

My Patient Has Pelvic Pain

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Definition

Of apparent pelvic origin

Present most of the time for at least six months

Severe enough to cause functional disability

Requiring surgical or medical treatment

CHRONIC PELVIC PAIN

ACUTE/CHRONIC PAIN

Most women at some point experience pelvic pain

Common presenting complaint

Accounts for up to 40% of all gynecological office visits

Accounts for 20 to 30 % of all adult laparoscopies in the US

15% of women miss an average of 14.8 hrs of work/month

Accounting for \$880 million in healthcare costs and 2 billion in indirect costs

Causes of chronic pelvic pain

Urologic abnormalities

Gastrointestinal tract

Musculoskeletal

Gynecologic diseases

Common pathologies

Under diagnosed

Endometriosis/adenomyosis/pelvic congestion/pelvic floor prolapse



Ultrasound

First line modality

Majority of indications

Inexpensive/Fast

Limitations

Body type

Tech dependent



Pelvic Ultrasound

Clinically useful information without the biologic effects of radiation

Important in Obstetrics and pediatrics

Real-time evaluation

Rapidly moving parts heart

Multiplanar Capabilities



MR

Excellent spatial resolution
Definitive diagnostic tool for many different pathologies
May require pre certification or initial ultrasound exam



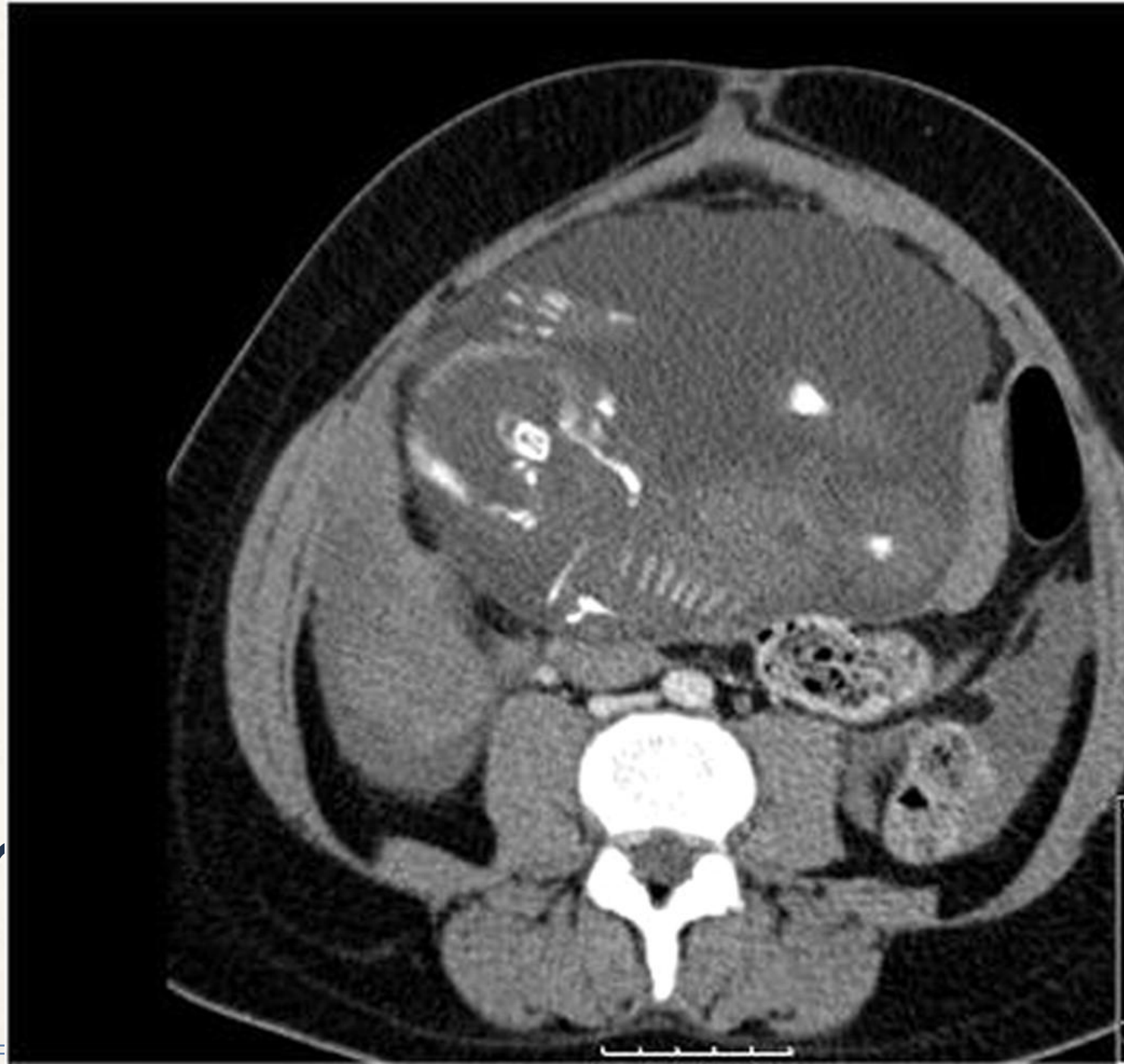
Other r

CT less common for Gyn
eneteric causes mimicking pelvic

Urologic abnormalities

Xray

Nuclear medicine



Acute Pelvic Pain

Ruptured Ovarian Cyst

Ovarian Torsion

Ectopic pregnancy

PID/TOA

Non-gynecological causes

Enteric causes

Musculoskeletal

- Evidence based guidelines
 - Most appropriate decision: enhancing quality
 - Developed by expert panels in 1994
 - ACR Select.
 - licensed software product used to be incorporated into EHR and computerized order entry.

ACR Appropriateness criteria

<http://www.acr.org/Quality-Safety/Appropriateness-Criteria> <http://www.acr.org/Quality-Safety/Appropriateness-Criteria>

18 yr old female vaginal bleeding and pain

Positive BHCG

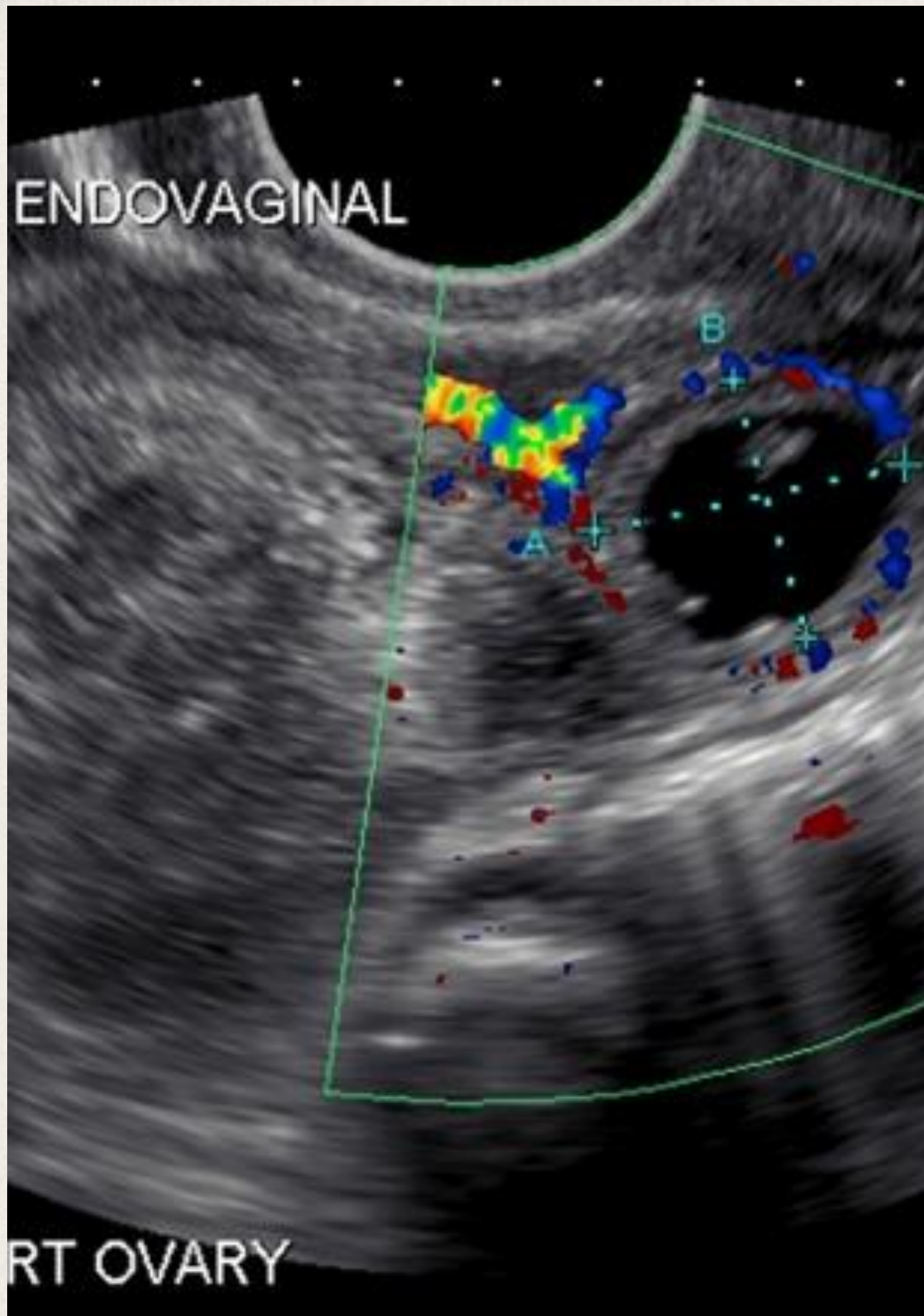
Clinical Condition:

Abnormal Vaginal Bleeding

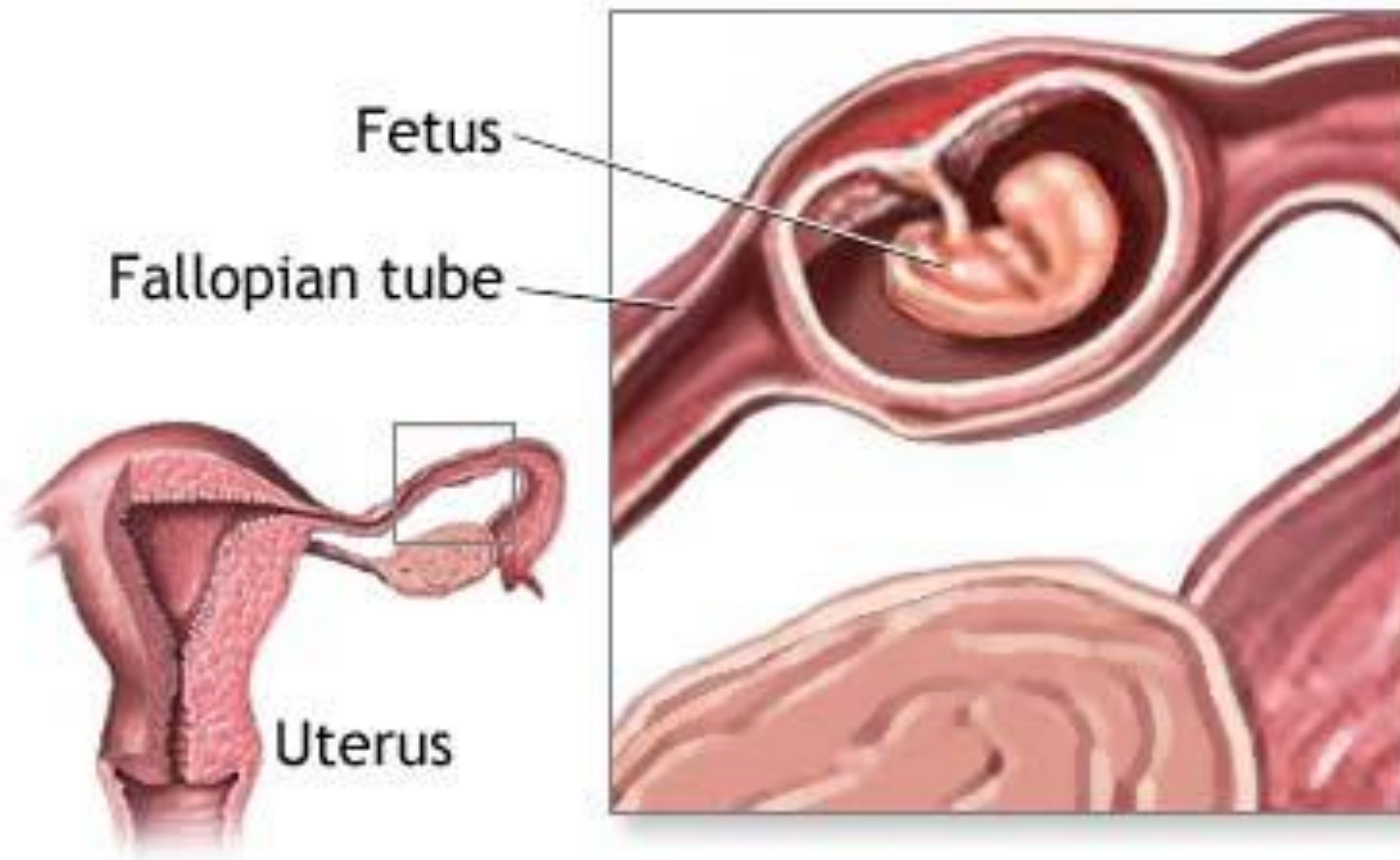
Variant 4:

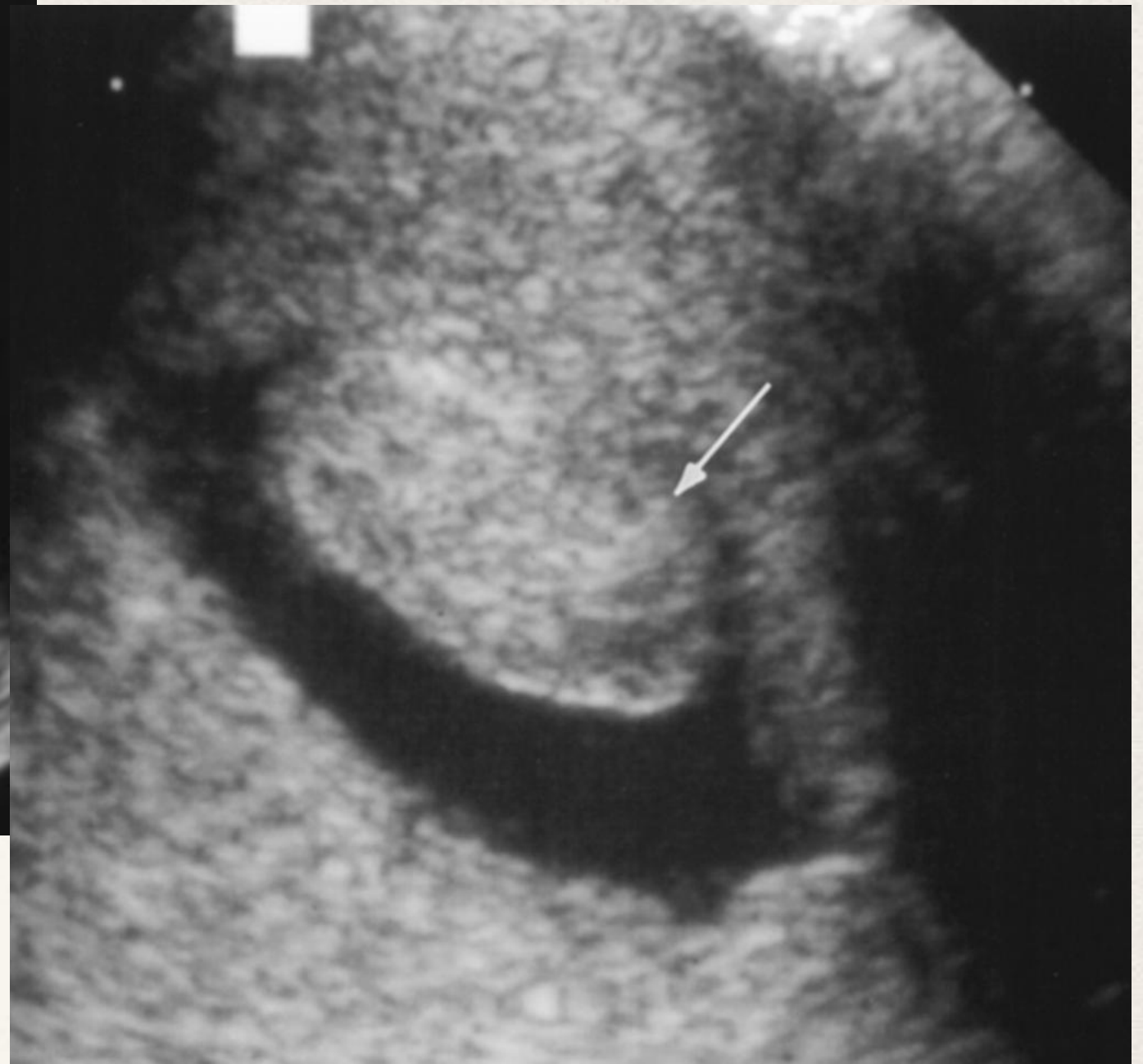
Premenopausal vaginal bleeding. First study.

Radiologic Procedure	Rating	Comments	<u>RRL*</u>
US pelvis transvaginal	9		O
US pelvis transabdominal	8		O
US hysterosonogram	4		O
US pelvis with Doppler	2		O
CT pelvis with contrast	2		☼☼☼
MRI pelvis with contrast	2		O
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level



Ectopic pregnancy





36 yr Dysfunctional Bleeding

Variant 5:**Premenopausal vaginal bleeding, endometrium <16 mm by transvaginal ultrasound.**

Radiologic Procedure	Rating	Comments	<u>RRL*</u>
US hysterosonogram	6		O
US pelvis with Doppler	5		O
US pelvis transabdominal	4		O
CT pelvis with contrast	2		☼ ☼ ☼
MRI pelvis with contrast	2		O
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

Variant 6:**Premenopausal vaginal bleeding, endometrium ≥16 mm by transvaginal ultrasound.**

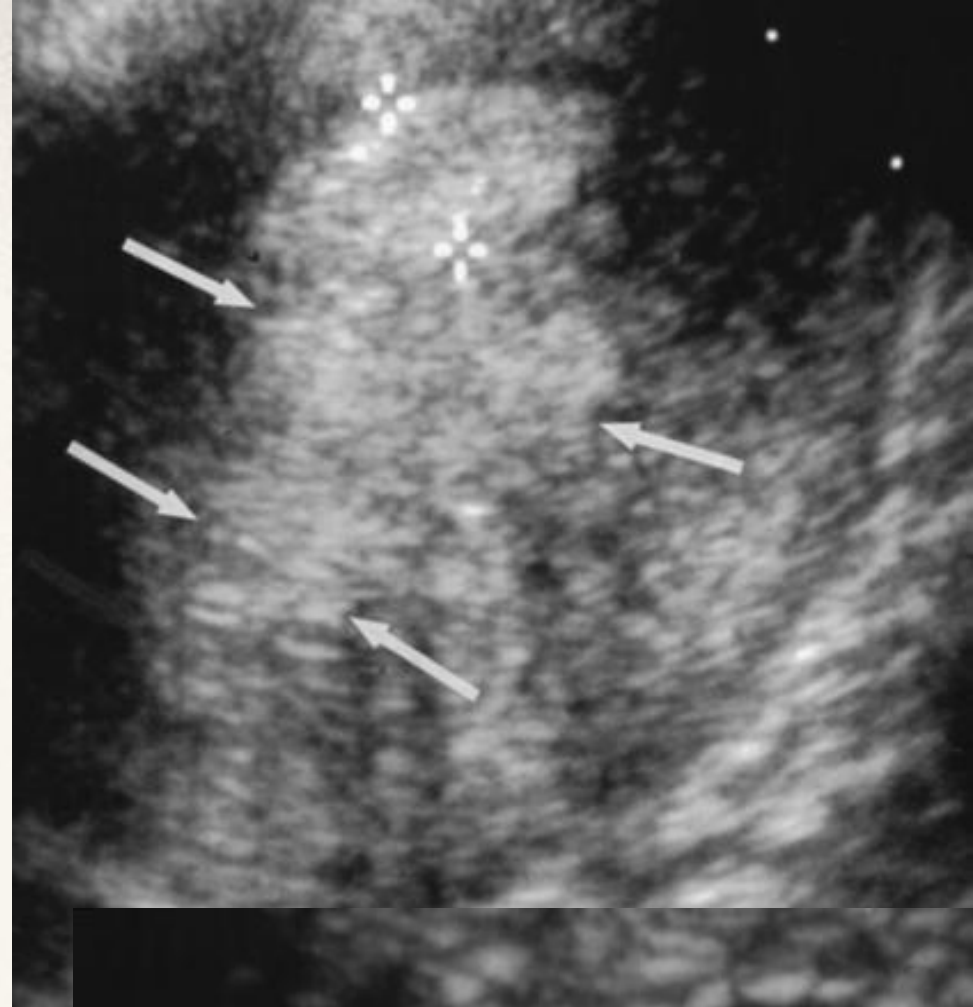
Radiologic Procedure	Rating	Comments	<u>RRL*</u>
US hysterosonogram	7		O
US pelvis with Doppler	5		O
MRI pelvis with contrast	4	See statement regarding contrast in text under “Anticipated Exceptions.”	O
CT pelvis with contrast	2		☼ ☼ ☼
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level

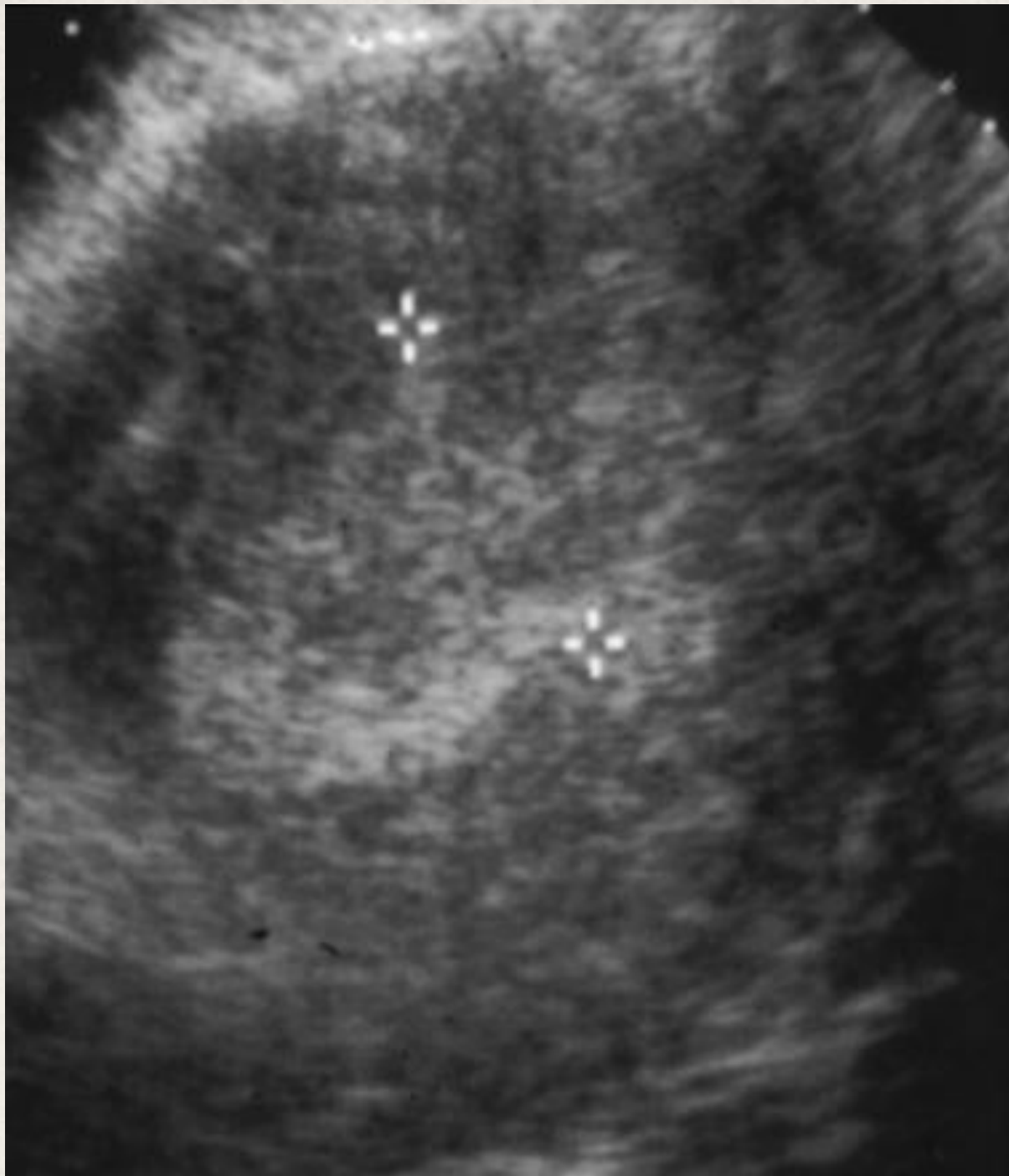
65 yr post menopausal bleeding

Ultrasound TA/TV appropriate first line
diagnostic tool

If the endometrial stripe measures less
than 5mm no further imaging is
neccessary

If >5mm sonohysterography is
recomended





Excessive bleeding

Sonohysterogram showing a polypoid mass biopsy revealing endometrial cancer



37 yr old TV irregular
endometrial
appearance/thickening

When is MRI appropriate in diagnostic workup of vaginal bleeding?

Differentiation of heterogeneous fibroid disease vs. adenomyosis

Suspected endometriosis

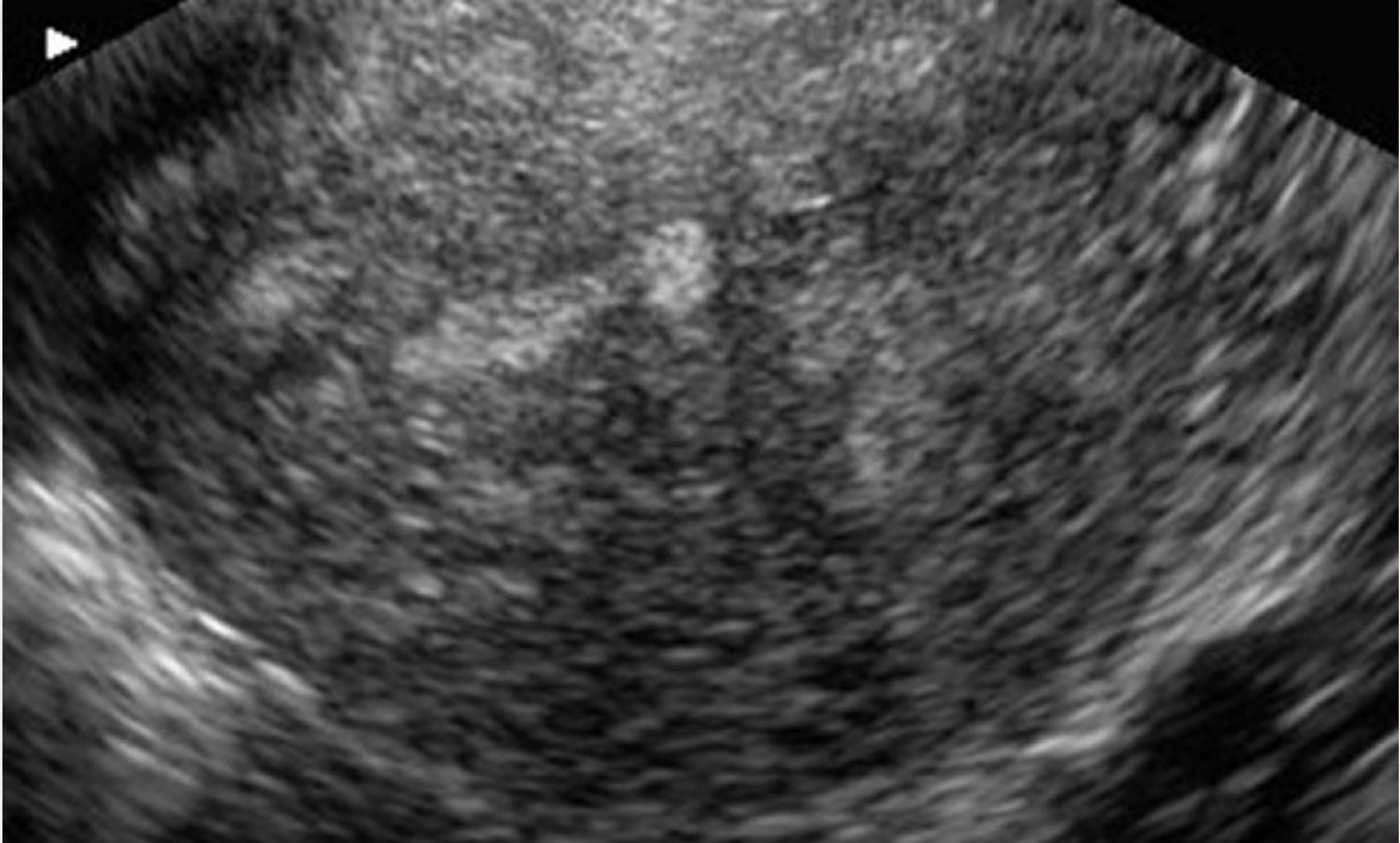
May not be associated with dysfunctional bleeding

Pre/Post Treatment for fibroid embolization (adenomyosis as well)

Known cancer

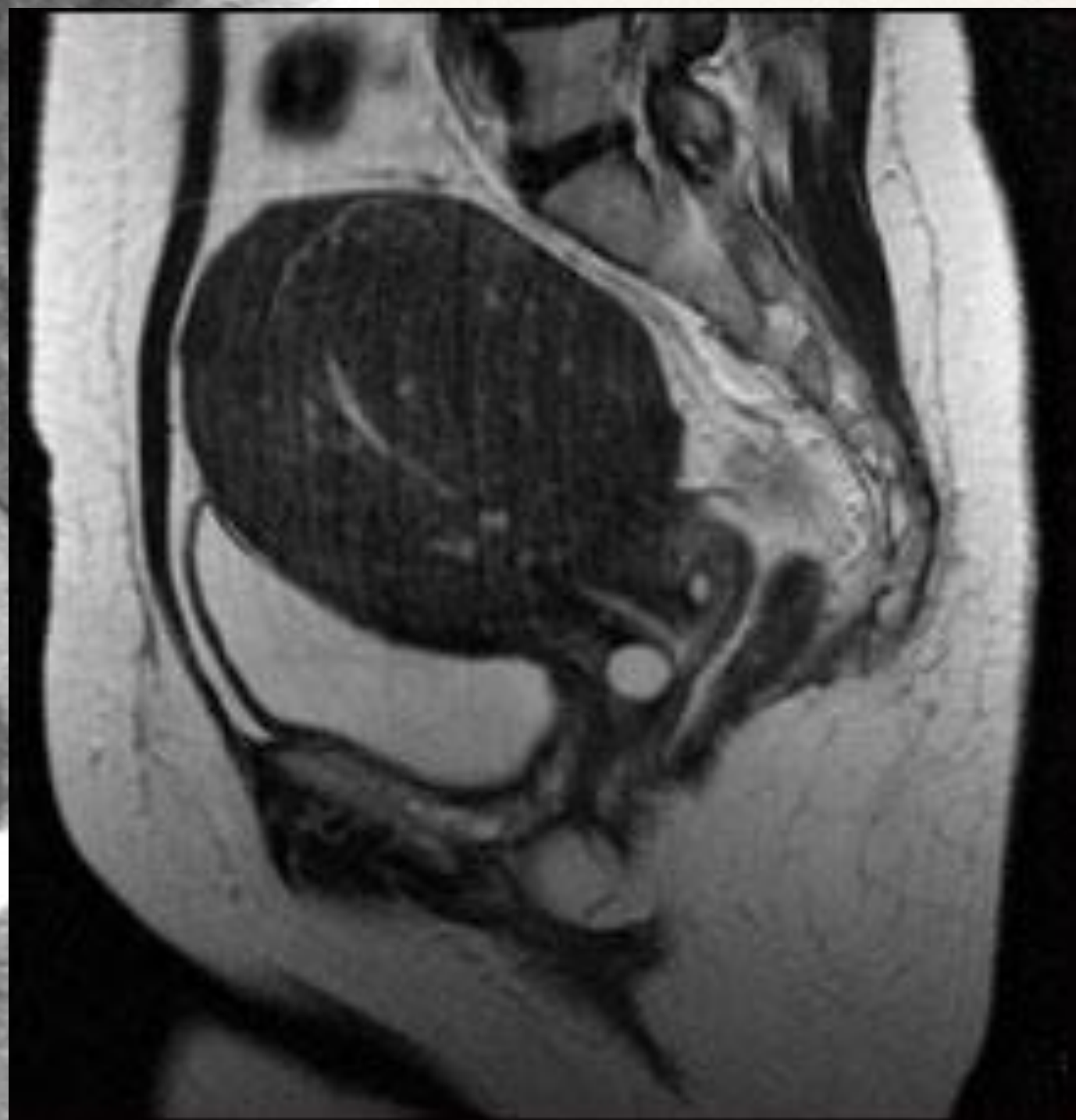
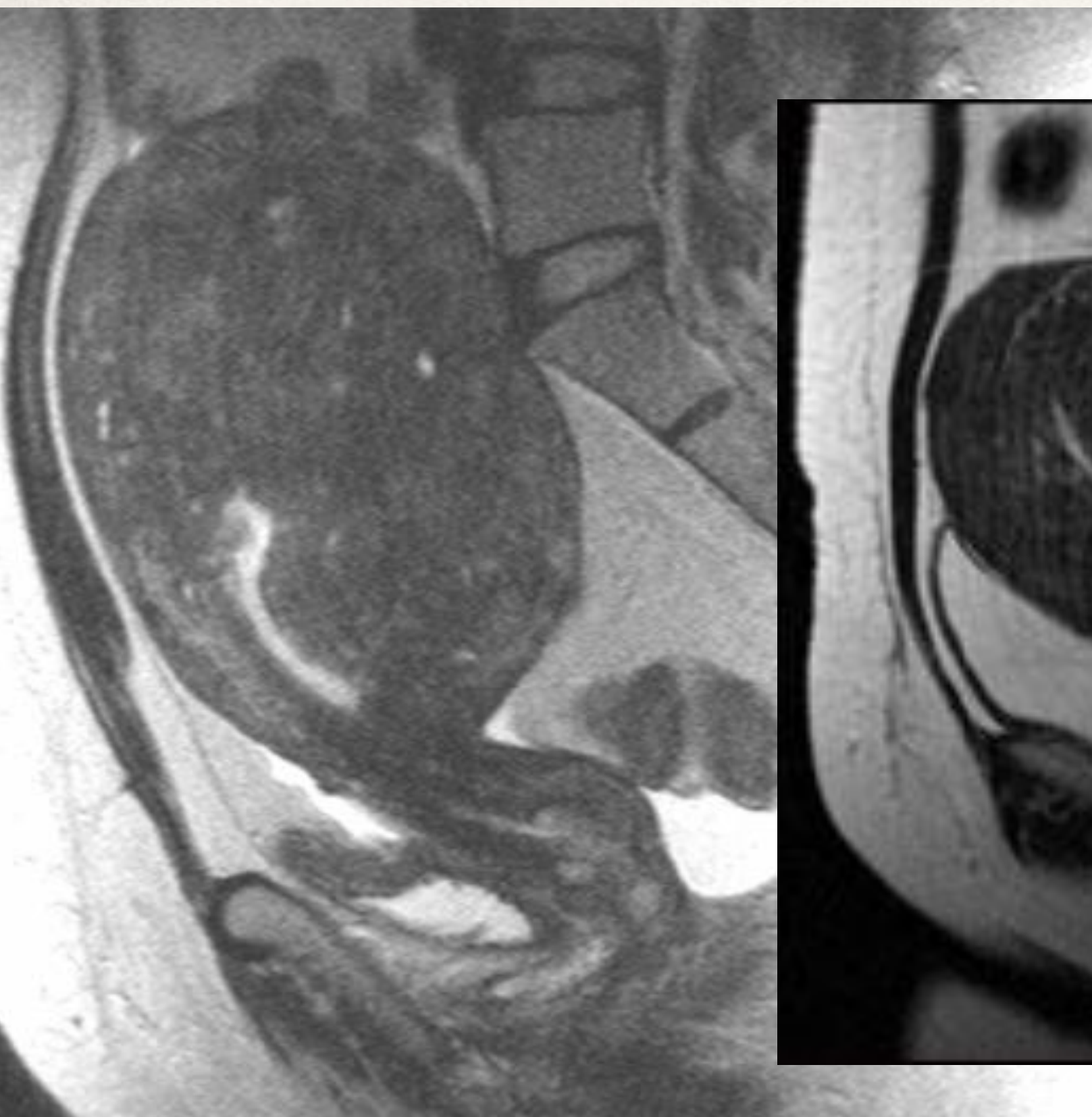
Staging - local extent of disease

Pelvic floor prolapse



36 yr with pain and dysfunctional bleeding

Heterogeneous appearance of the uterine corpus- fibroids? Adenomyosis?



Adenomyosis

Under diagnosed common cause of pelvic pain

Two forms diffuse and focal

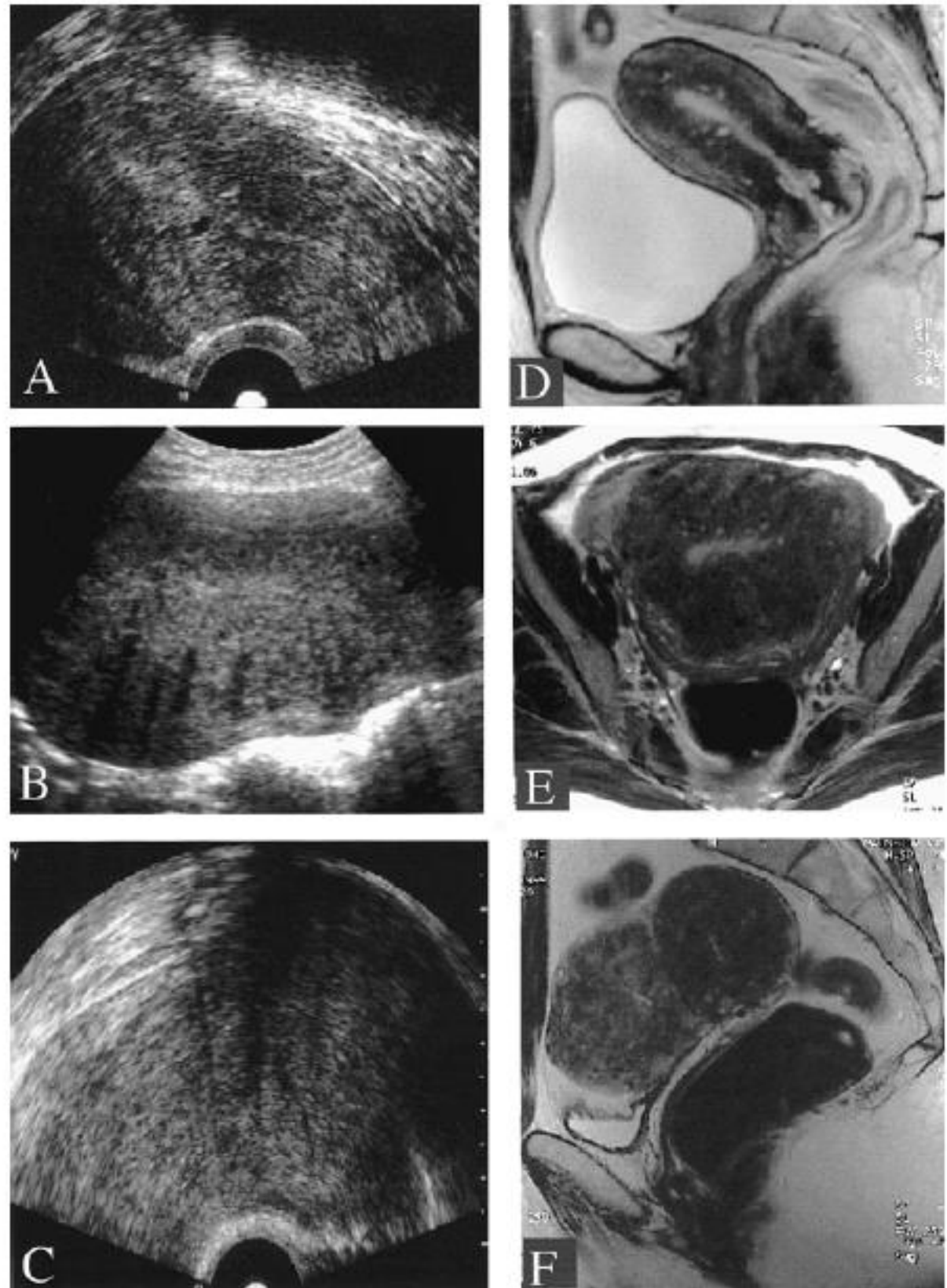
Ectopic endometrial tissue embedded within the myometrial muscle

Causes

Uterine enlargement

Menorrhagia and dysmenorrhea

Can be seen with fibroids & endometriosis



Fibroid disease

Common cause of pain

Can cause dysfunctional uterine bleeding

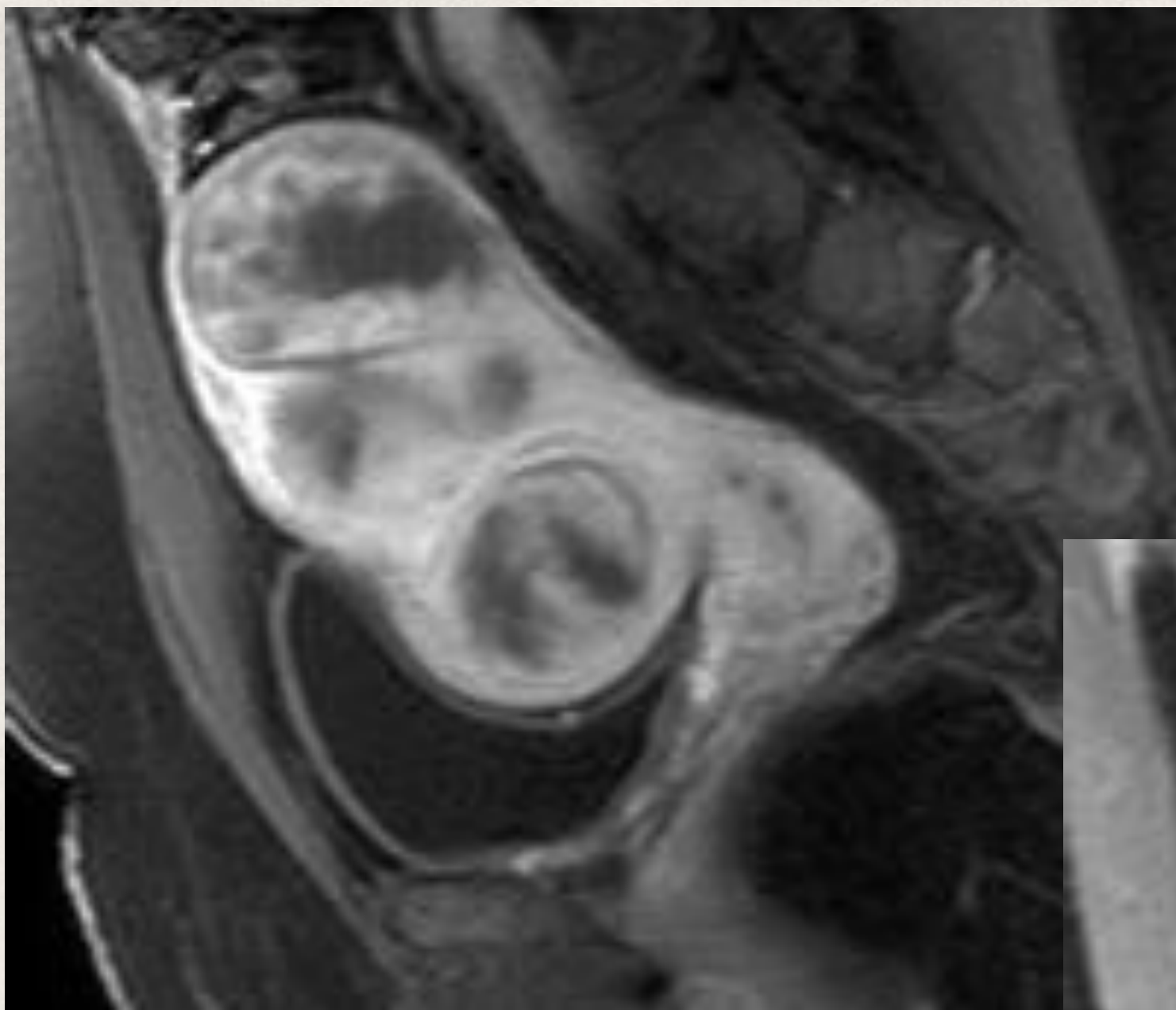
Can cause problems with fertility



MRI of Leiomyomas

Pre/post UAE
Fine anatomic detail
Accurate size and composition
Post contrast imaging showing lack of enhancement





26 yr cyclic Pelvic Pain

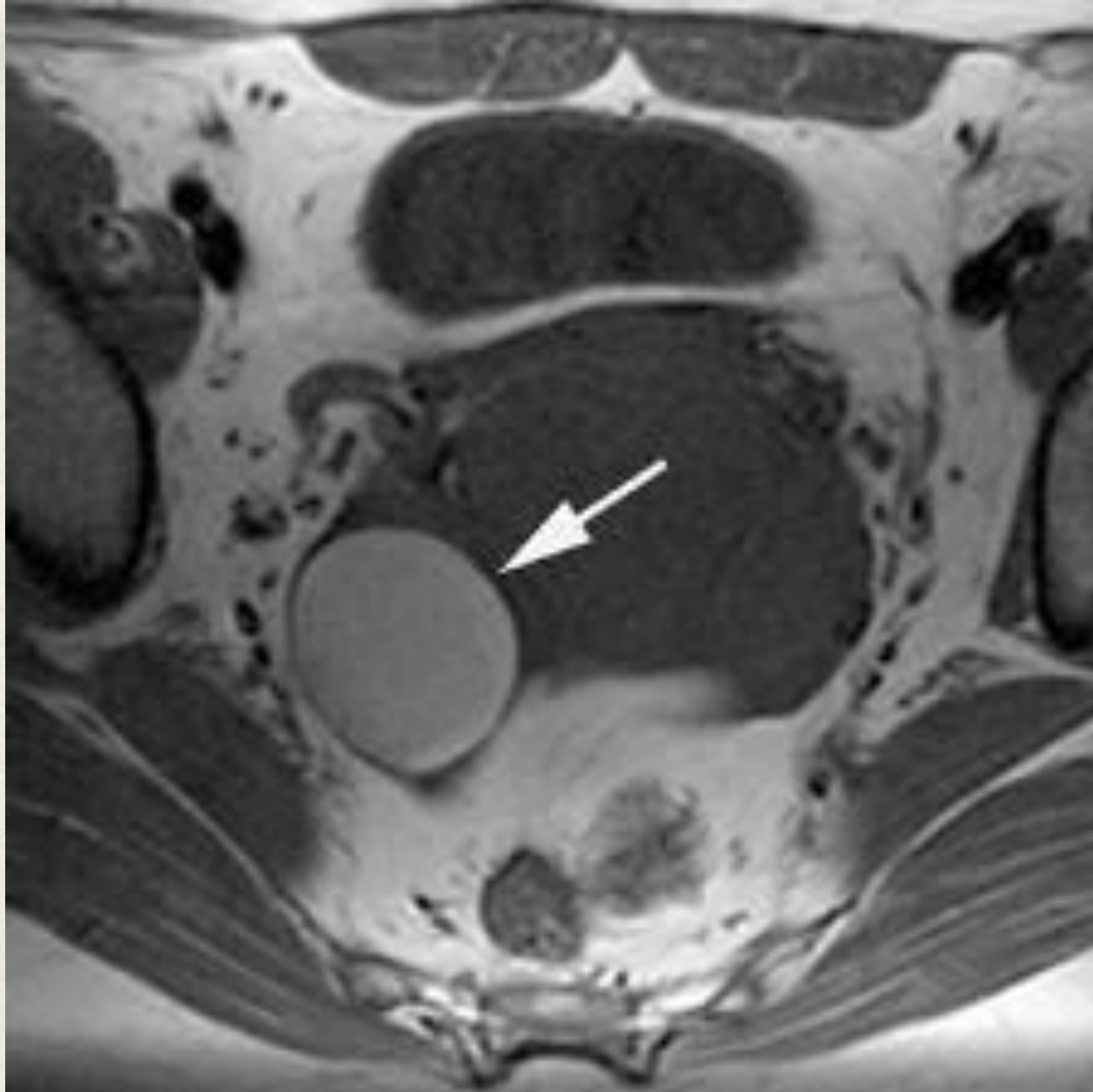
Homogeneous Hypoechoic
mass in adenexa

hemorrhagic cyst vs
Endometrioma/mass

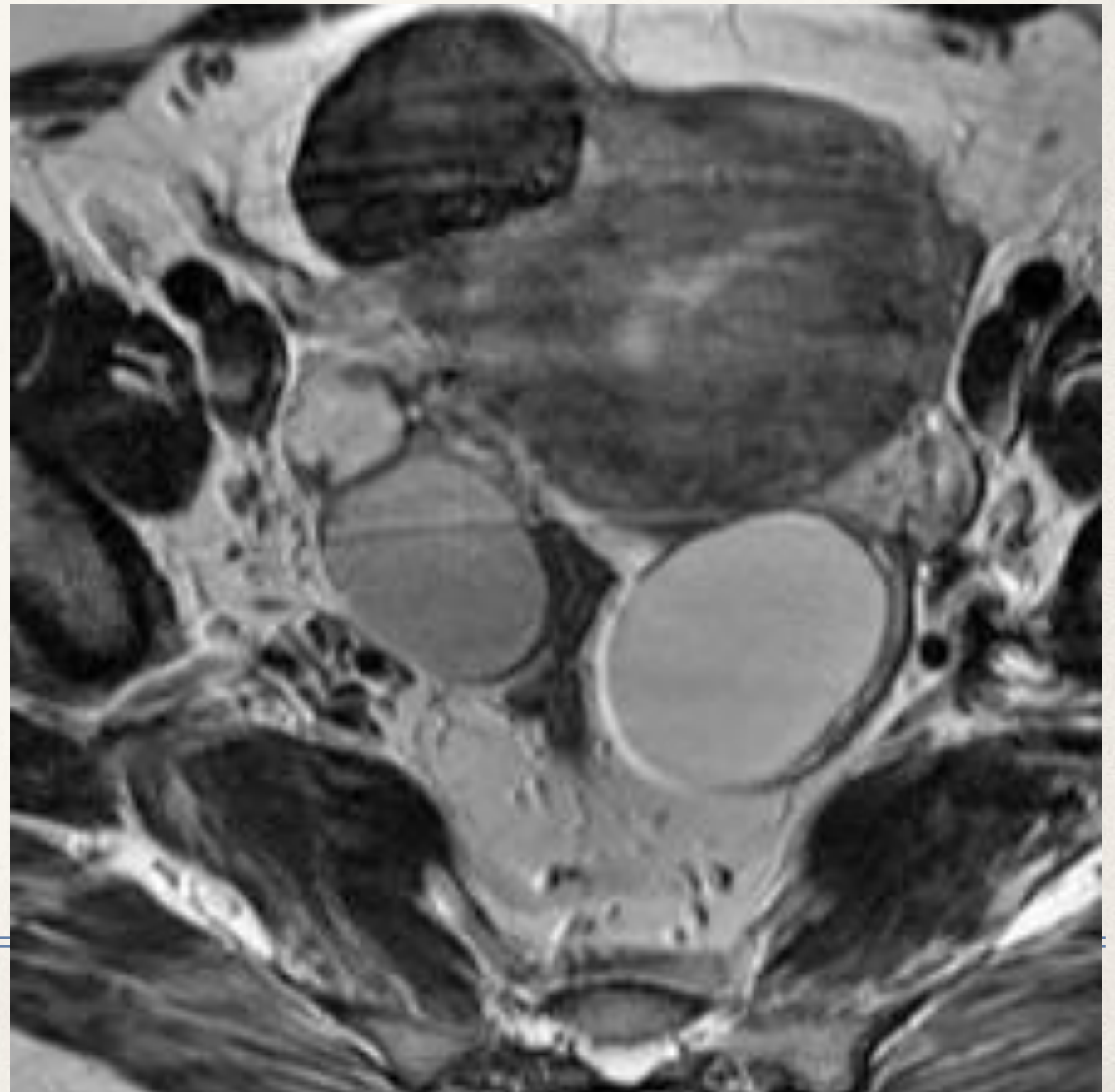
Persisted on a follow up
exam



In many circumstances the ultrasound exam does not reveal evidence of endometriosis



Characteristic appearance of an
endometrioma on MRI
T2 shading



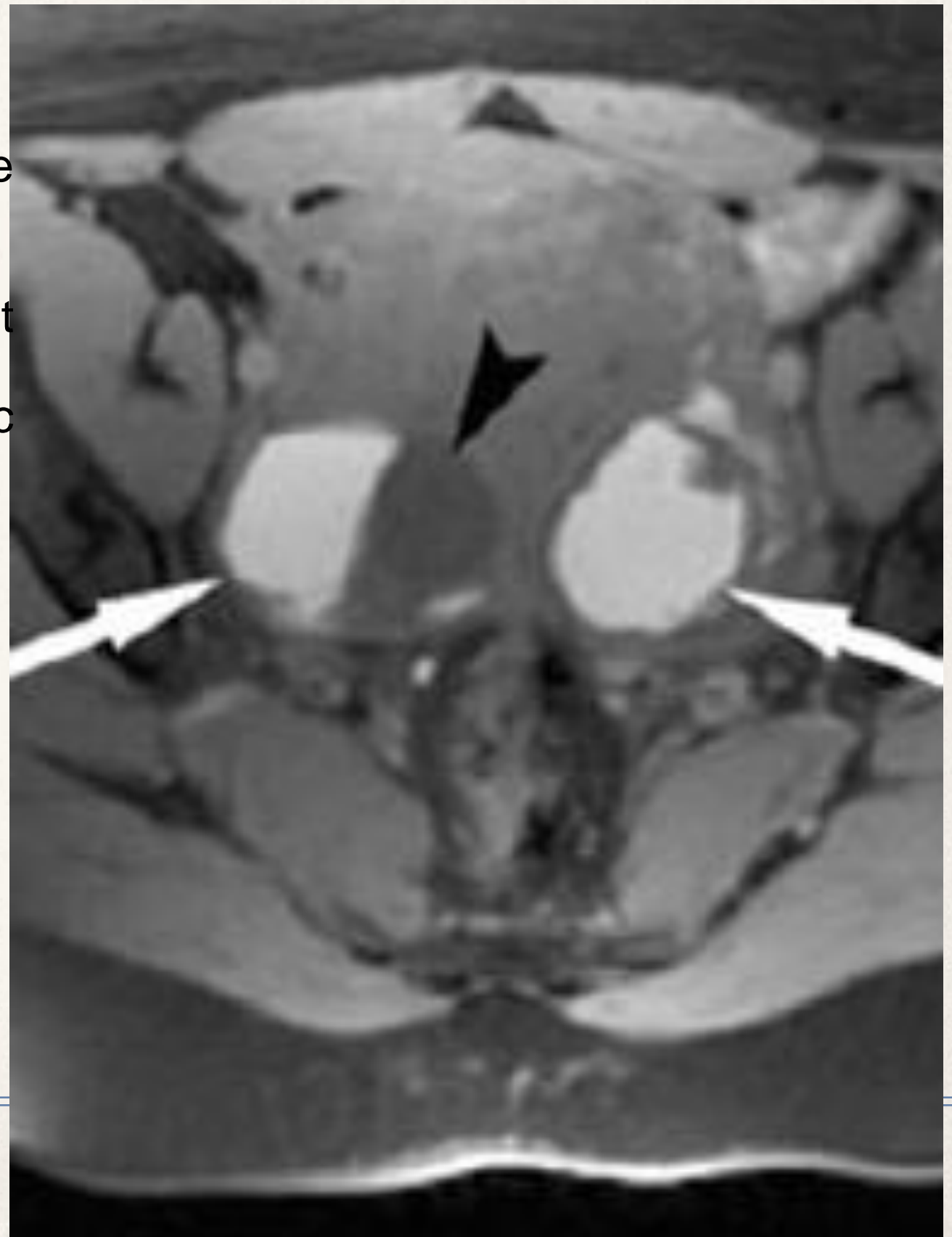
Endometriosis

Ectopic endometrial tissue outside the endometrial cavity

Can occur almost anywhere

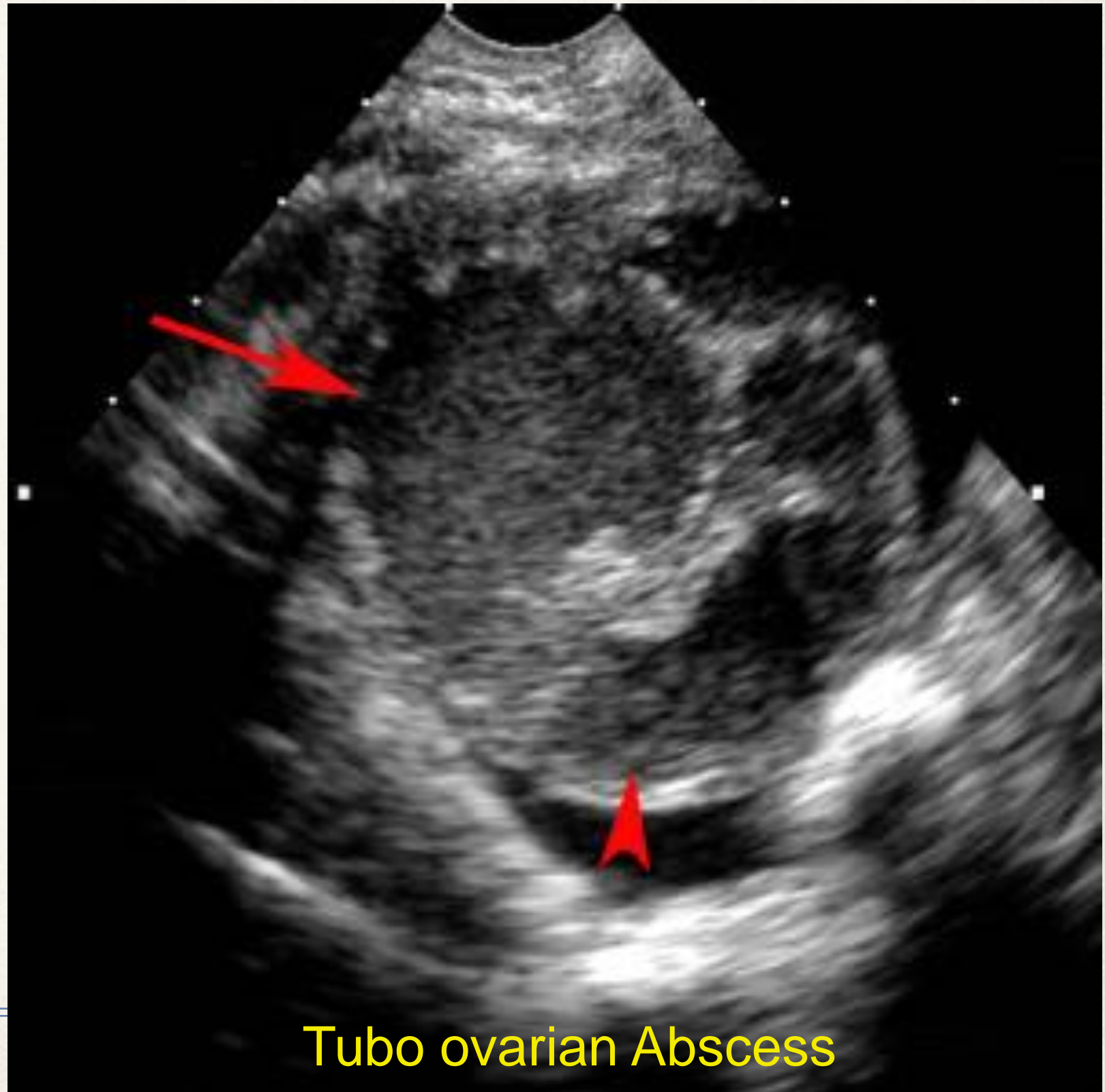
Early diagnosis can limit significant morbidity

infertility/pain/risk of ectopic pregnancy



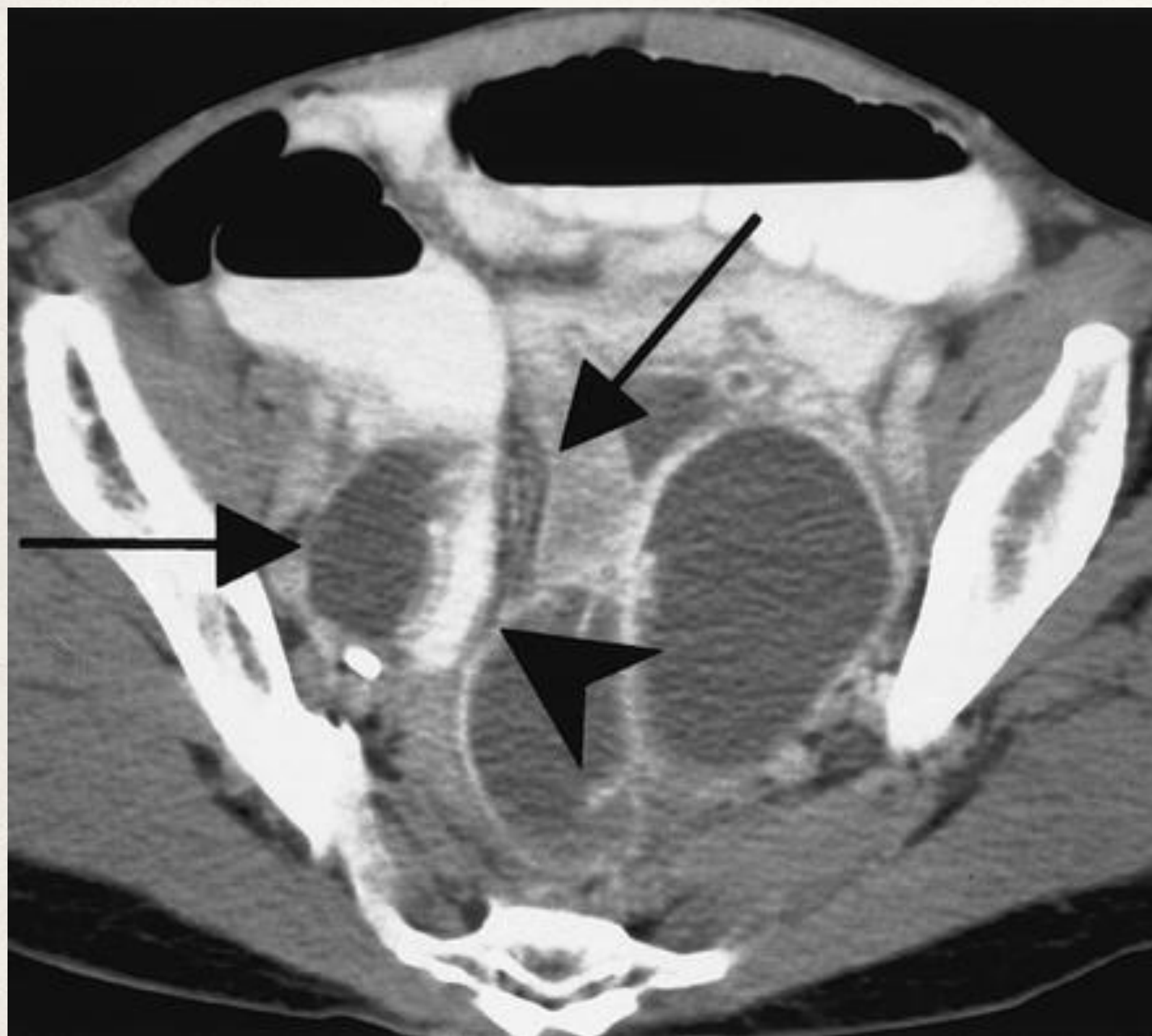
20 yr Pelvic Pain

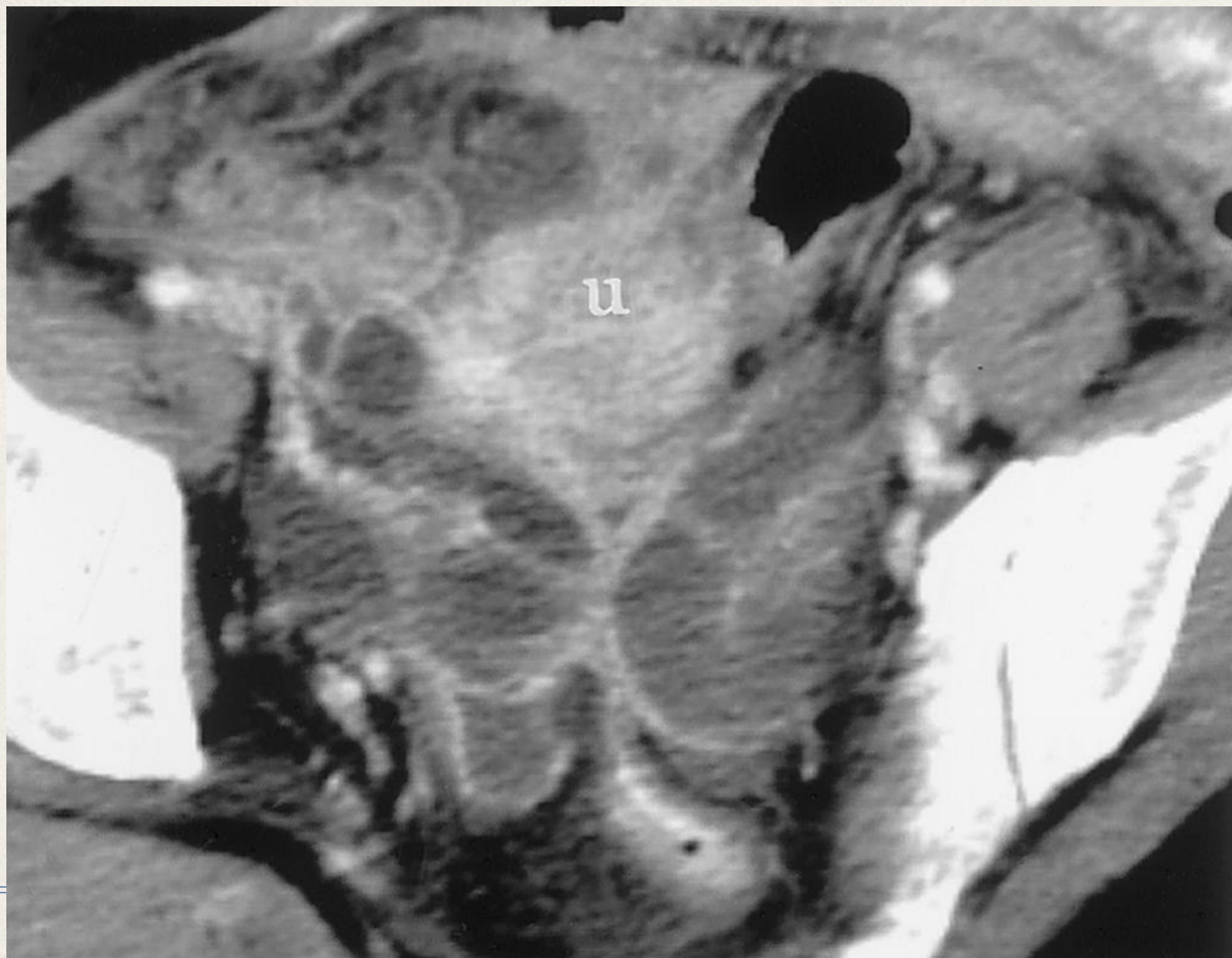
Neg BHCG
Elevated WBC/fever
Suspected infection
ACR recommends
1. Ultrasound
2. CT or MRI



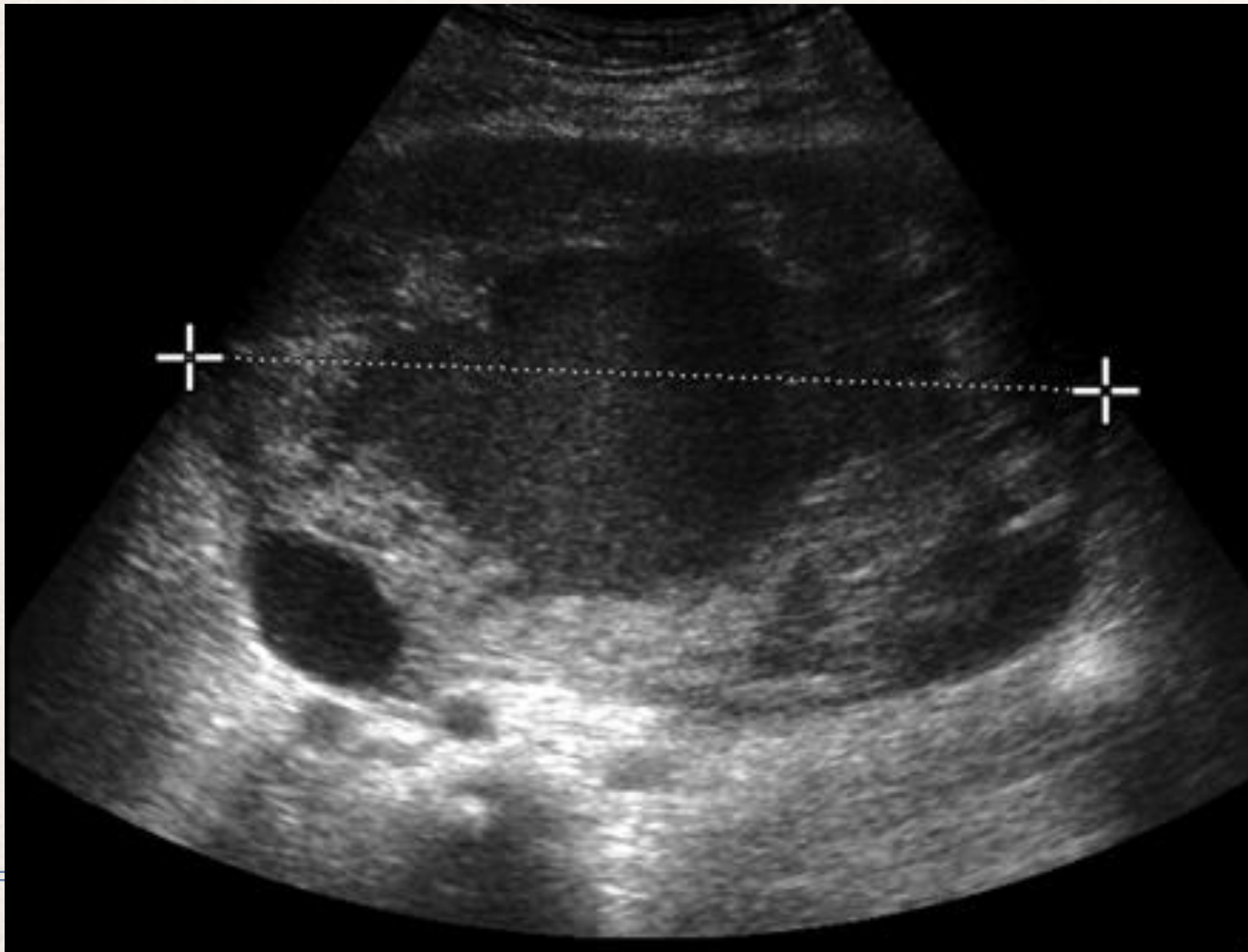
Variant 2:**Gynecological etiology suspected, serum β -hCG negative.**

Radiologic Procedure	Rating	Comments	<u>RRL</u>[*]
US pelvis transvaginal	9	Both transvaginal and transabdominal US should be performed if possible.	O
US pelvis transabdominal	9	Both transvaginal and transabdominal US should be performed if possible.	O
US pelvis with Doppler	9		O
MRI pelvis +/- abdomen with or without contrast	6	If US inconclusive or nondiagnostic. Add abdomen MRI as indicated. See Summary of Literature Review for use of contrast. See statement regarding contrast in text under "Anticipated Exceptions."	O
CT pelvis +/- abdomen with or without contrast	5	If ultrasound is inconclusive or nondiagnostic and MRI is not available. In young women undergoing repeat imaging, cumulative radiation dose should be considered. Add abdomen CT as indicated. See Summary of Literature Review for use of contrast.	☼ ☼ ☼ ☼
<u>Rating Scale:</u> 1,2,3 Usually not appropriate; 4,5,6 May be appropriate; 7,8,9 Usually appropriate			*Relative Radiation Level



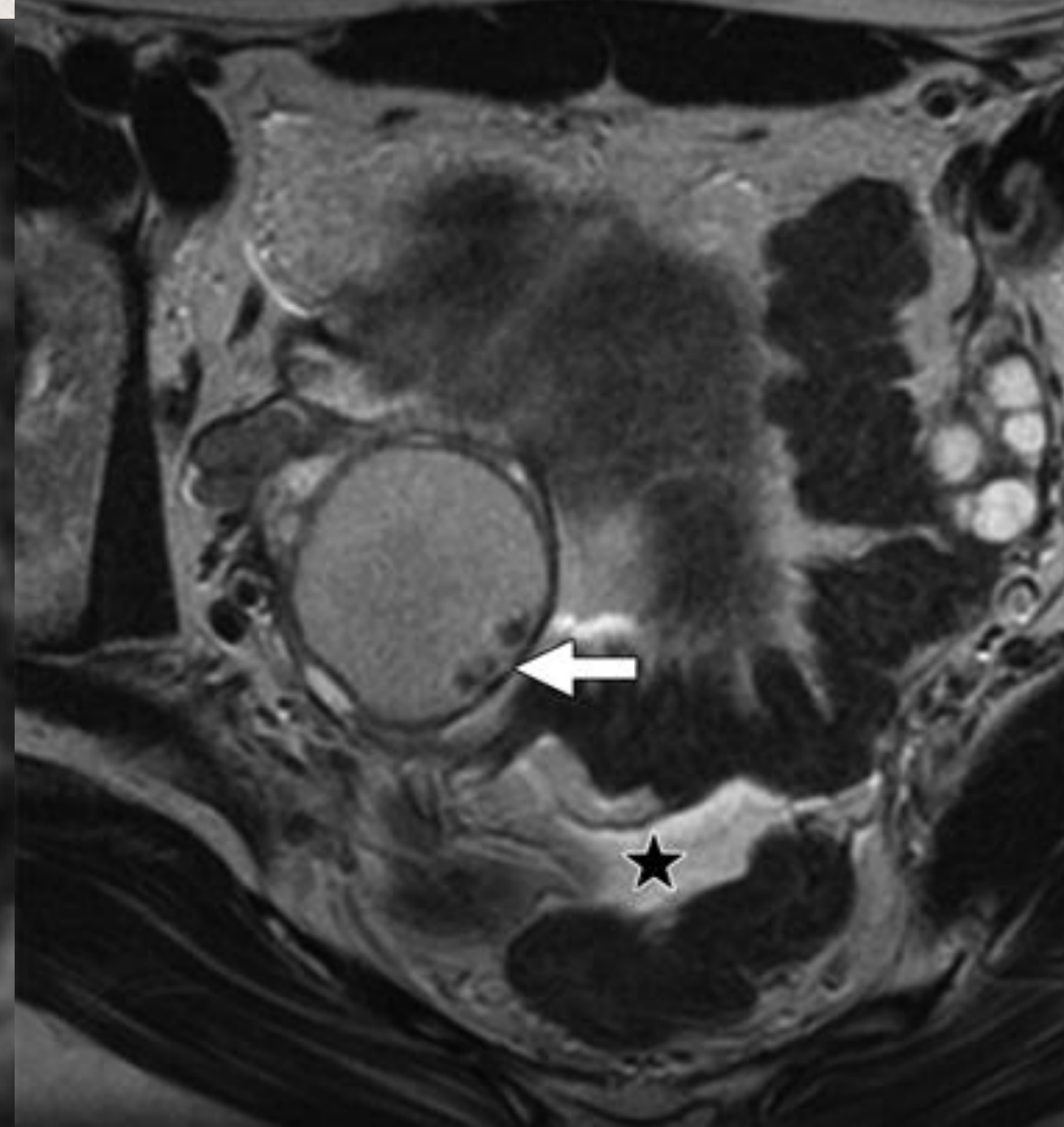


50 yr vague abdominal
discomfort



Complex cystic mass
What Next?

Subtracted



T2 and subtracted T1 weighted sequences

Right ovarian cystic mass with nodular enhancing components



mucinous carcinoma



Summary

Summary

❖ ACR appropriateness criteria

- ❖ Ultrasound TA/TV - First line imaging study under most circumstances
- ❖ Sonohysterography - follow up for endometrial pathology
- ❖ MRI - Great for:
 - ❖ endometriosis/adenomyosis
 - ❖ Pre/post embolization
 - ❖ Evaluation of ovarian/endometrial masses

❖ Pelvic floor prolapse

- ❖ Problem solving tool
- ❖ CT rarely used for the indication of pelvic pain