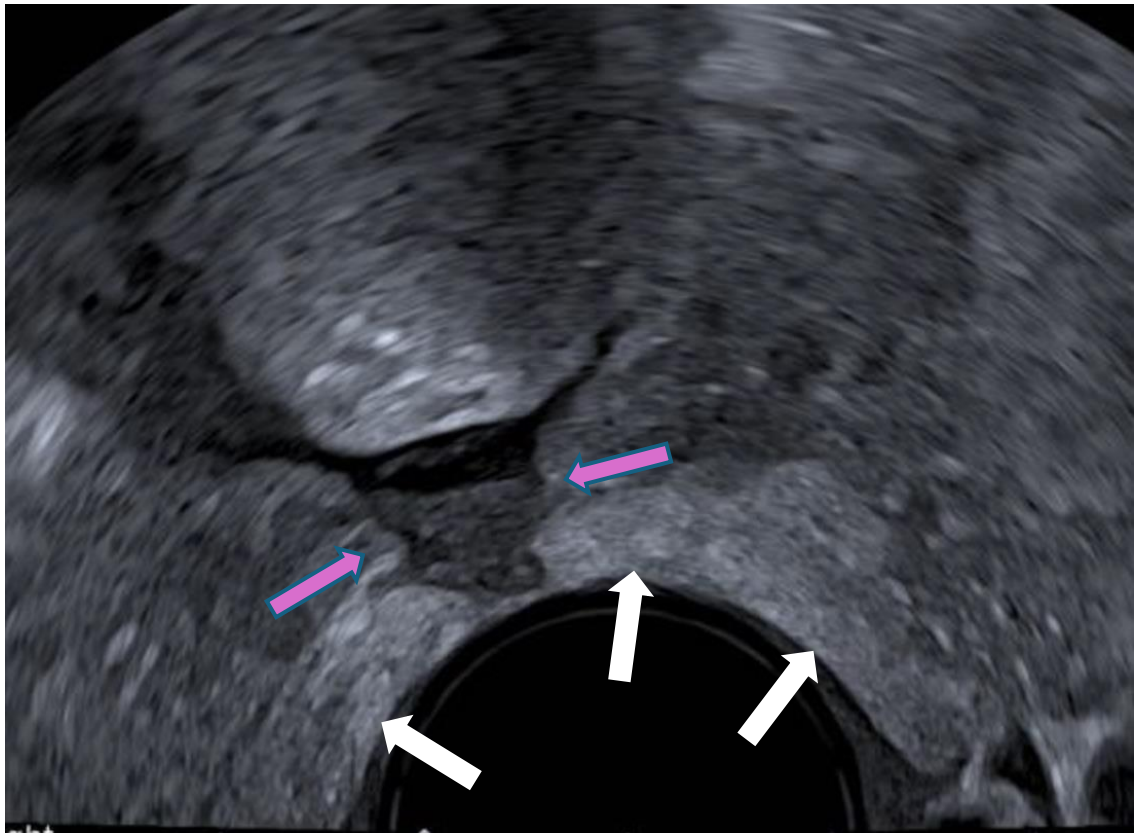


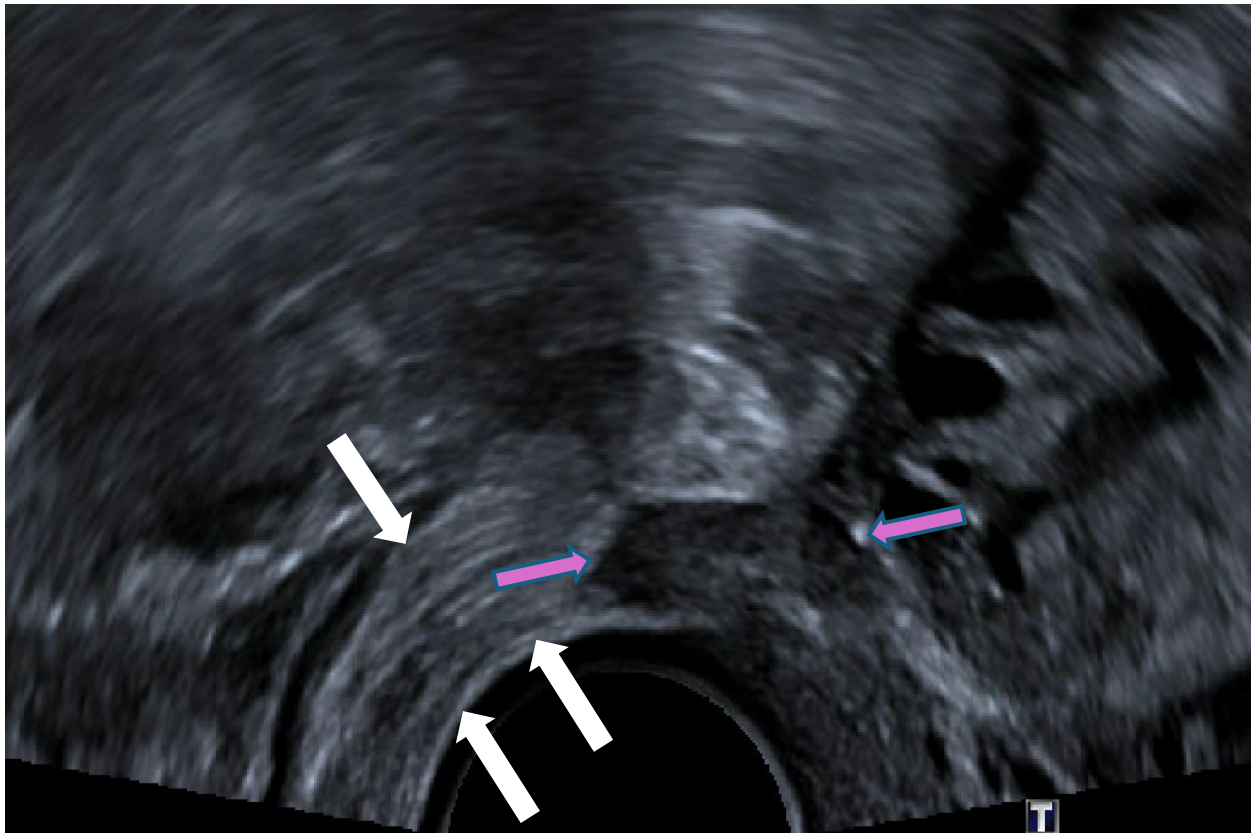




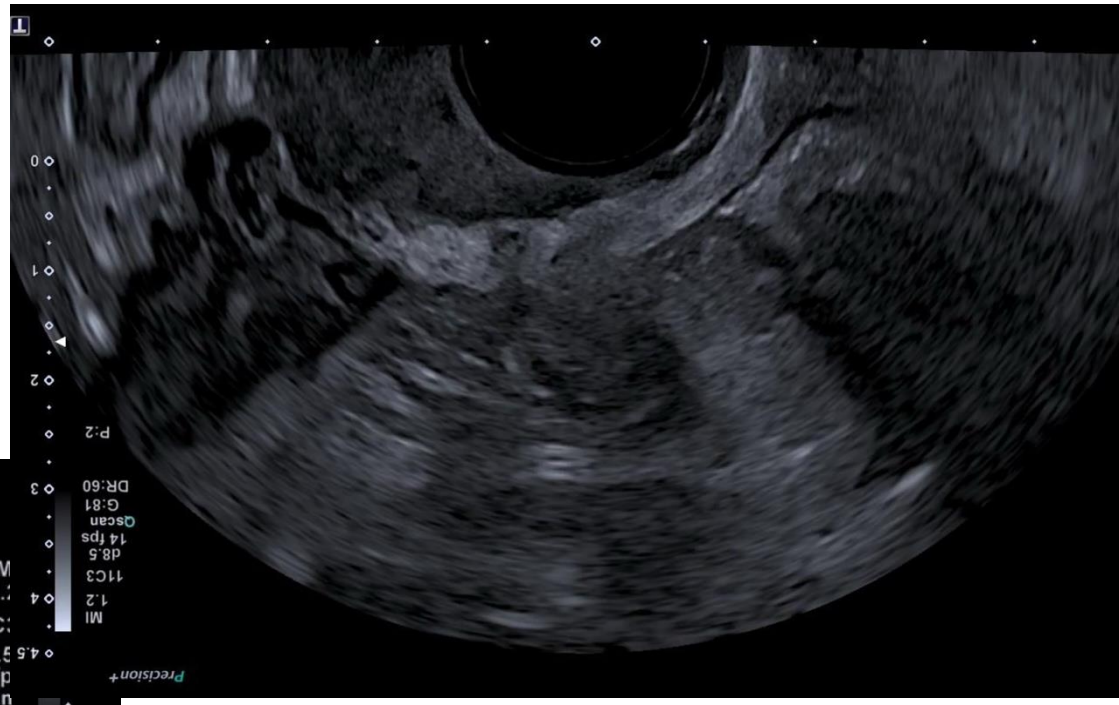
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Torus uterinus / USLs

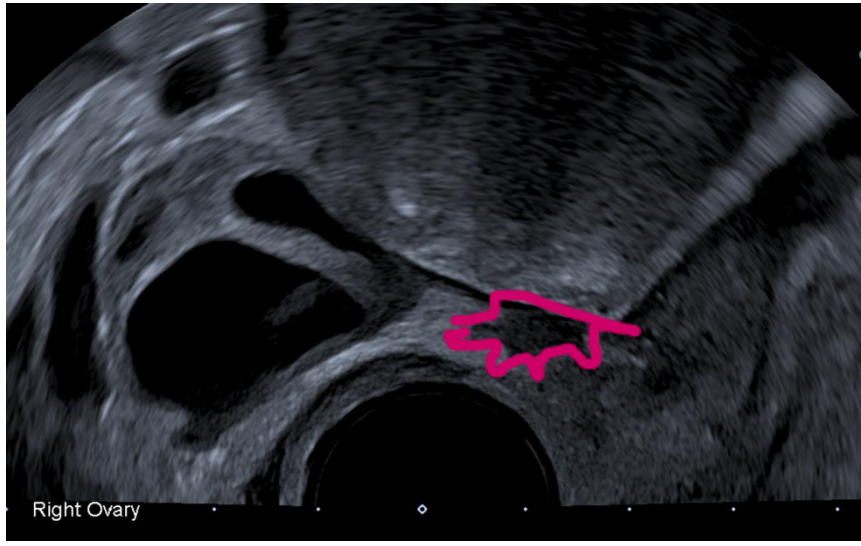




Torus uterinus / USLs



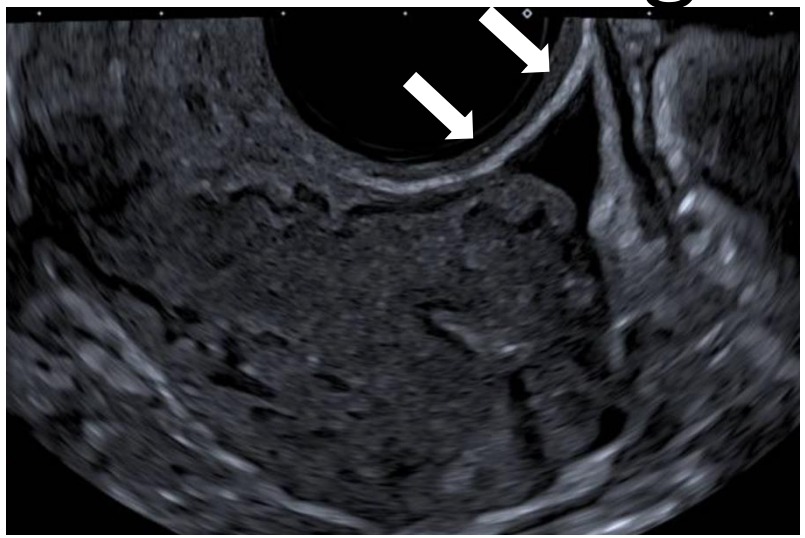


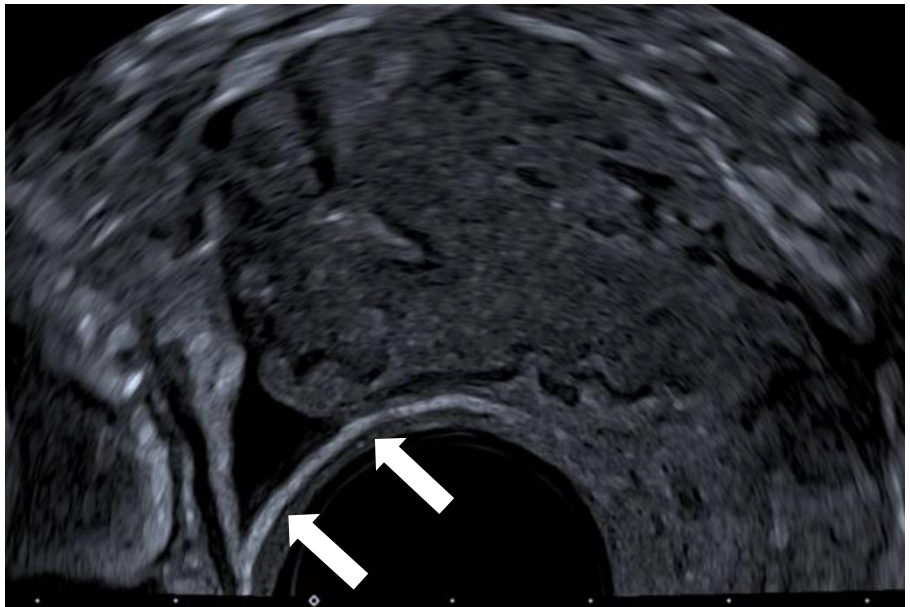


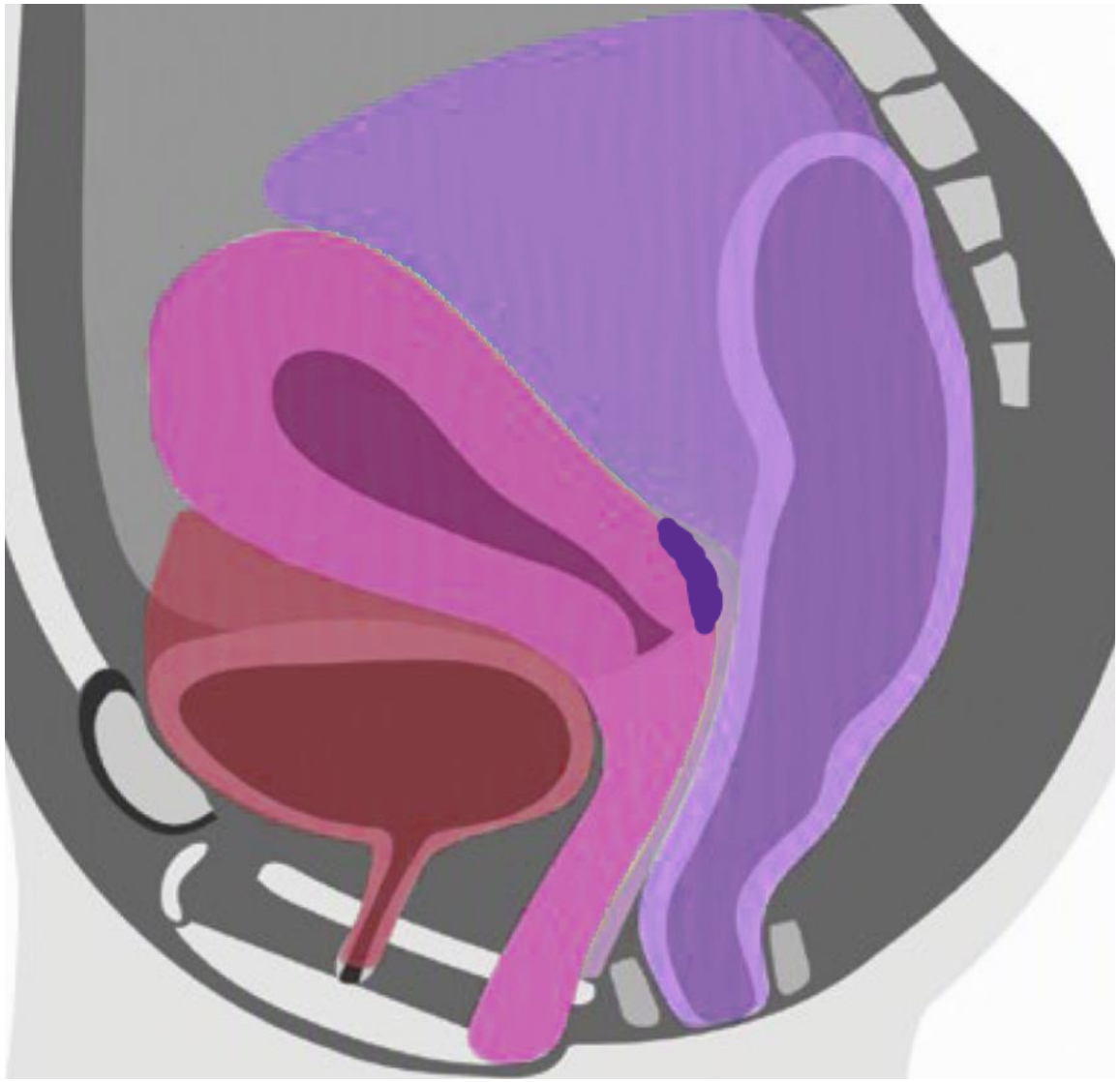
Key areas to assess

- Torus uterinus / USLs
- **Posterior vaginal fornix / RVS**
- Bowel
- Vesicouterine space / bladder / ureters

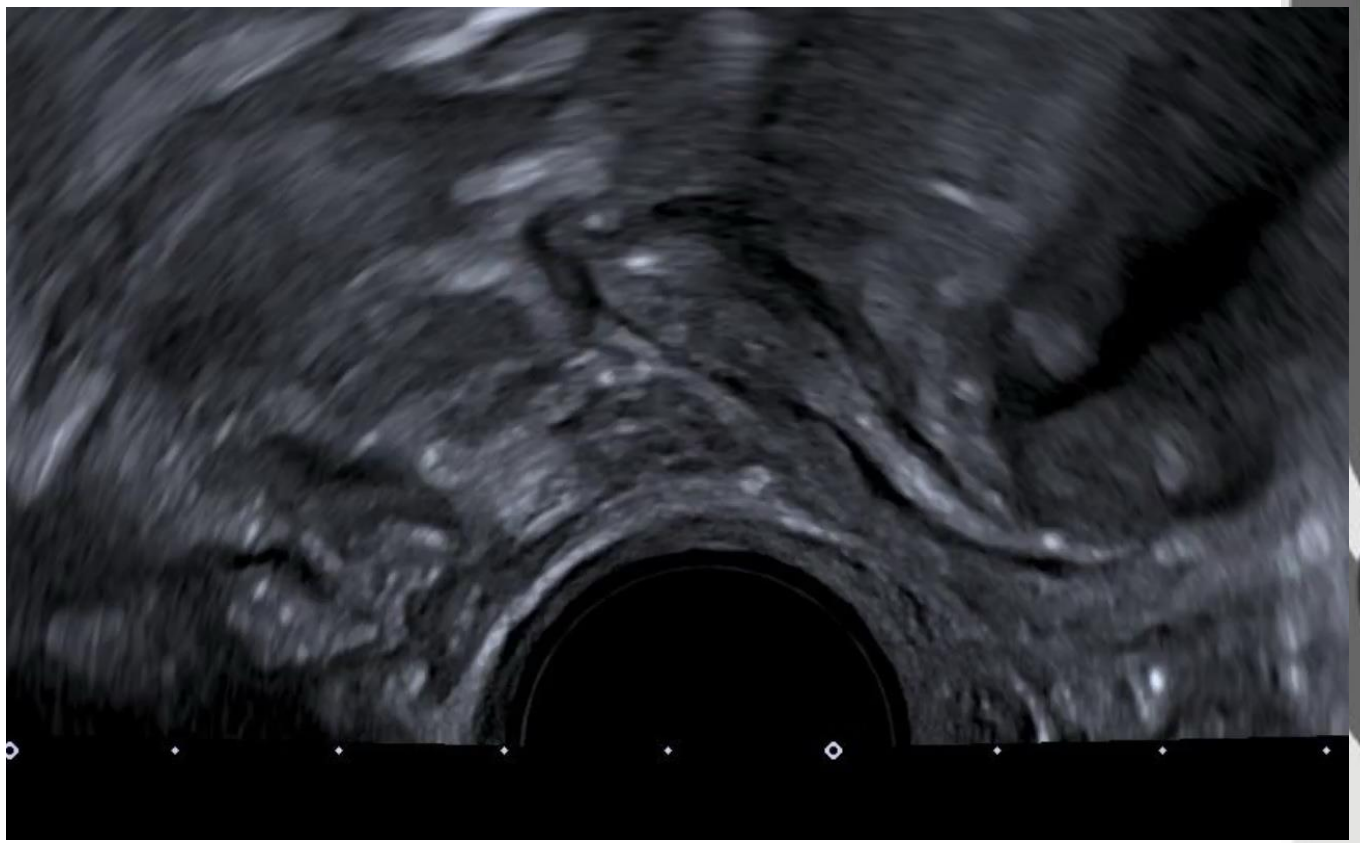
Posterior vaginal fornix / RVS

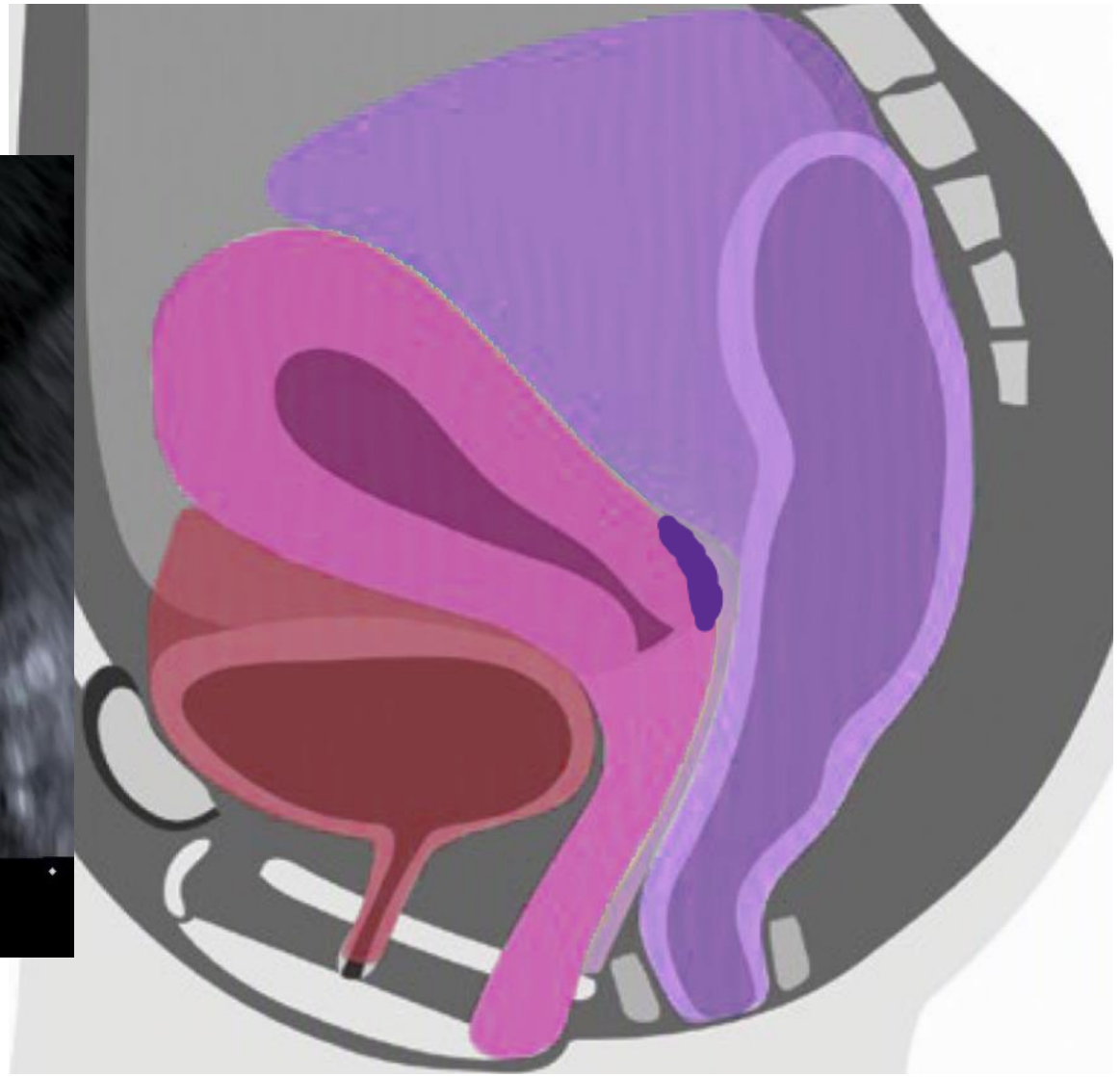






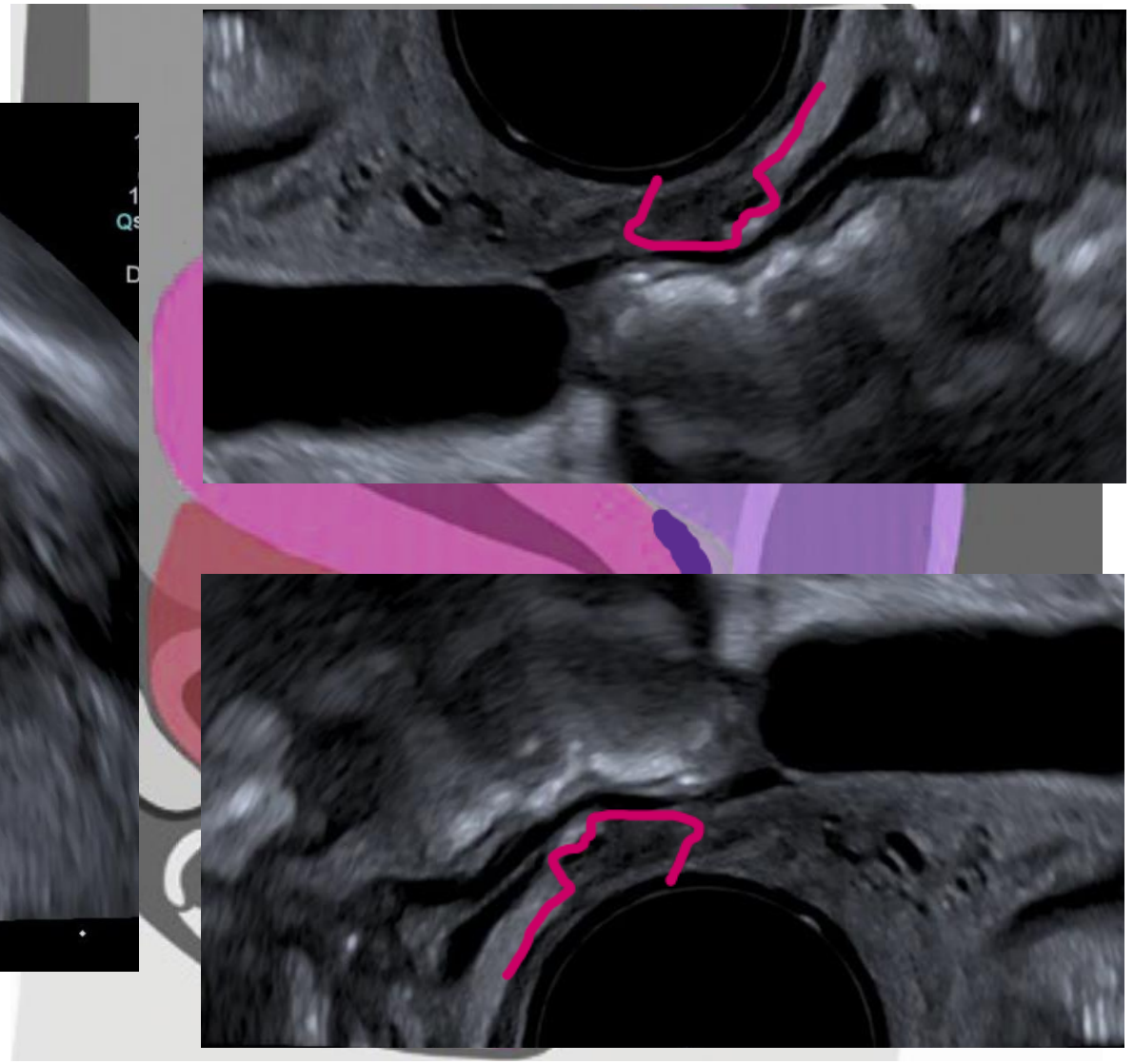
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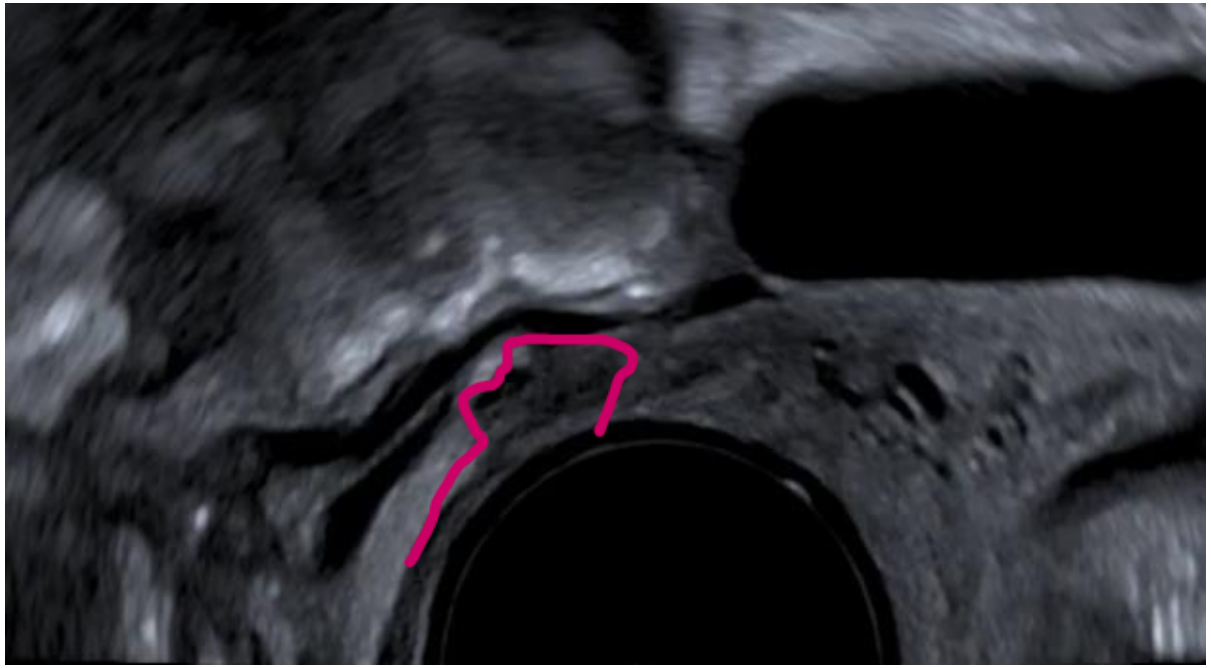


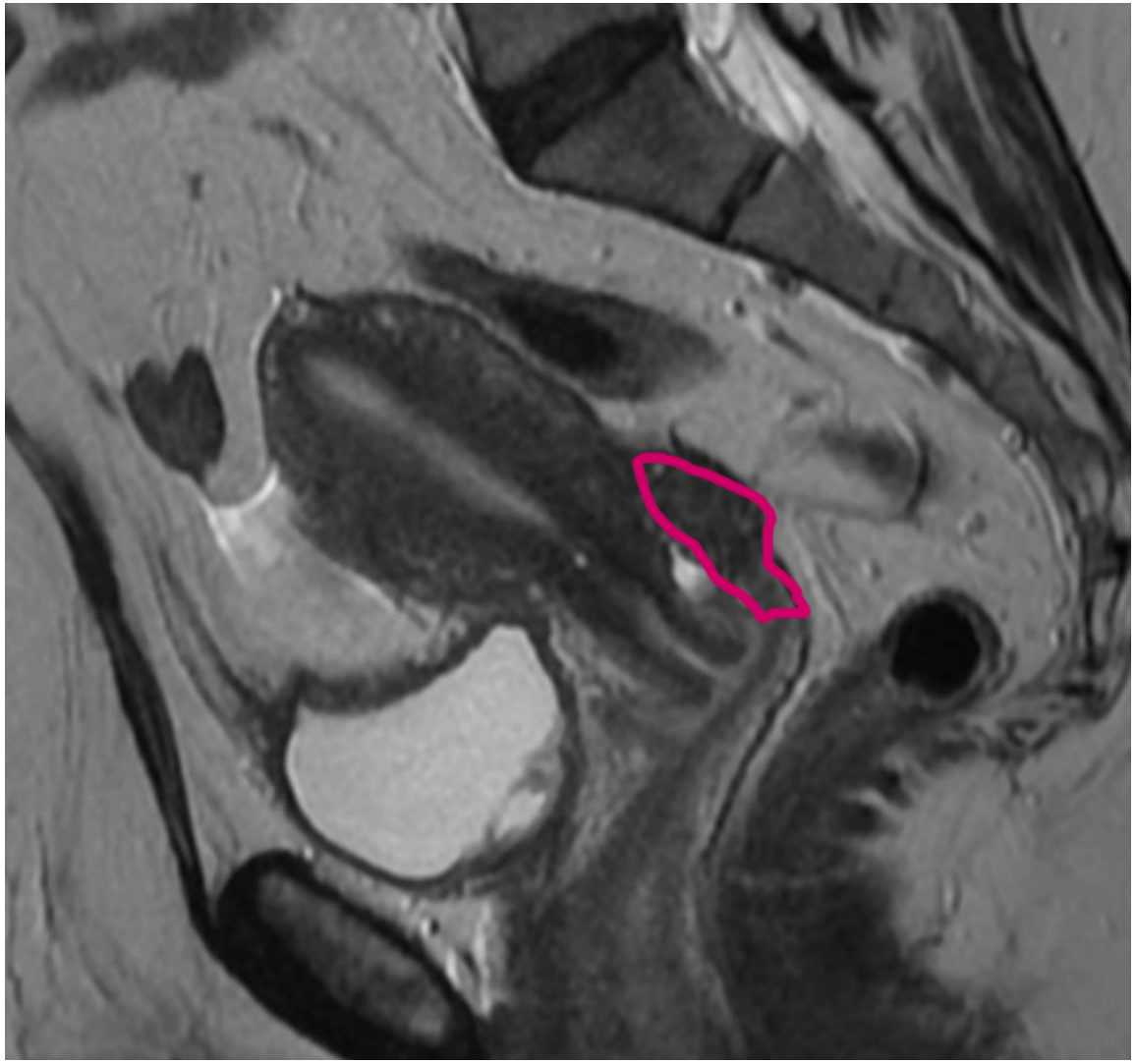
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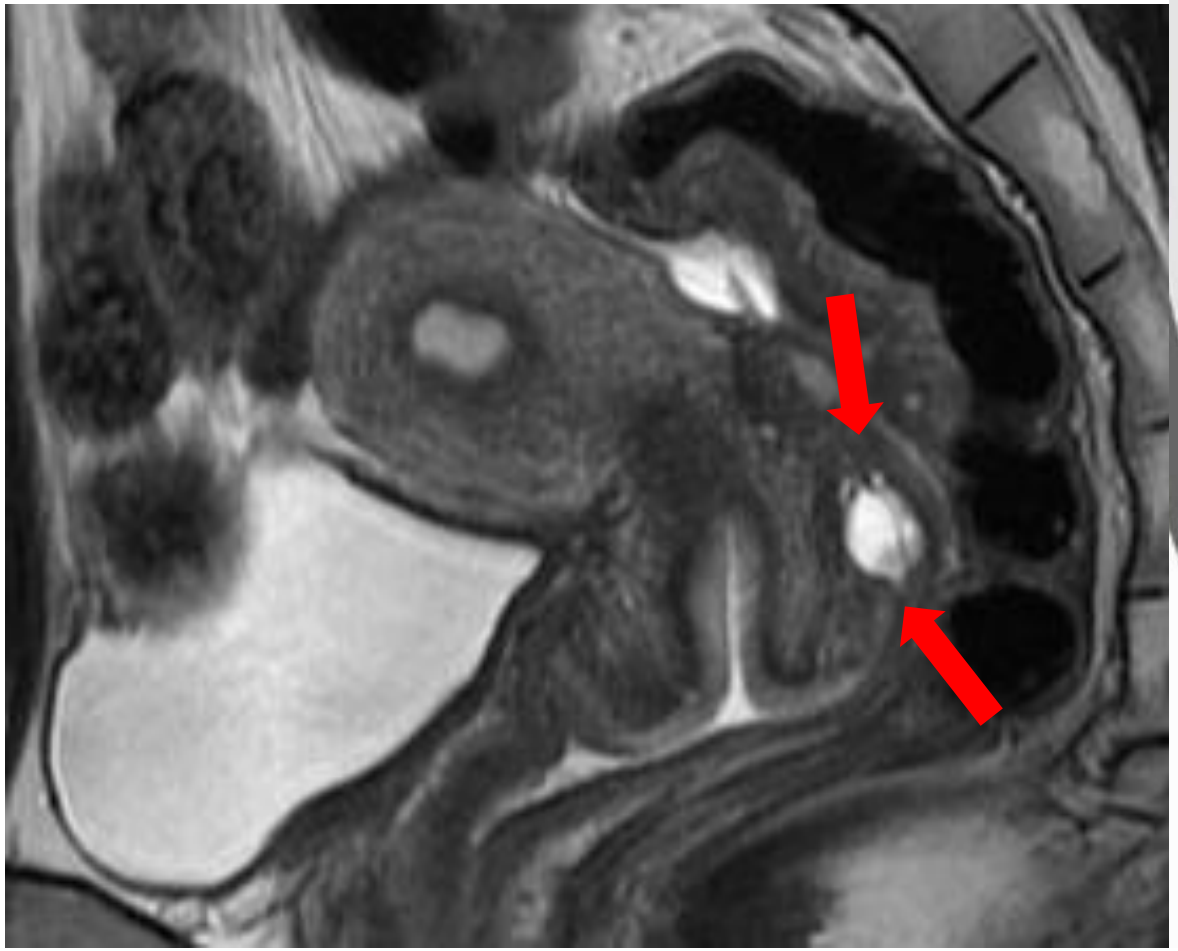


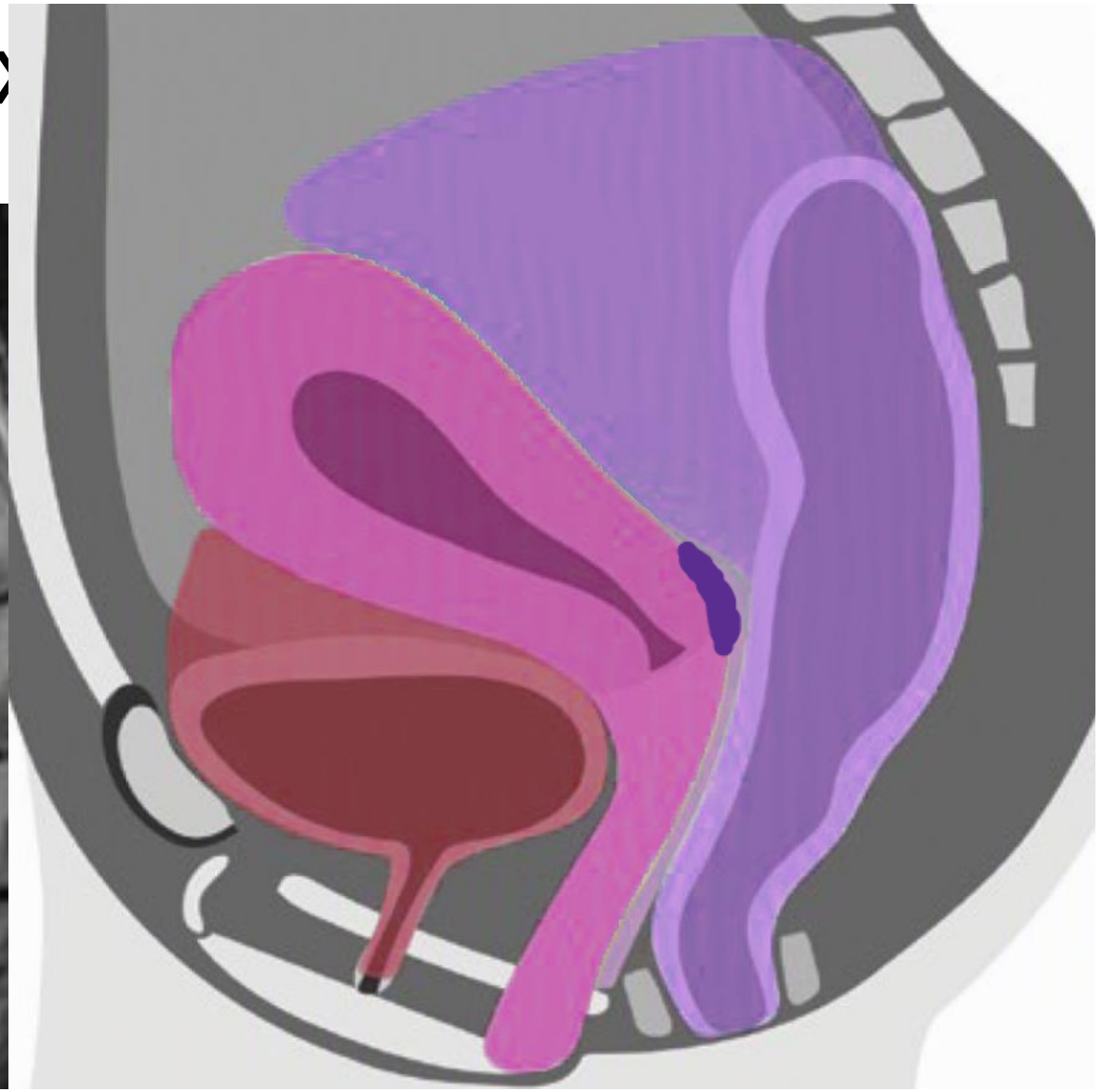
Posterior vaginal fornix / RVS





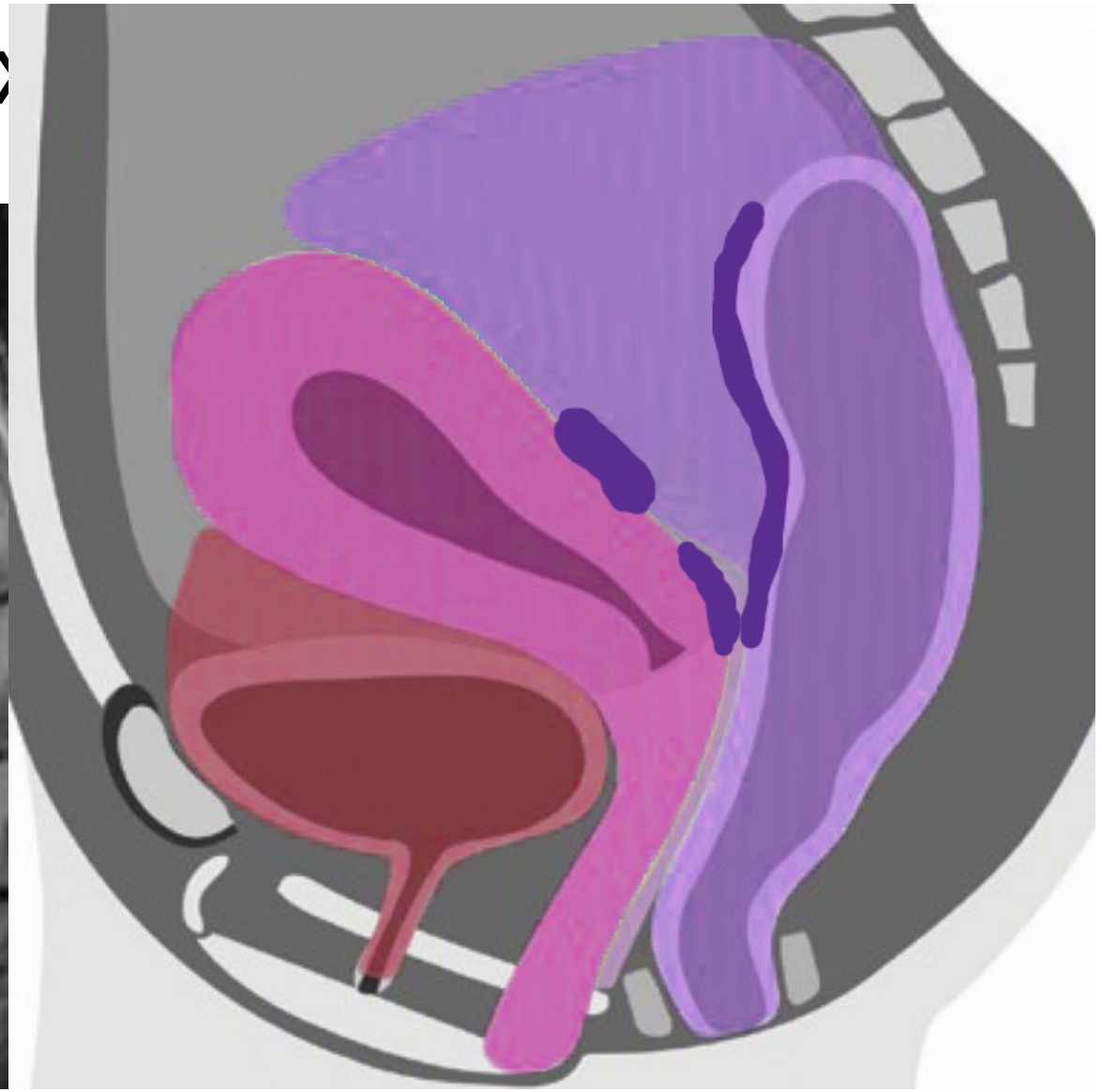
Posterior vaginal fornix





Posterior vaginal fornix





Key areas to assess

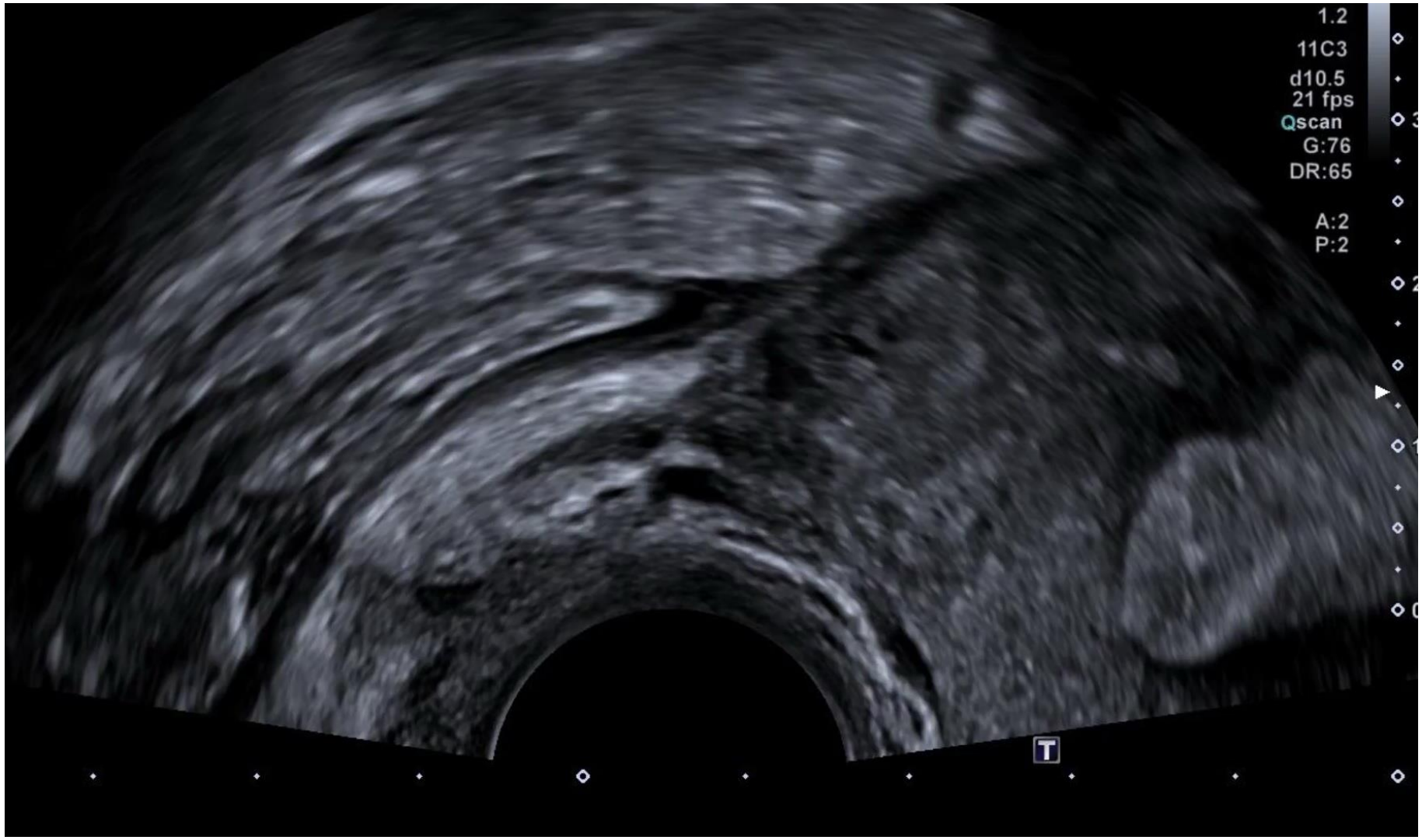
- Torus uterinus / USLs
- Posterior vaginal fornix / RVS
- **Pouch of Douglas / bowel**
- Vesicouterine space / bladder / ureters

Pouch of Douglas

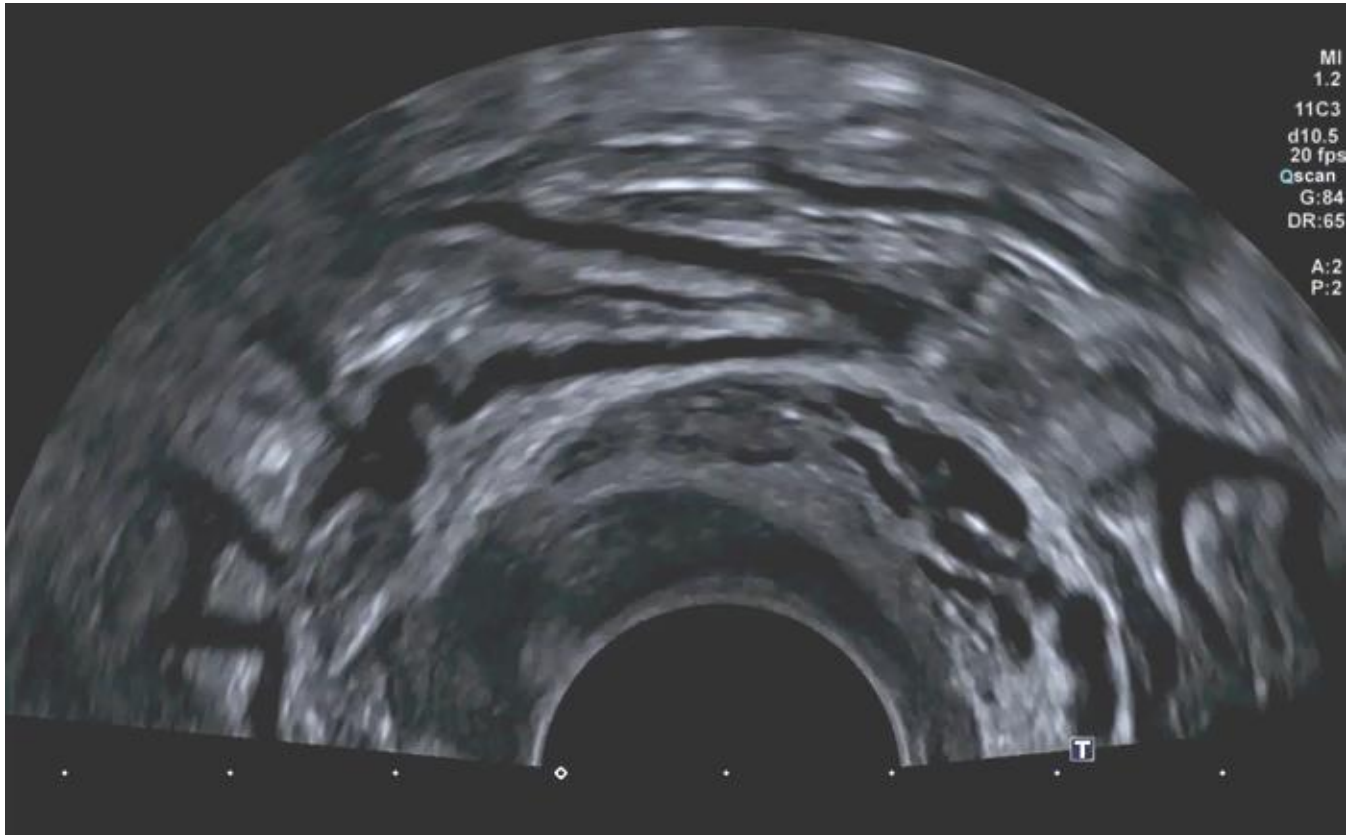


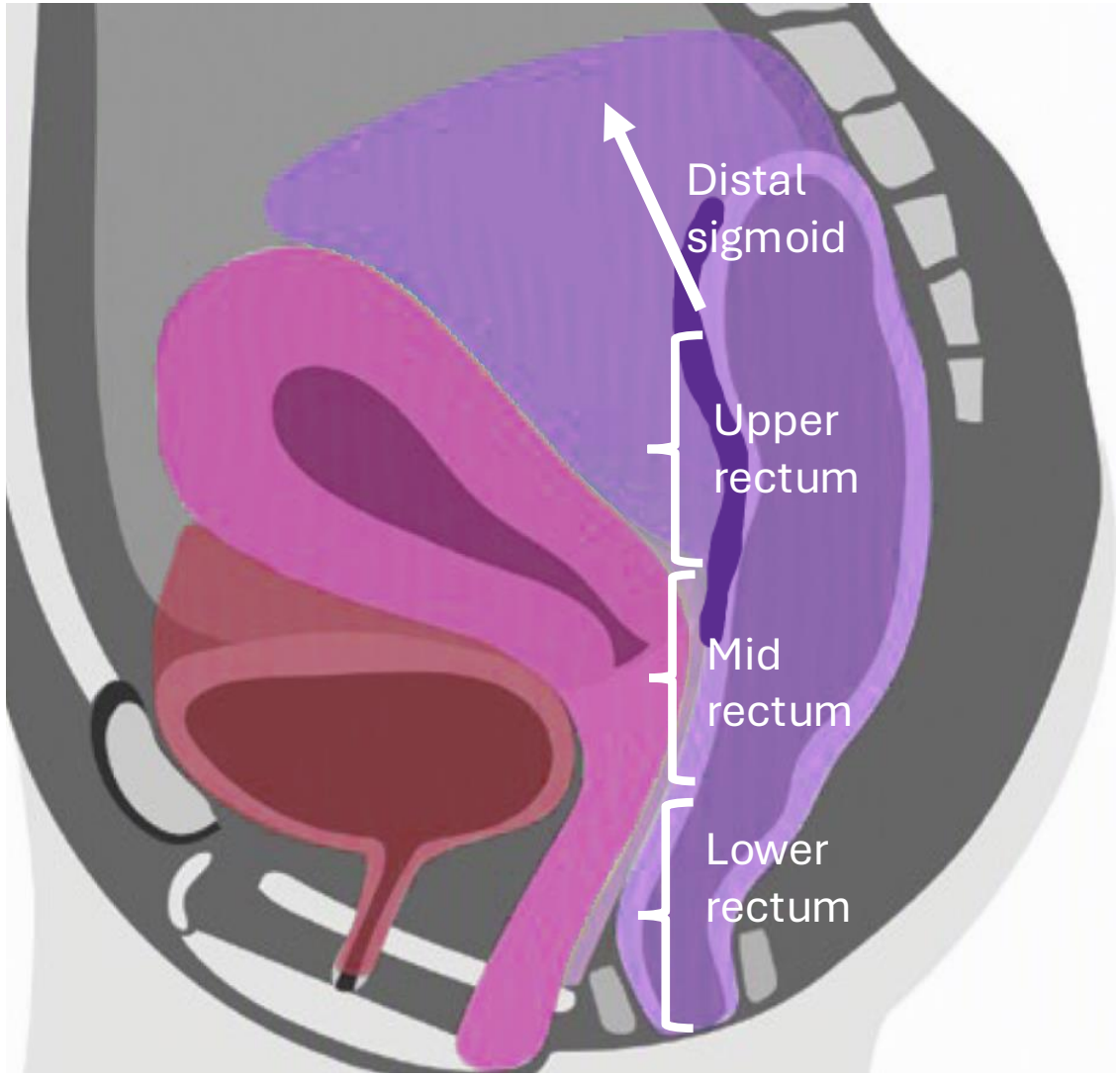


Pouch of Douglas

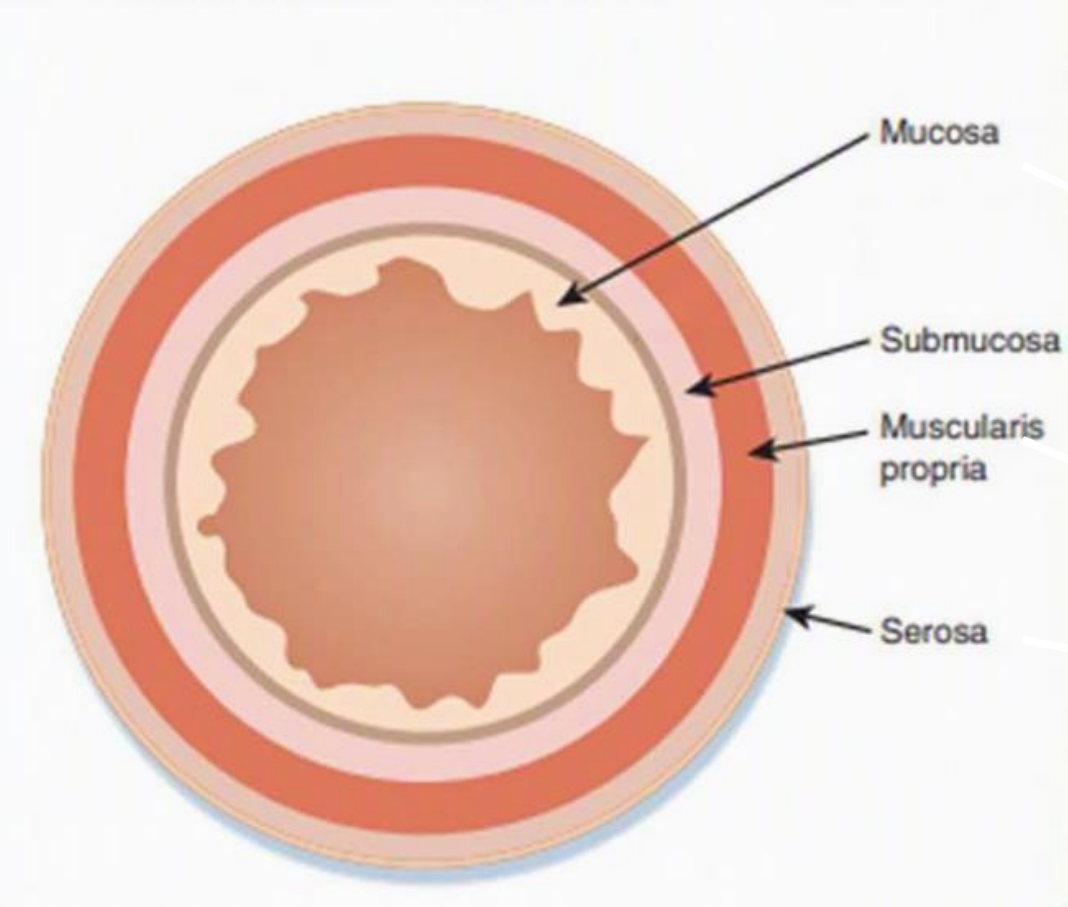


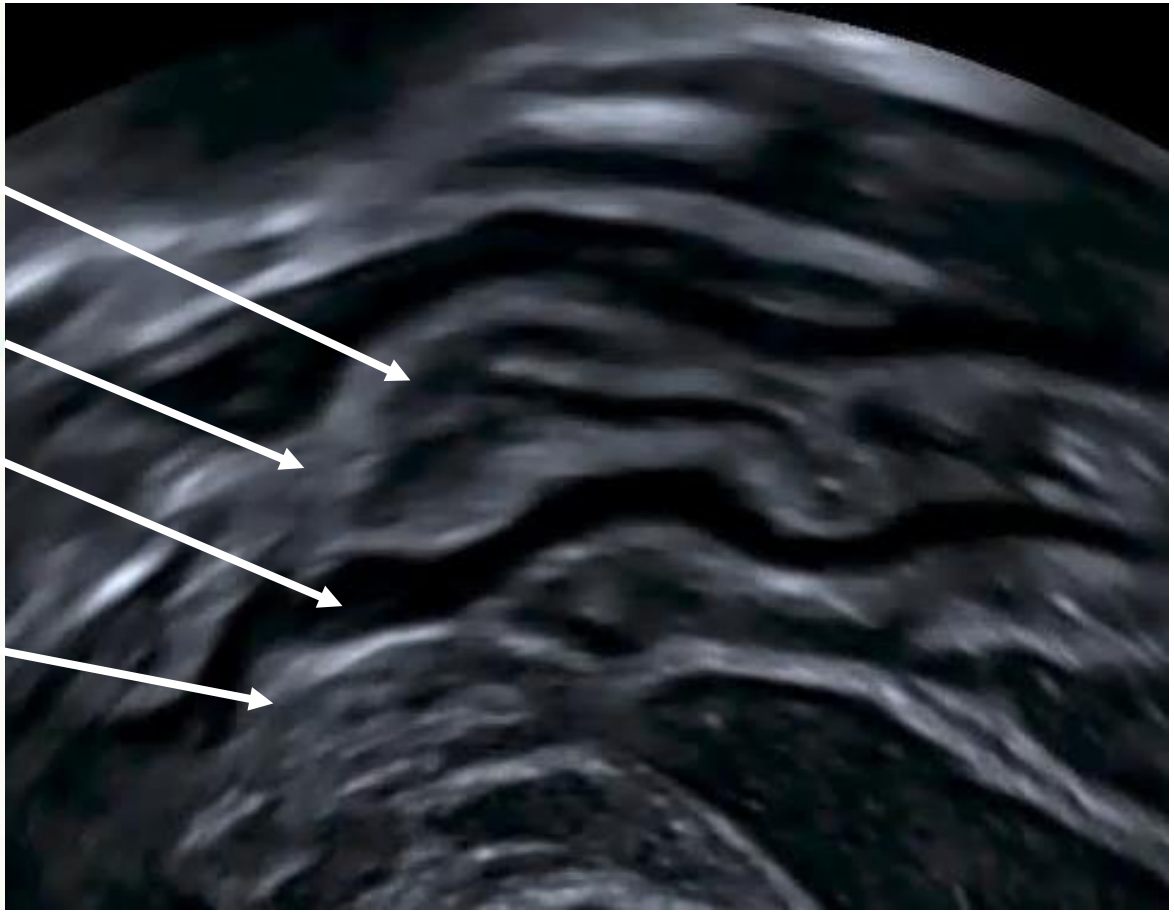
Bowel


MI
1.2
11C3
d10.5
20 fps
Qscan
G:84
DR:65
A:2
P:2


Distal sigmoid
Upper rectum
Mid rectum
Lower rectum

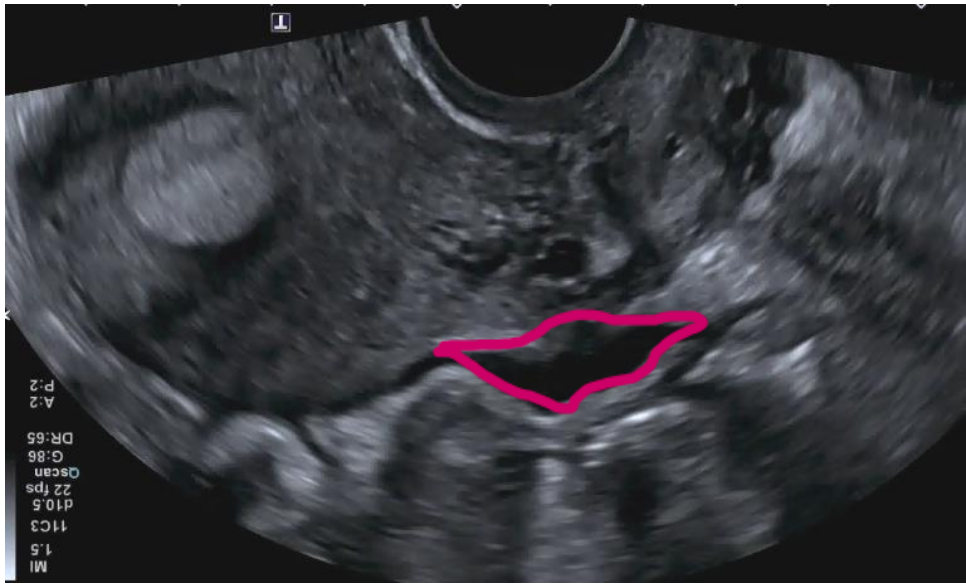
Bowel

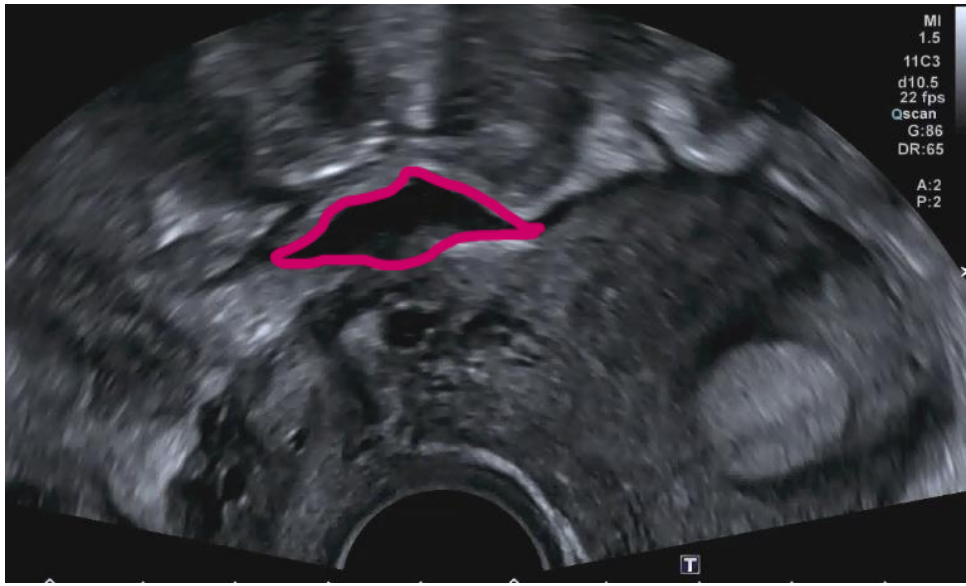




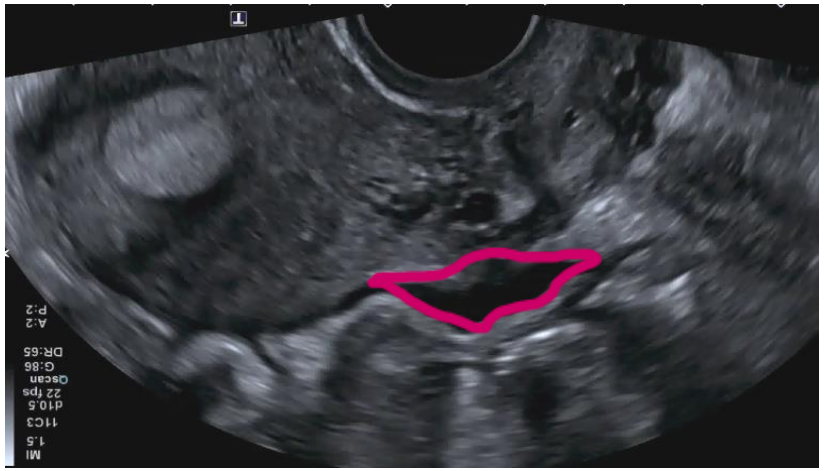
Bowel

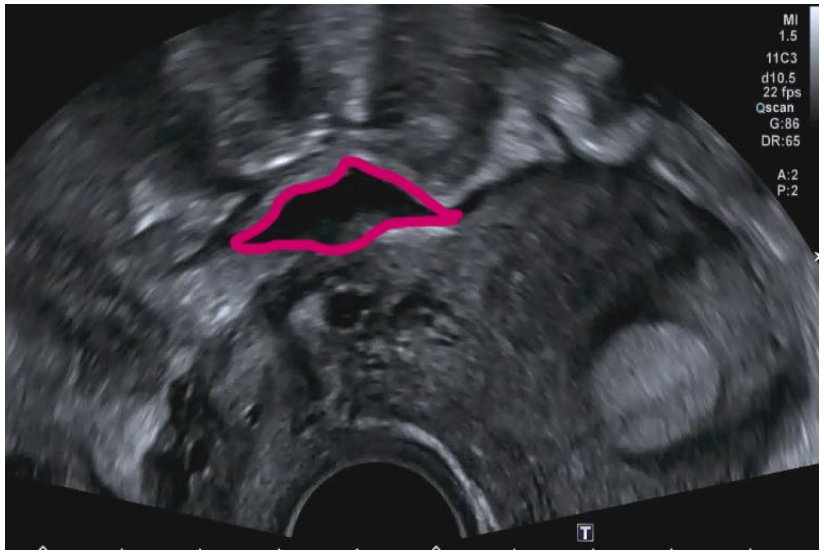

Precision+
A Pure+
5.5
MI
1.5
11C3
d10.5
22 fps
Qscan
G:86
DR:65
A:2
P:2
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Long

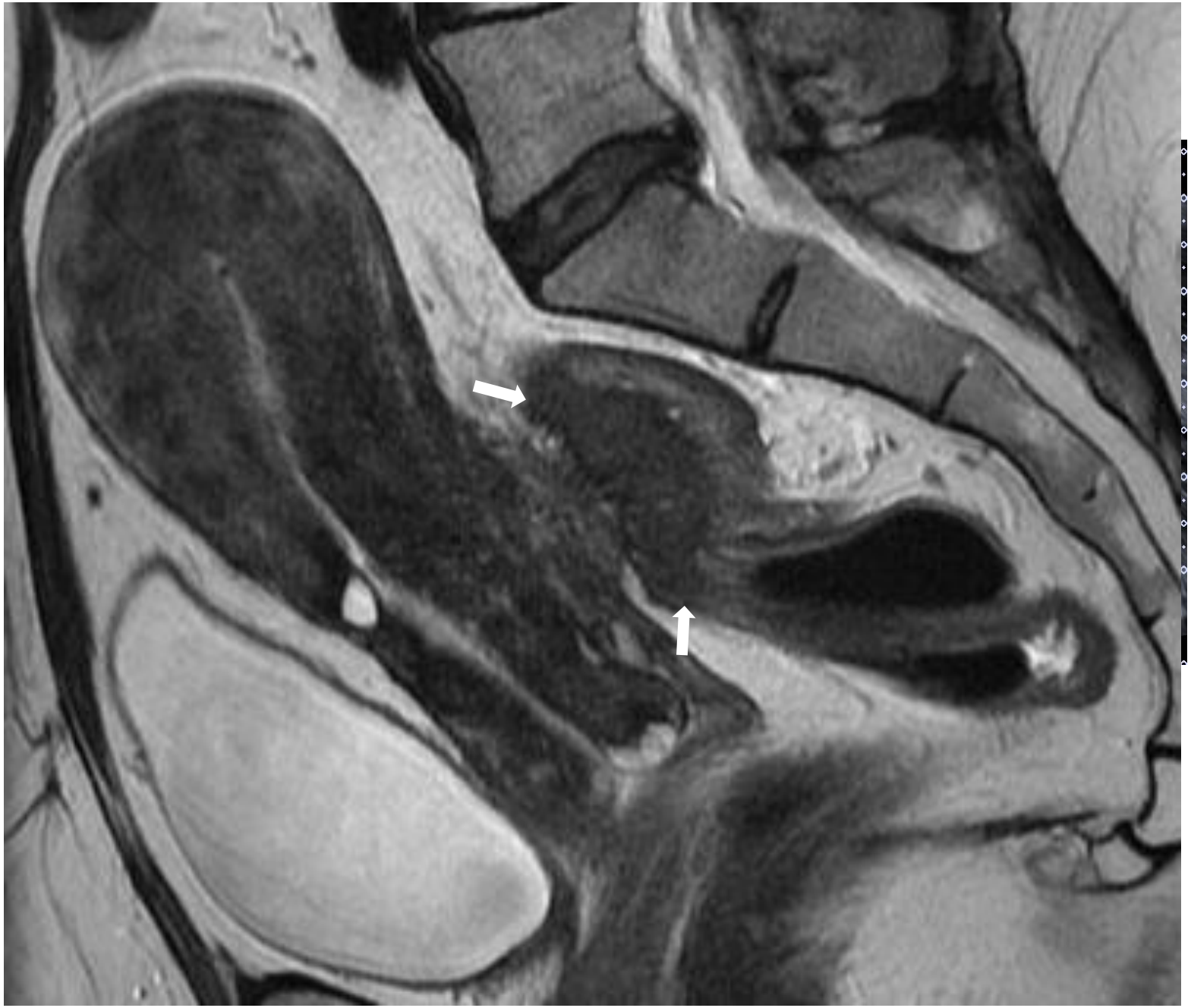



MI
1.5
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Bowel

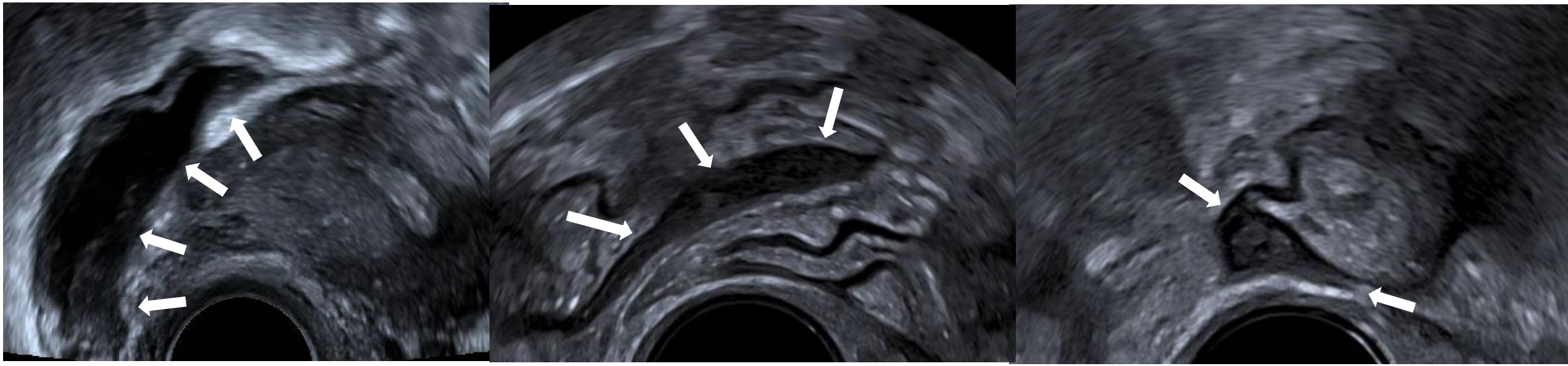






Anterior vaginal fornix

Bowel

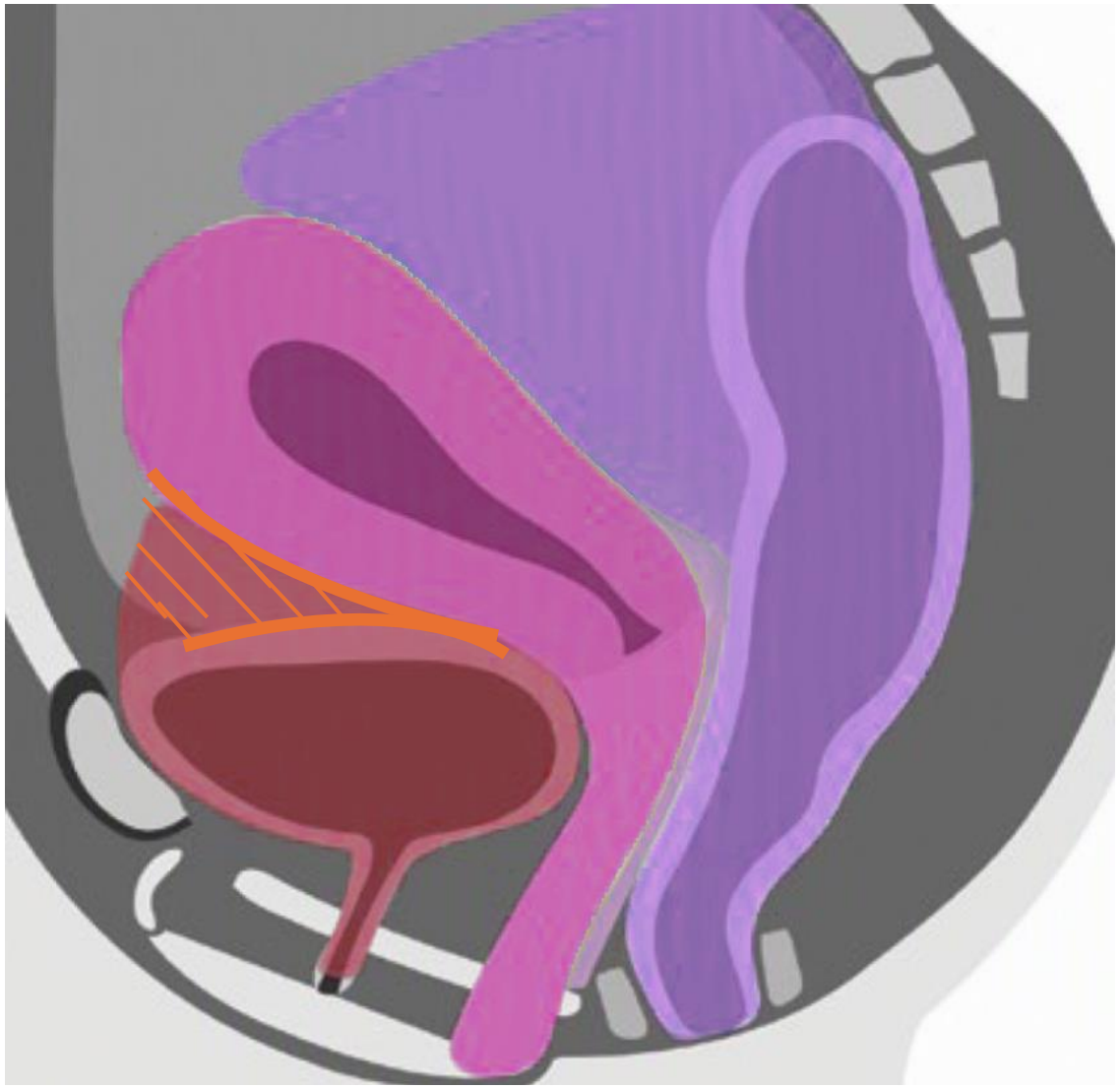


Key areas to assess

- Torus uterinus / USLs
- Posterior vaginal fornix / RVS
- Bowel
- **Vesicouterine space / bladder / ureters**

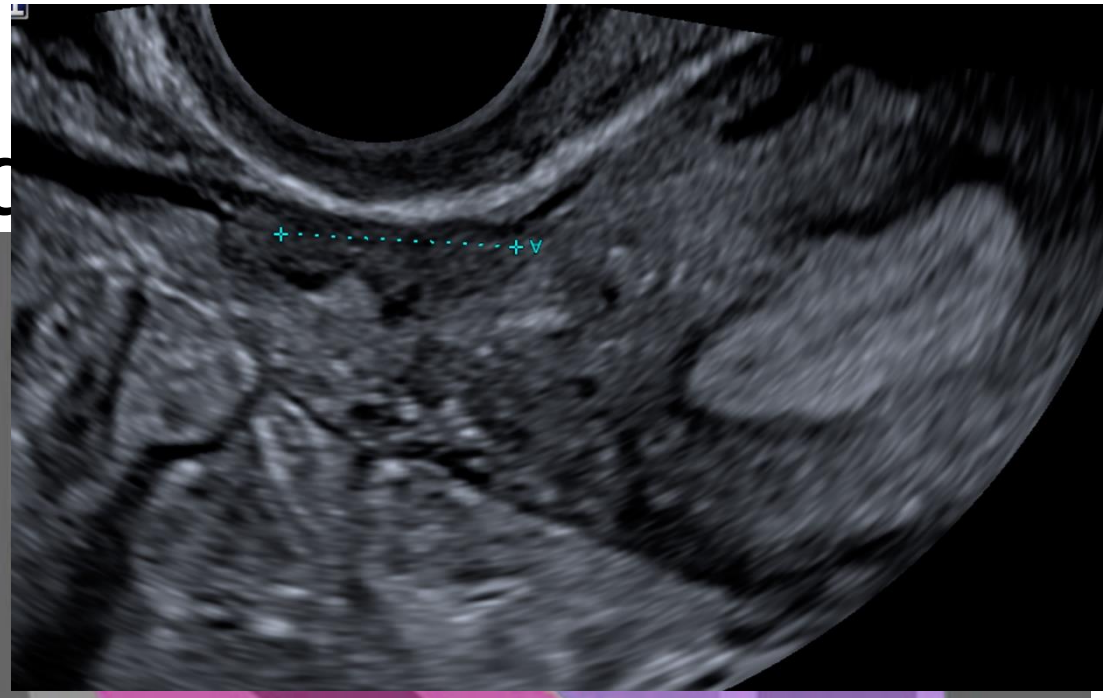
Vesicouterine space / bladder / ureters





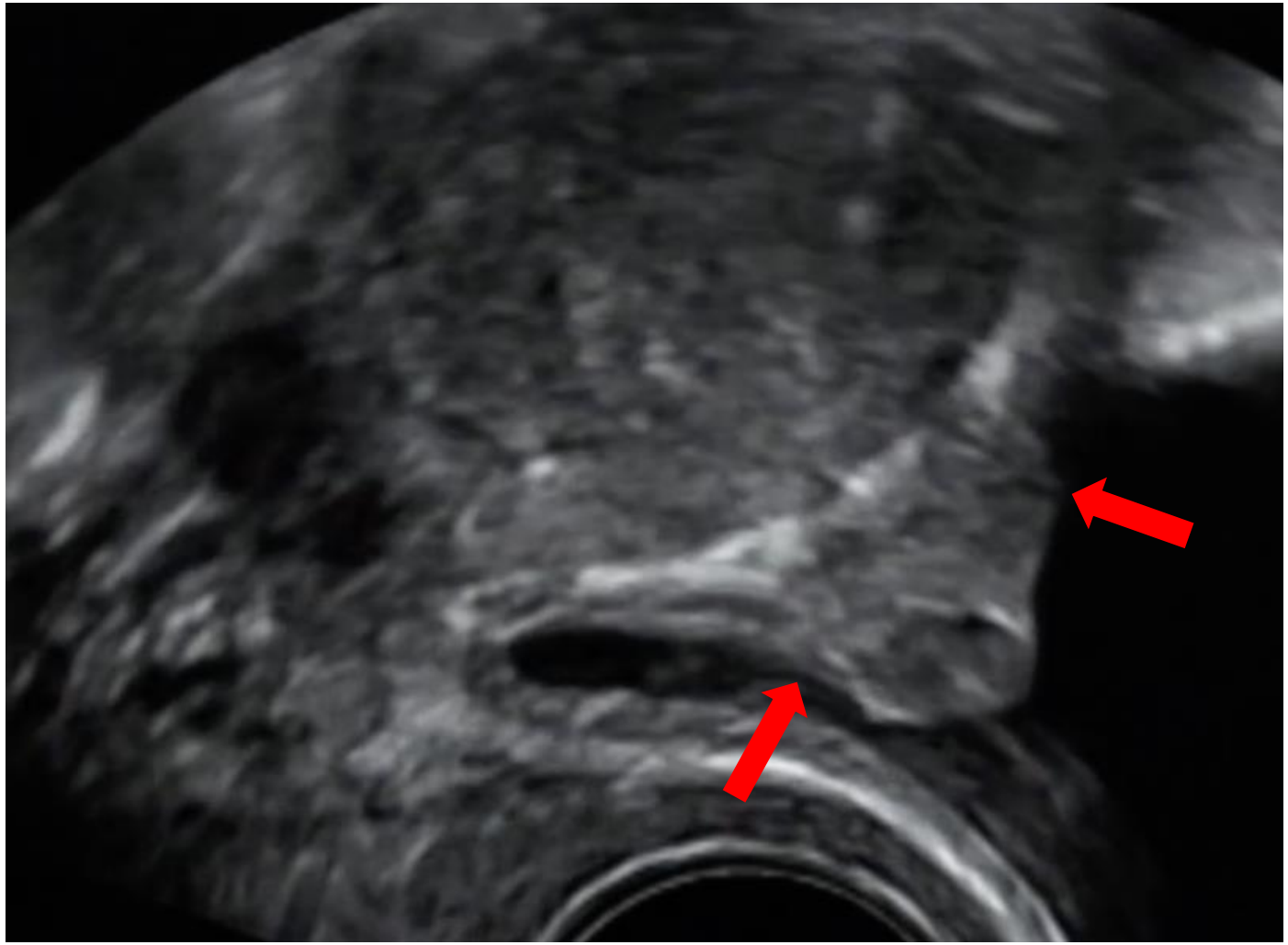
Vesicouterine space / blad

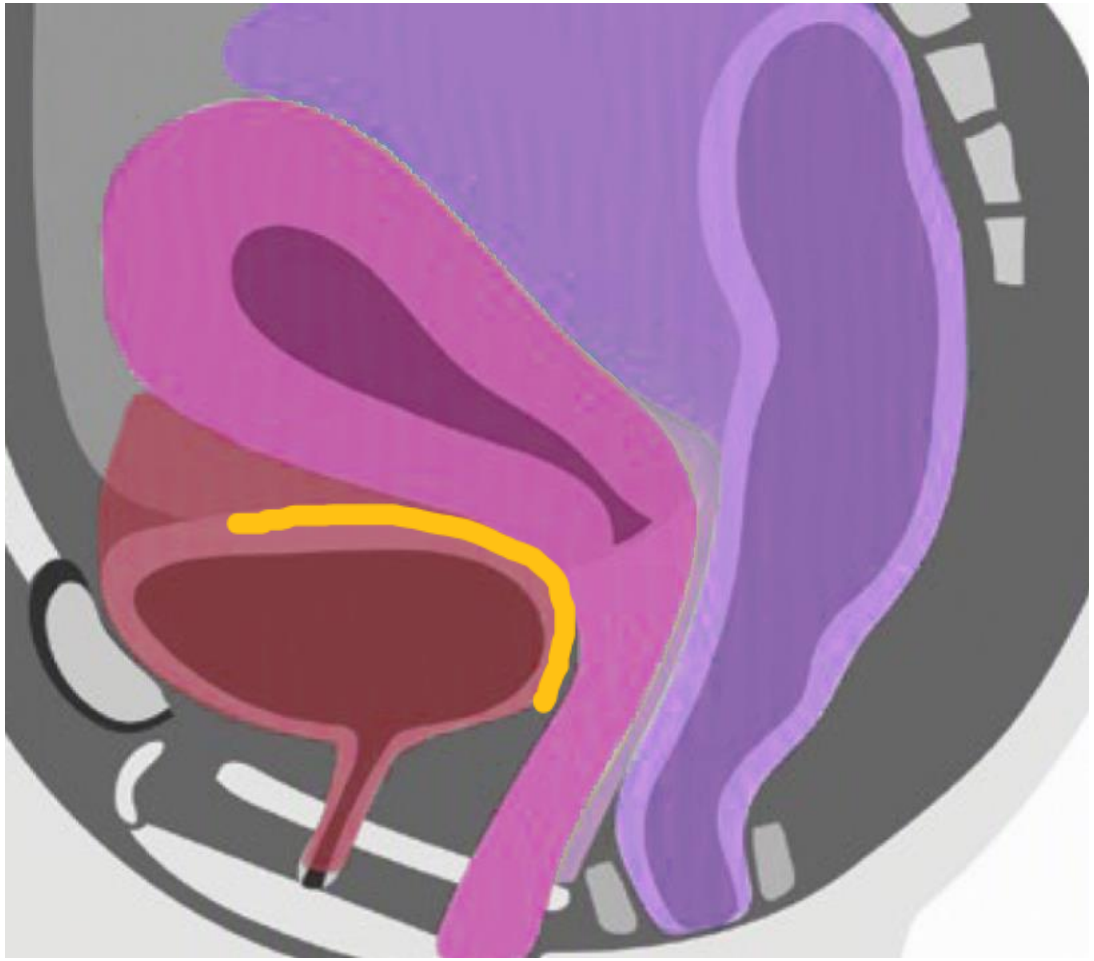




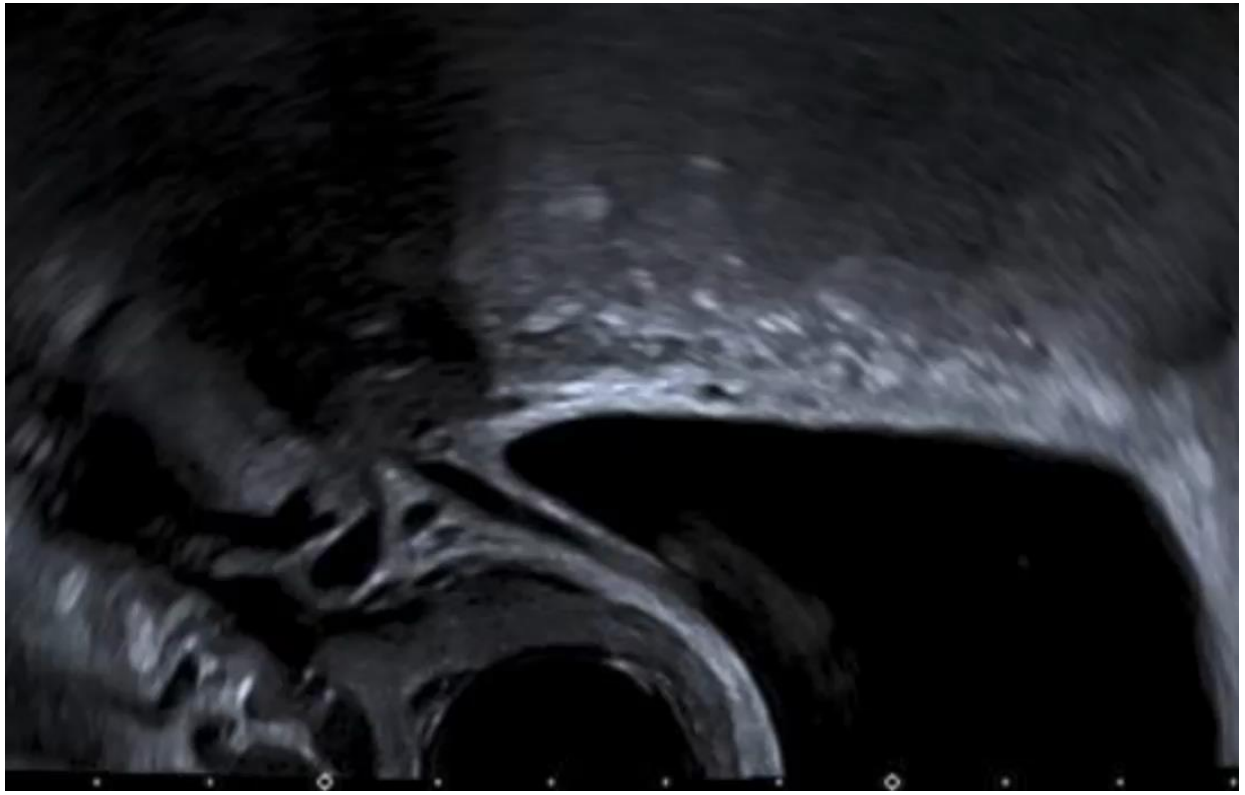


Vesicouterine space / bladder / ureters



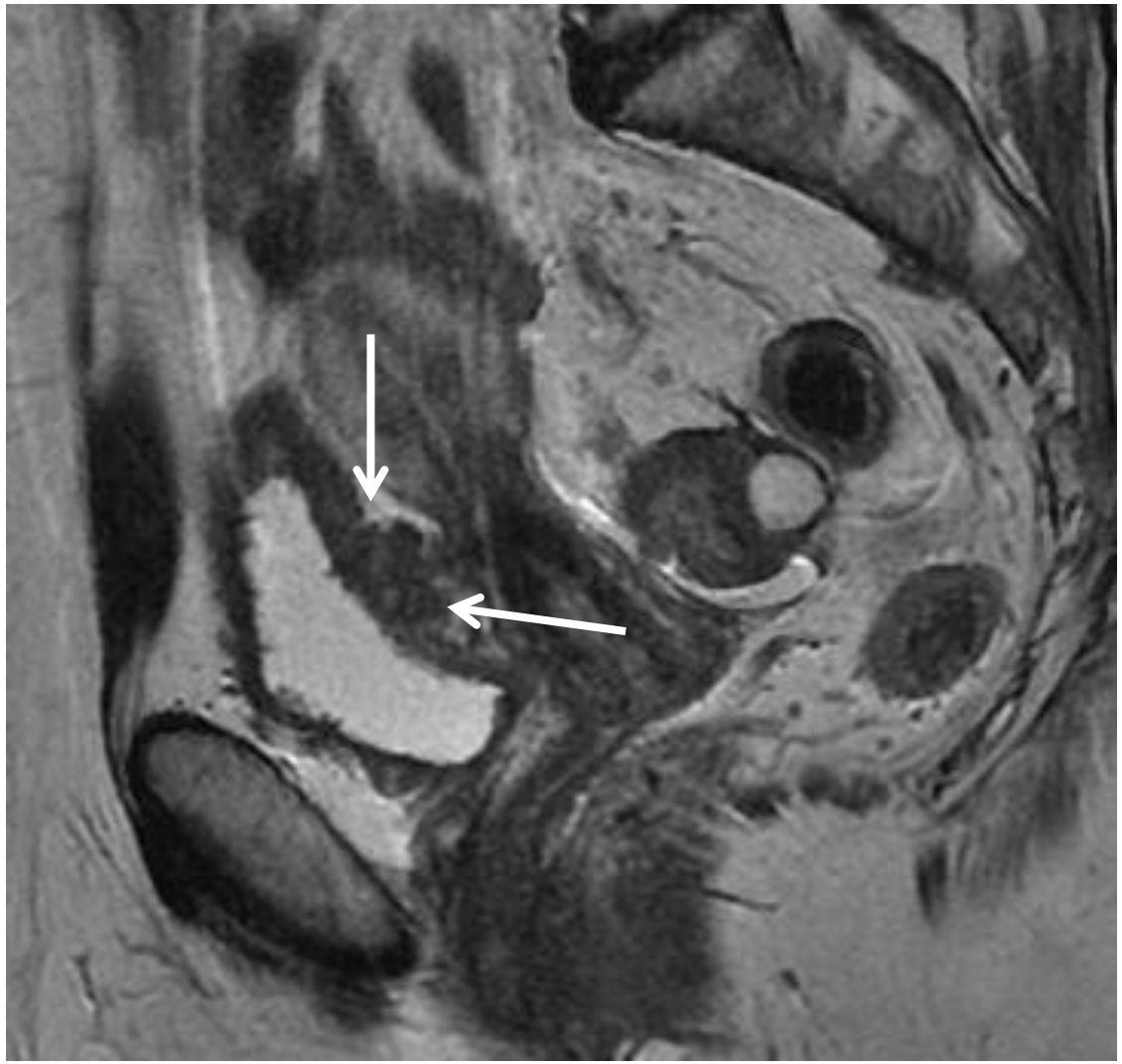


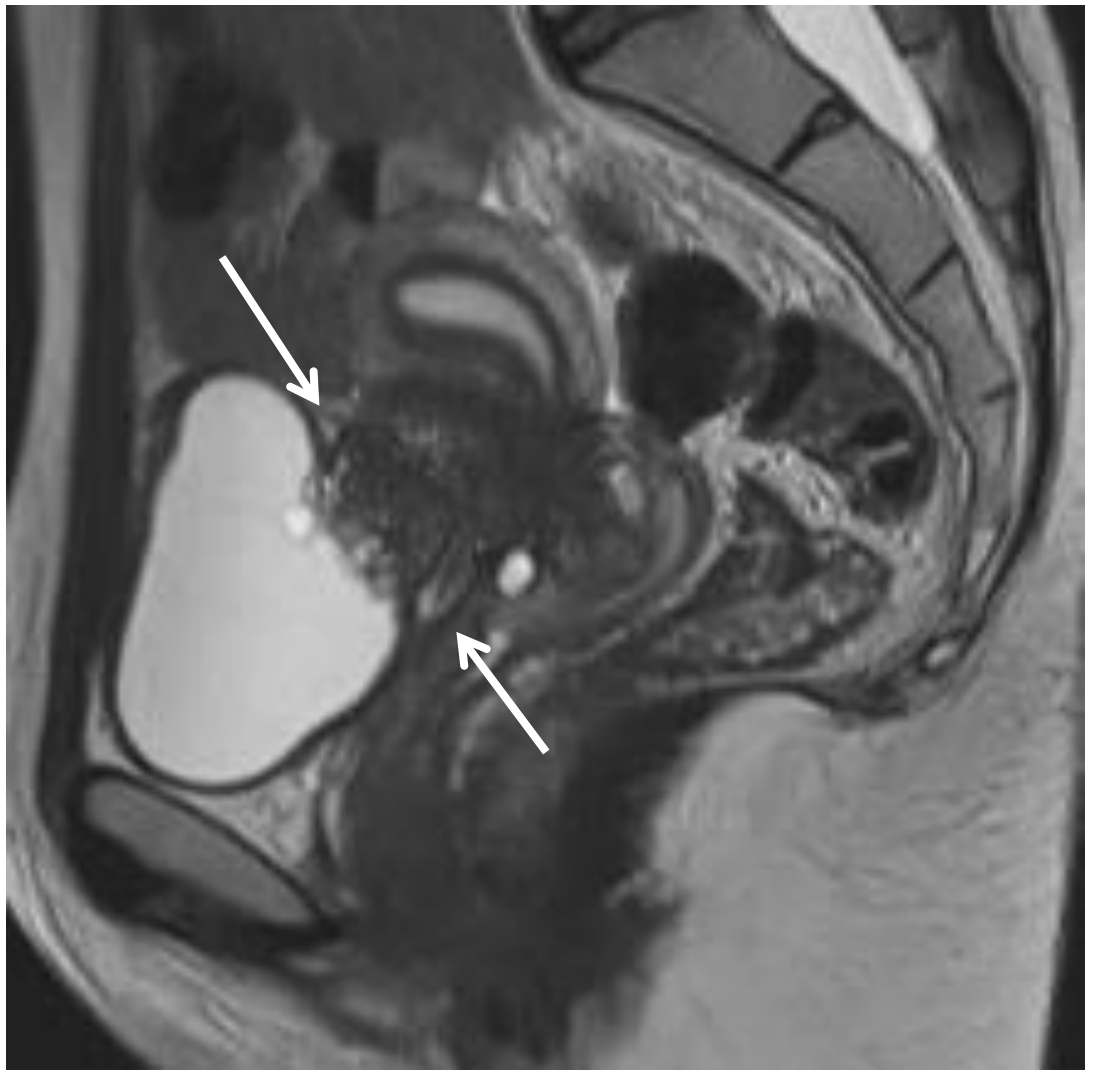
Vesicouterine space / bladder / ureters





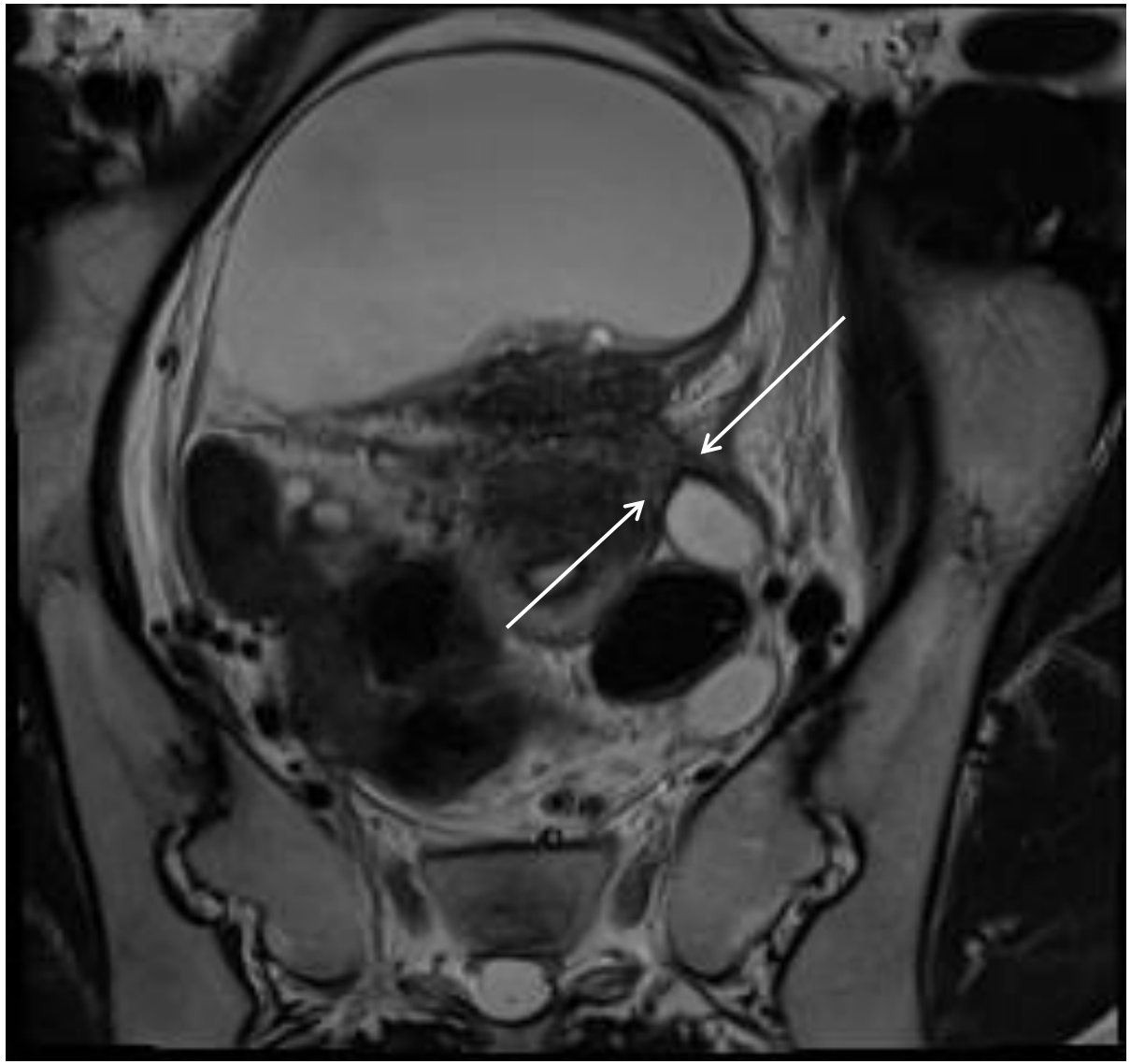
Vesicouterine space / bladder / ureters

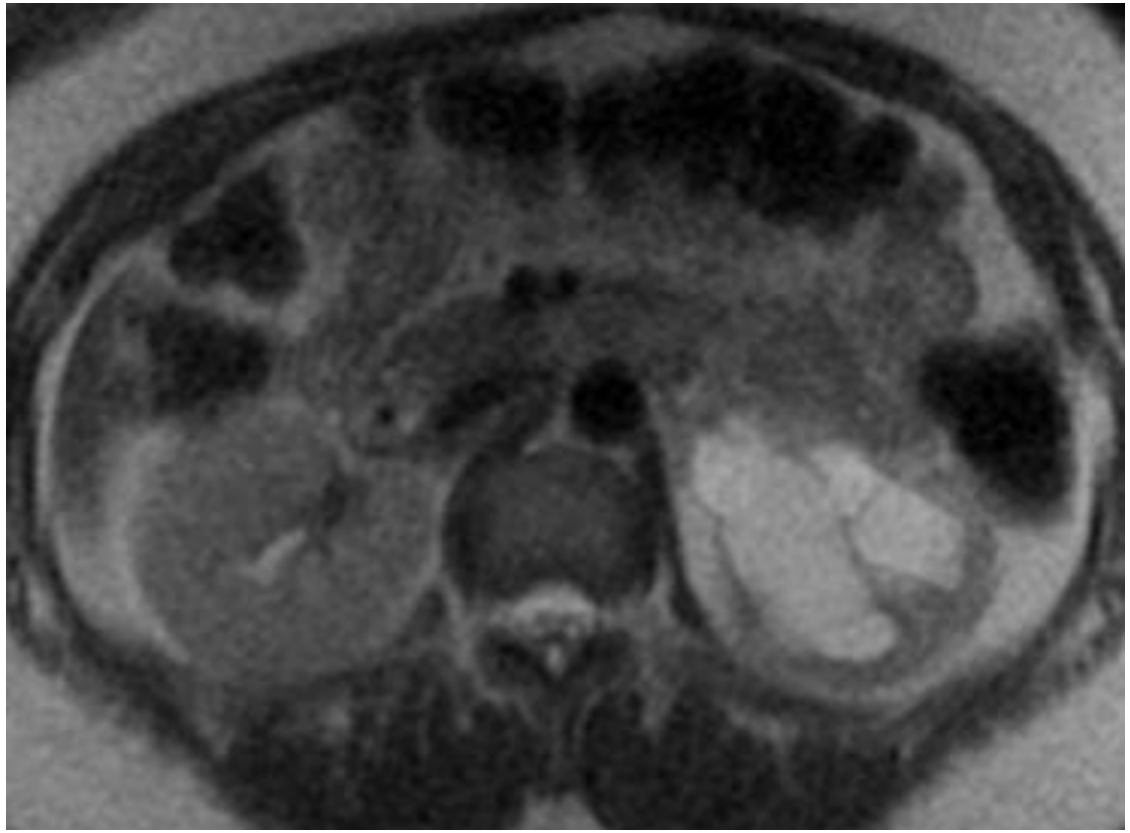




Bourgioti *et al*, Diagn Interv Imaging 2017

Vesicouterine space / bladder / ureters

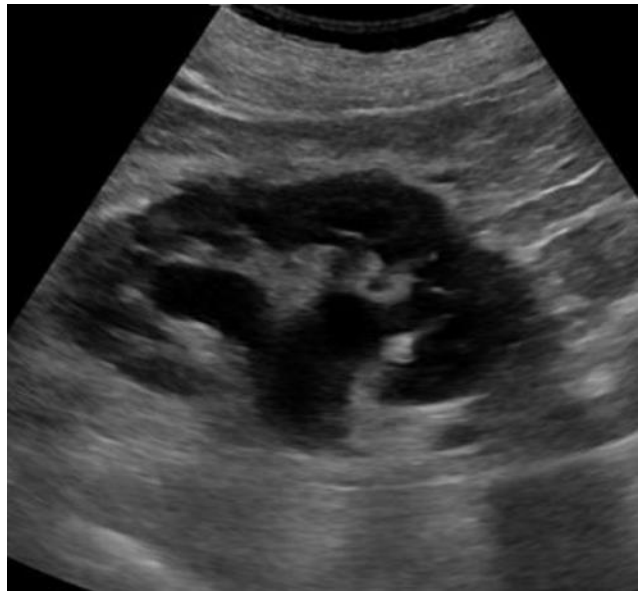




Vesicouterine space / bladder / ureters

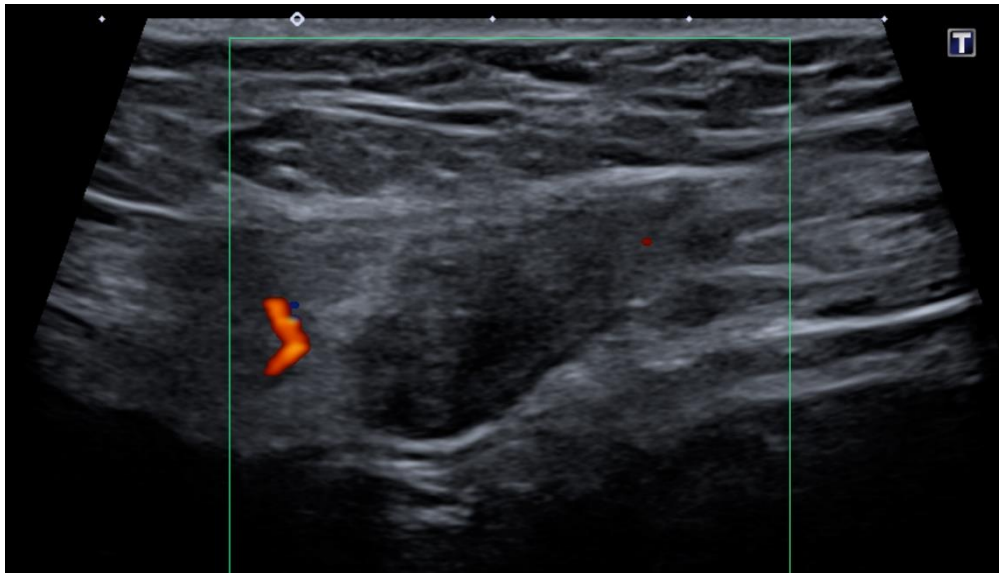




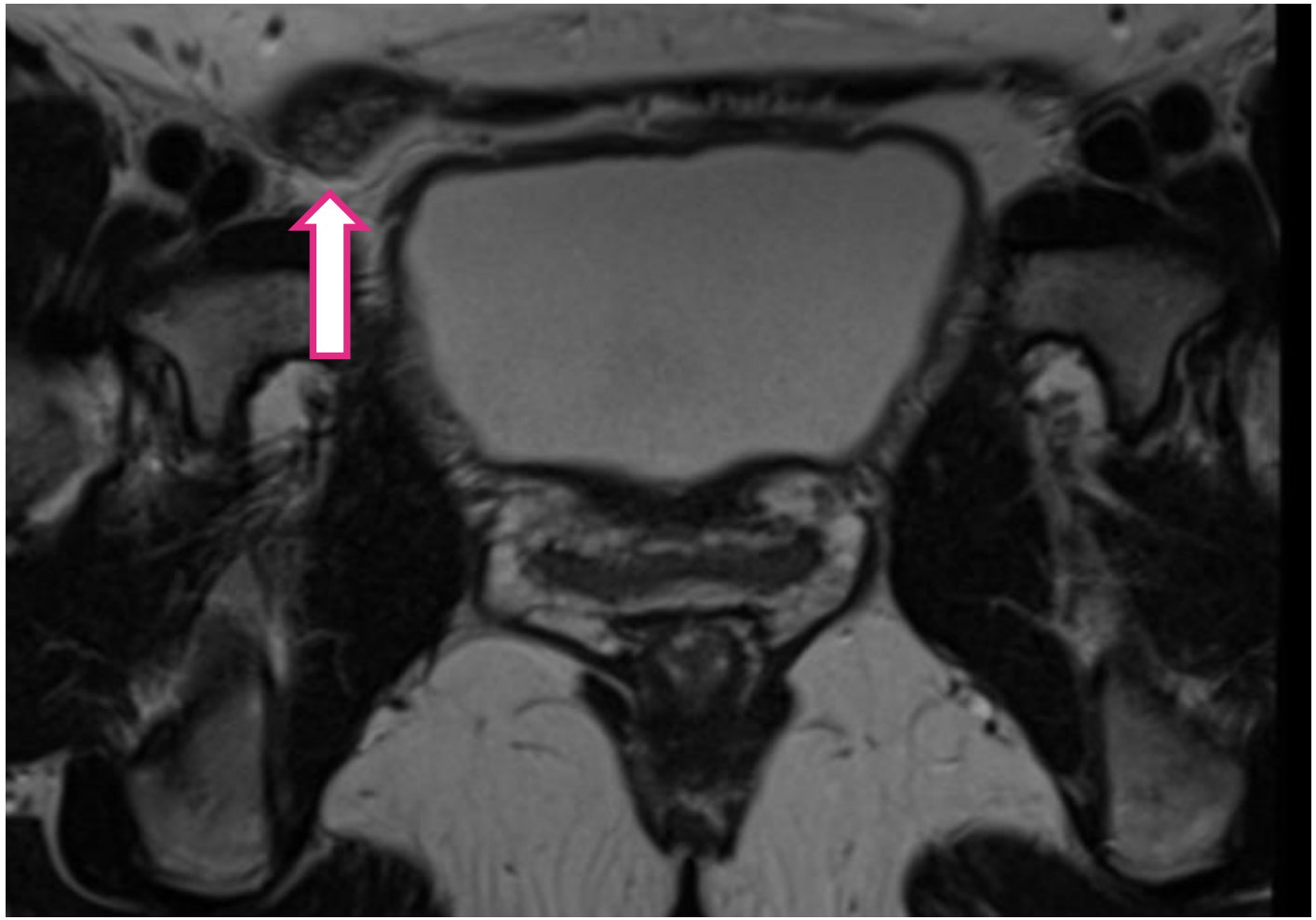


Hydronephrosis

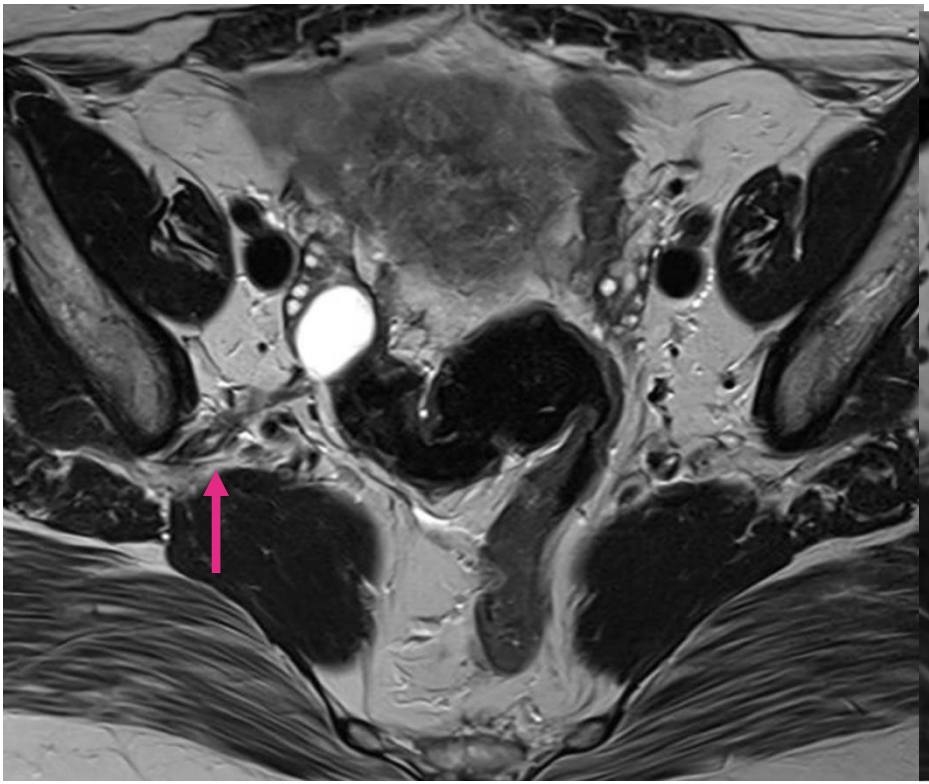
Other sites – round ligt / inguinal canal



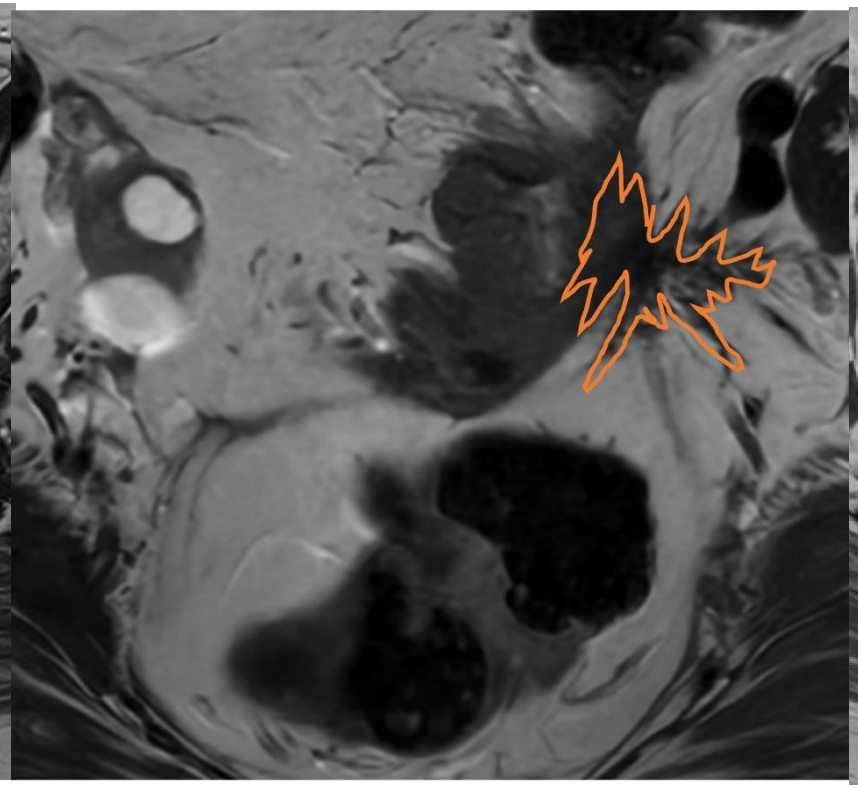
Right groin



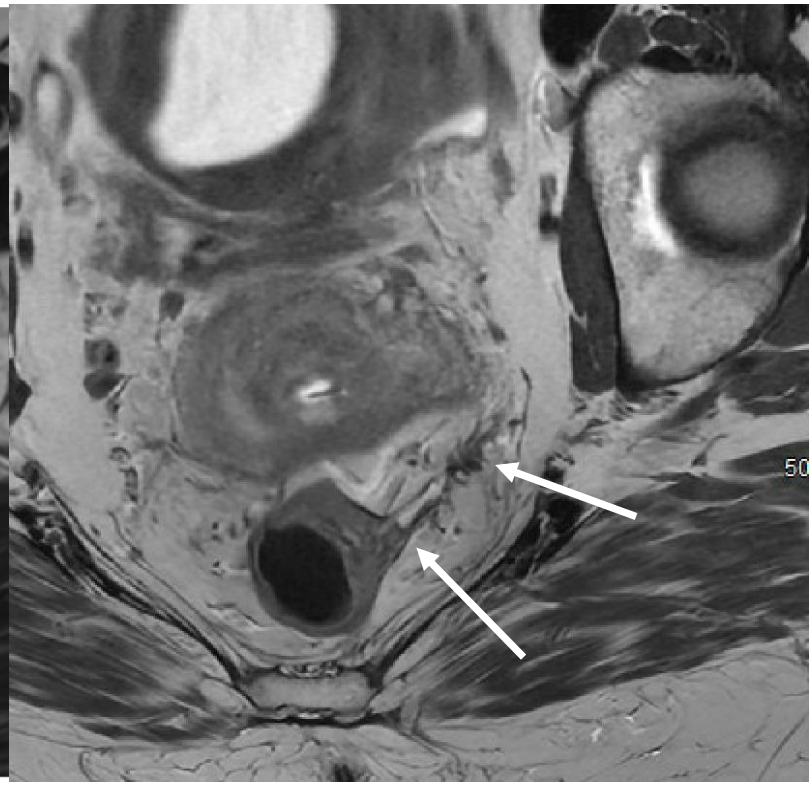
Other sites - nerves



Sciatic nerve



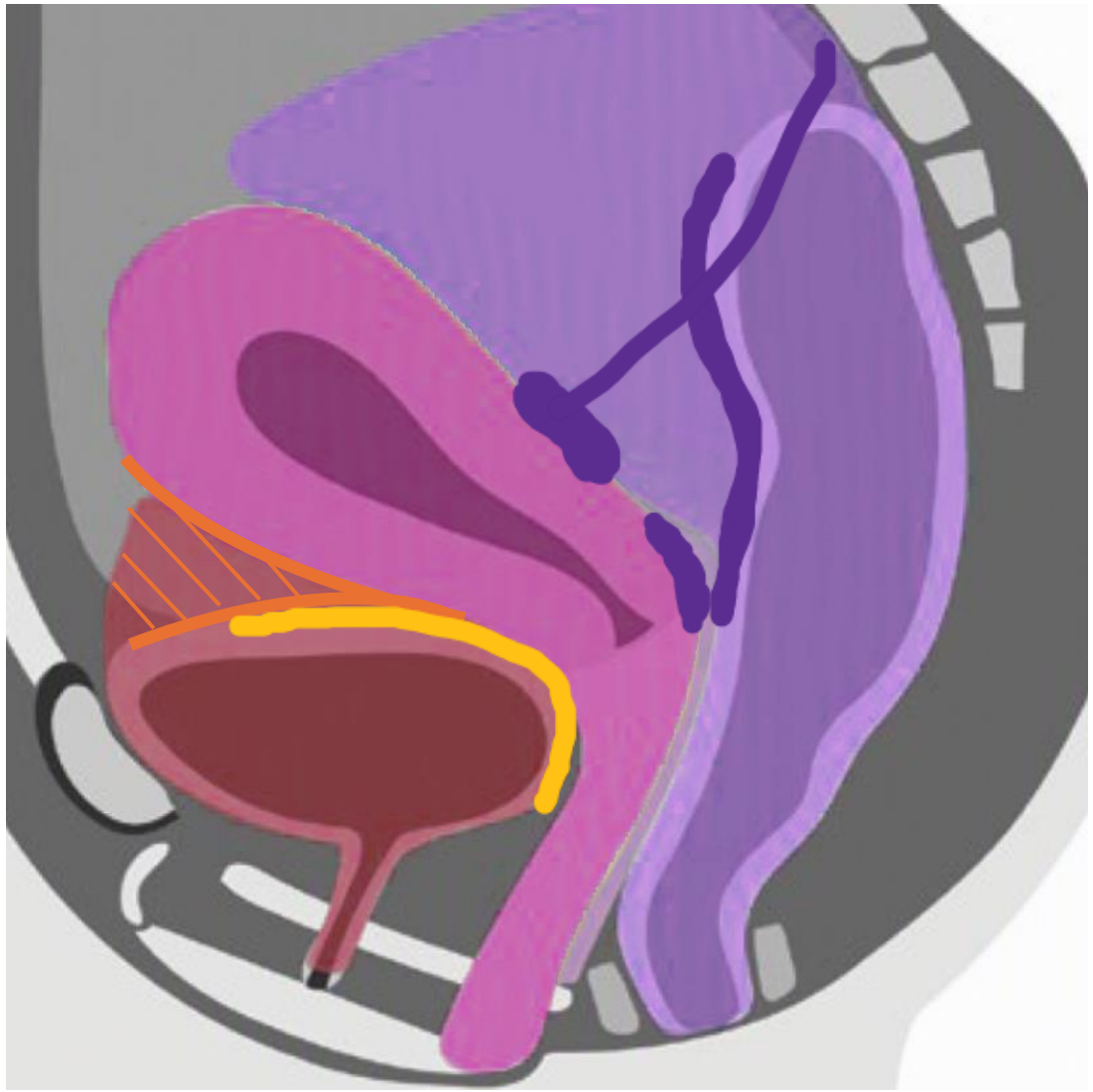
Obturator nerve



Hypogastric nerve

Summary

- Systematic approach
- Compartments
  - Anterior / middle / posterior
- Key areas to assess:
  - USLs / uterine torus
  - Posterior vaginal fornix / rectovaginal space
  - Bowel
  - Bladder / vesicouterine space / ureters



Questions?

