

IMAGING FEATURES OF LEIOMYOMA AND LEIOMYOSARCOMA

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2ND YR PG

DEPT OF RADIODIAGNOSIS



Leiomyomas



✓ They are classified into

Intramural

Sub mucosal

Sub serosal



IMAGING

Plain Radiograph

- ✓ Nonspecific *soft-tissue density* mass in the pelvis
- ✓ Displacing bowel loops
- ✓ *Popcorn calcification* within the pelvis, exhibit coarse peripheral or central calcification –calcified fibroids



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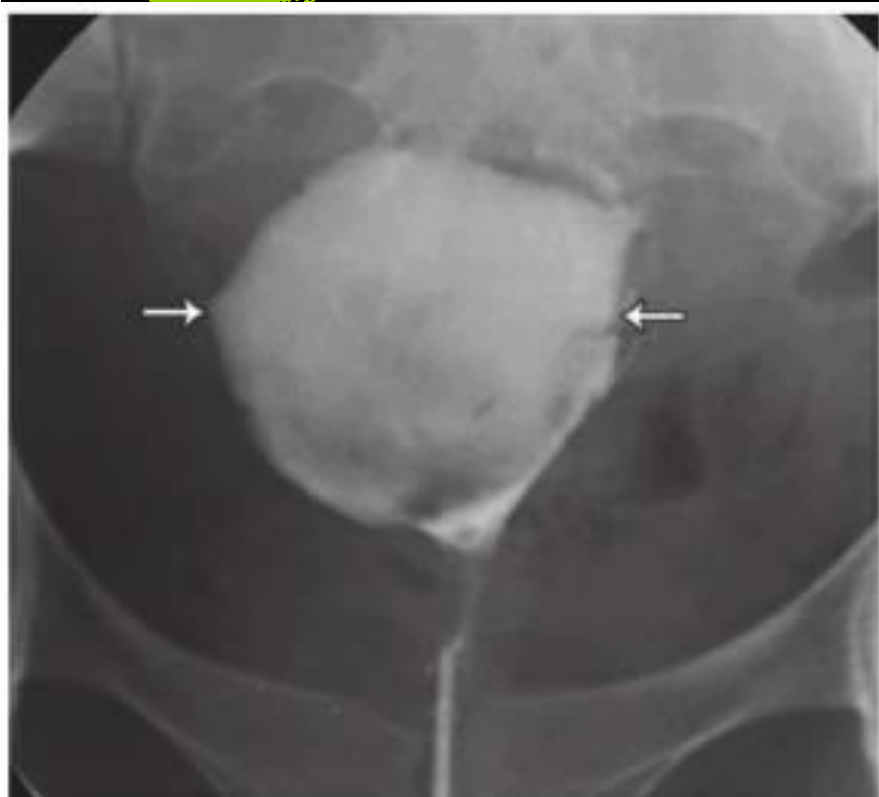
IVU



- ✓ Mass effect on dome of the urinary bladder
- ✓ Hydroureteronephrosis



HSG



Intra Uterine Filling Defect

USG

- ✓ *Hypoechoic* or heterogeneous mass
- ✓ *Distortion* of external uterine contour
- ✓ *Attenuation* or shadowing without discrete mass
- ✓ *Cystic areas* of necrosis / degeneration may be seen as hypoechoic areas
- ✓ Echogenic *endometrial stripe* may be displaced by a fibroid
- ✓ *Calcification*

✓ *Diffuse leiomyomatosis*

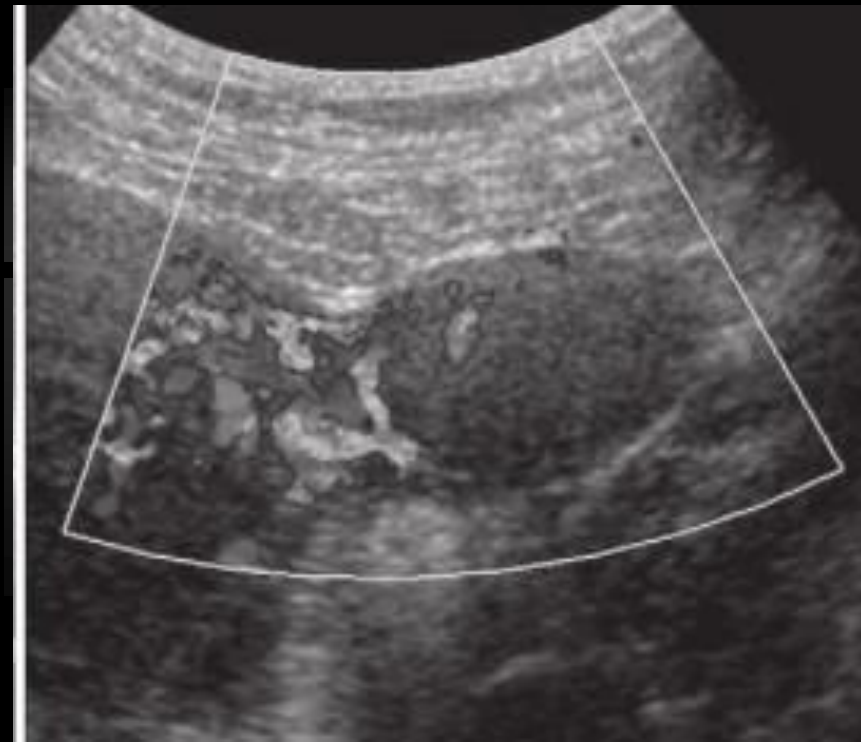
enlarged uterus with abnormal echogenicity

Color Doppler

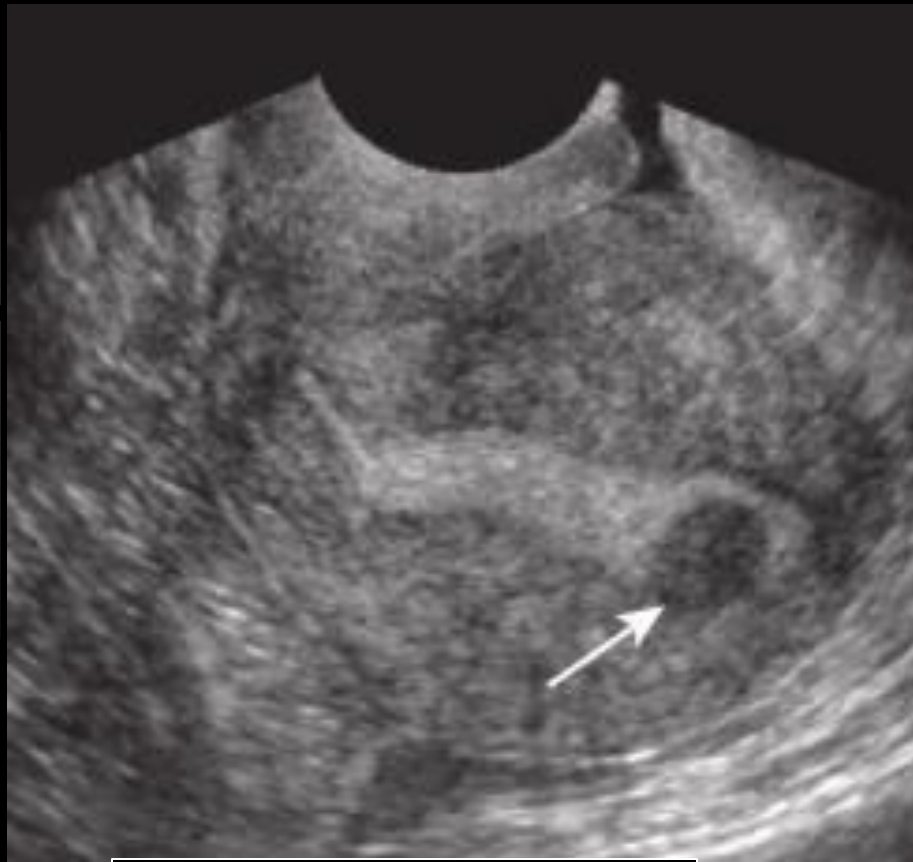
-pedunculated subserosal fibroid shows blood supply arising from uterus.



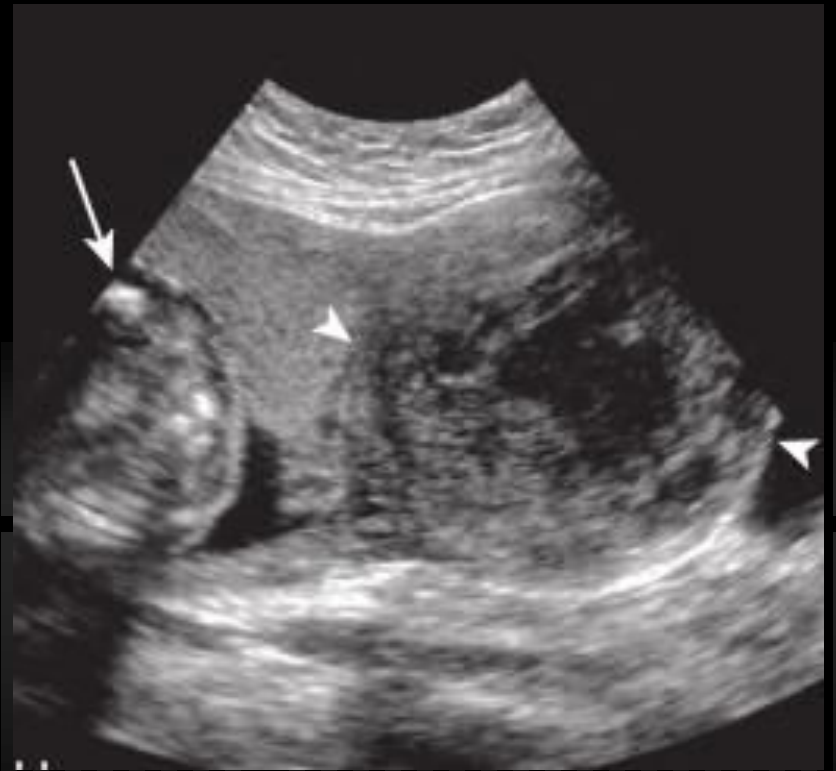
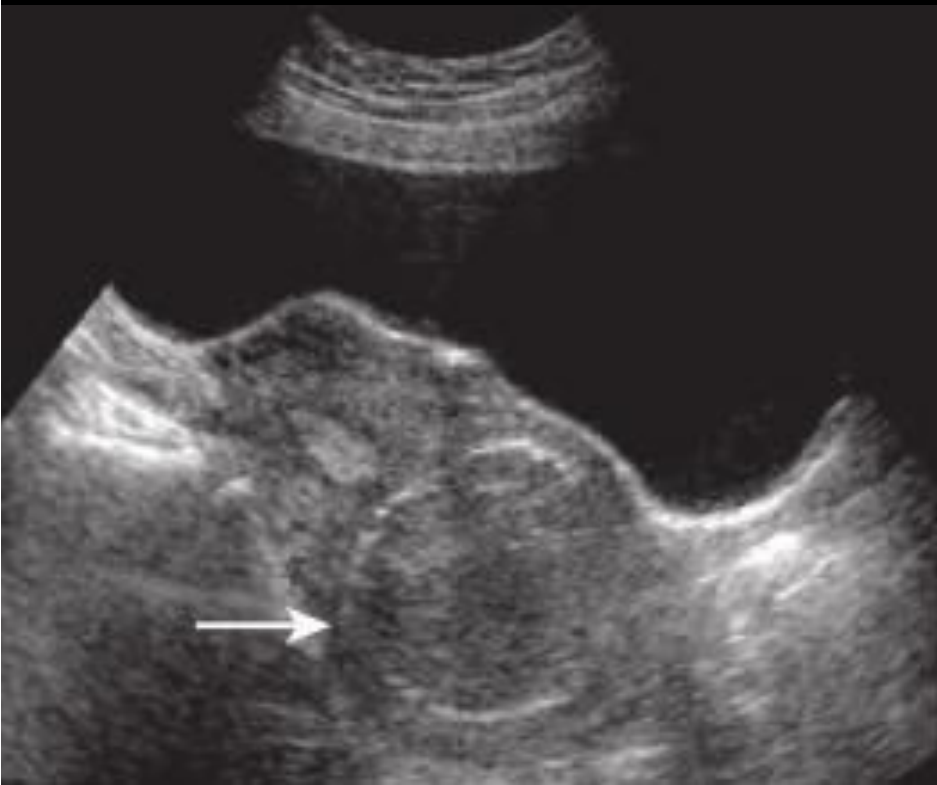
Sub serosal



pedunculated Sub
serosal on CDF

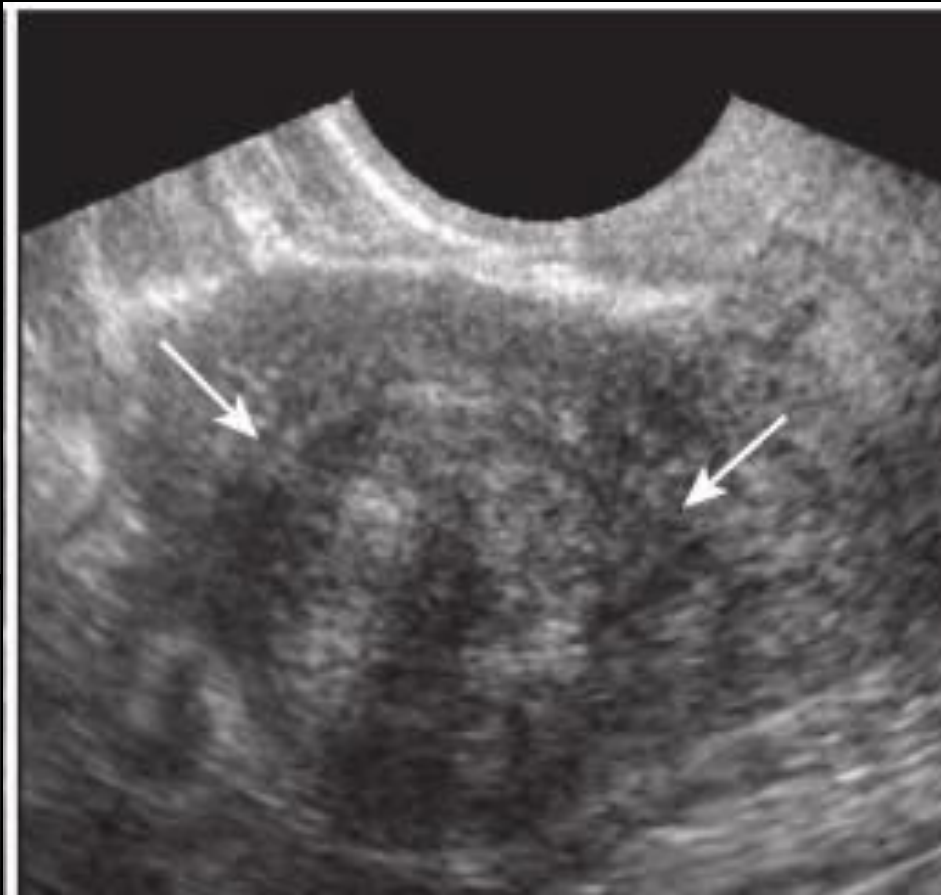


Sub mucosal



Perpheral
calcified fibroid

Cystic
degeneration



TAS -heterogeneous but predominately hypoechoic posterior uterine fibroid.



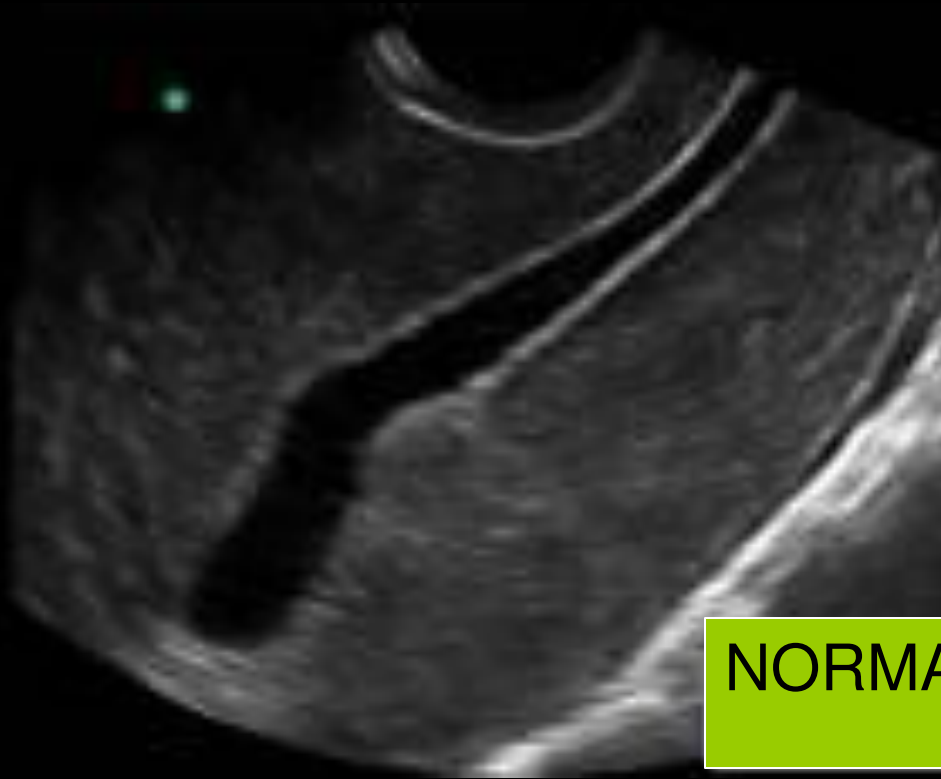
Anterior and Posterior Wall Fibroids

Sono salpingography



- ✓ **Sonosalpingography (SSG)**, also known as **Sion test**, is a diagnostic procedure primarily used for evaluating
 - Patency of fallopian tubes
 - Detection of submucous fibroid polyp
 - Asherman's syndrome
 - Uterine anomalies

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NORMAL



BEFORE

AFTER



CT

- ✓ Has a limited role
- ✓ Mass containing mixed densities, low attenuation if necrotic and higher attenuation if calcified or hemorrhagic
- ✓ Calcifications may be visible more clearly

CT




right anterior fundal uterine SUB
SEROSAL fibroid.

MRI



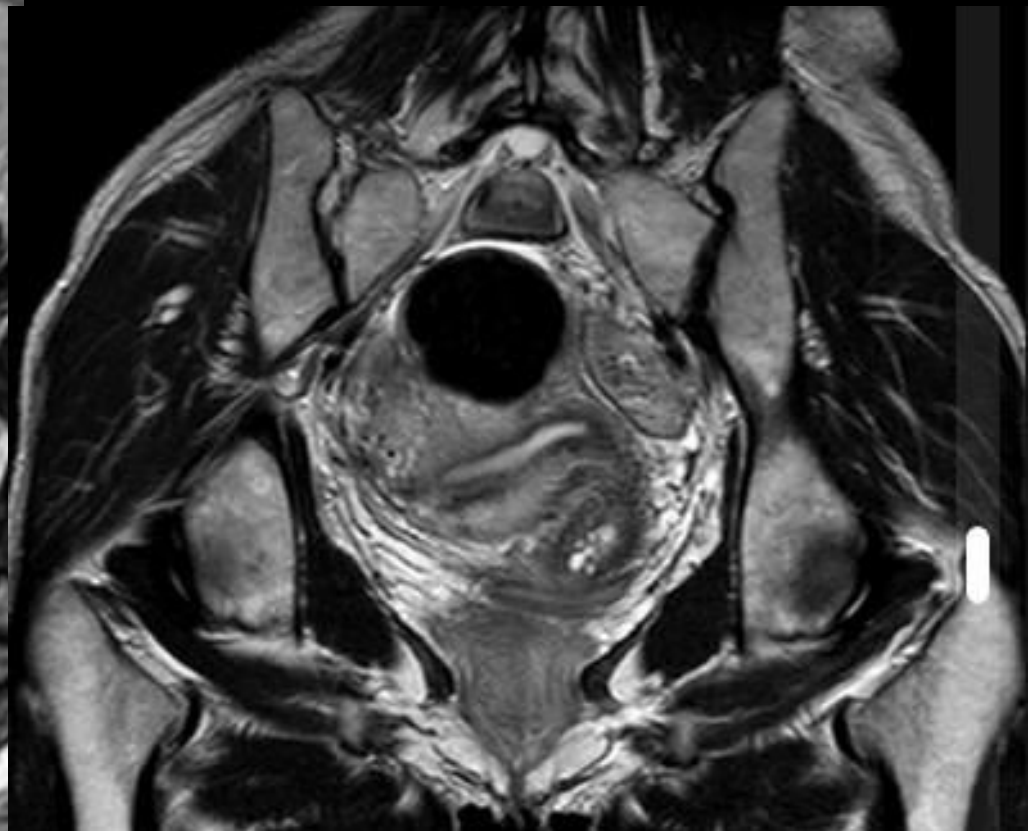
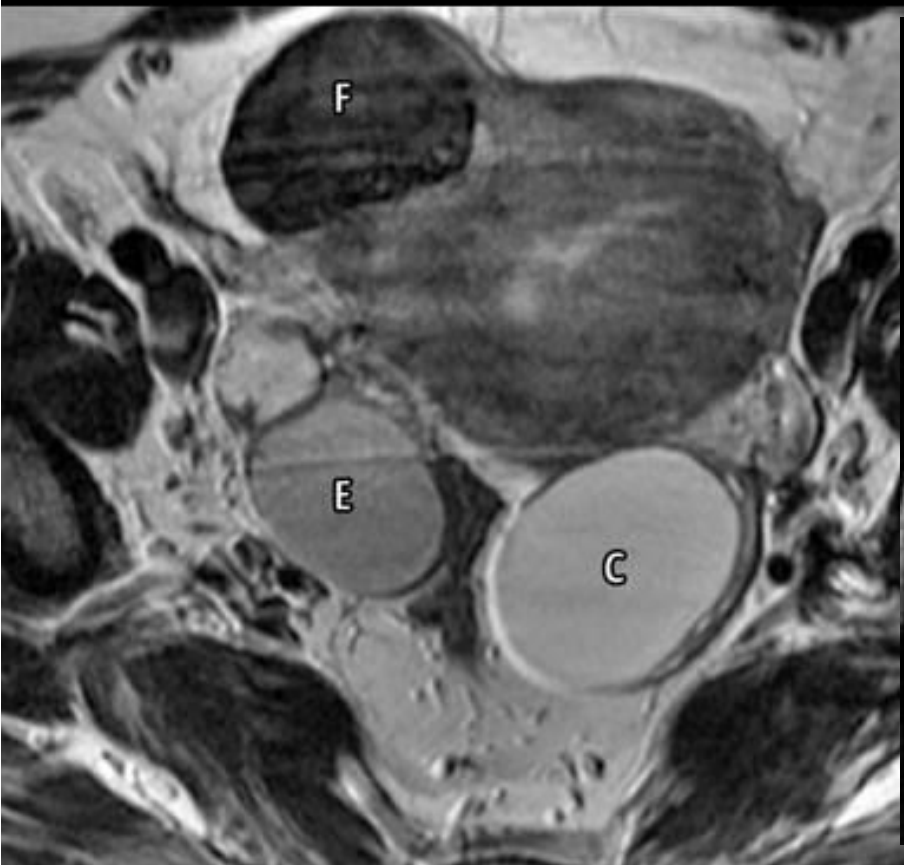
- ✓ In patients where US findings are confusing

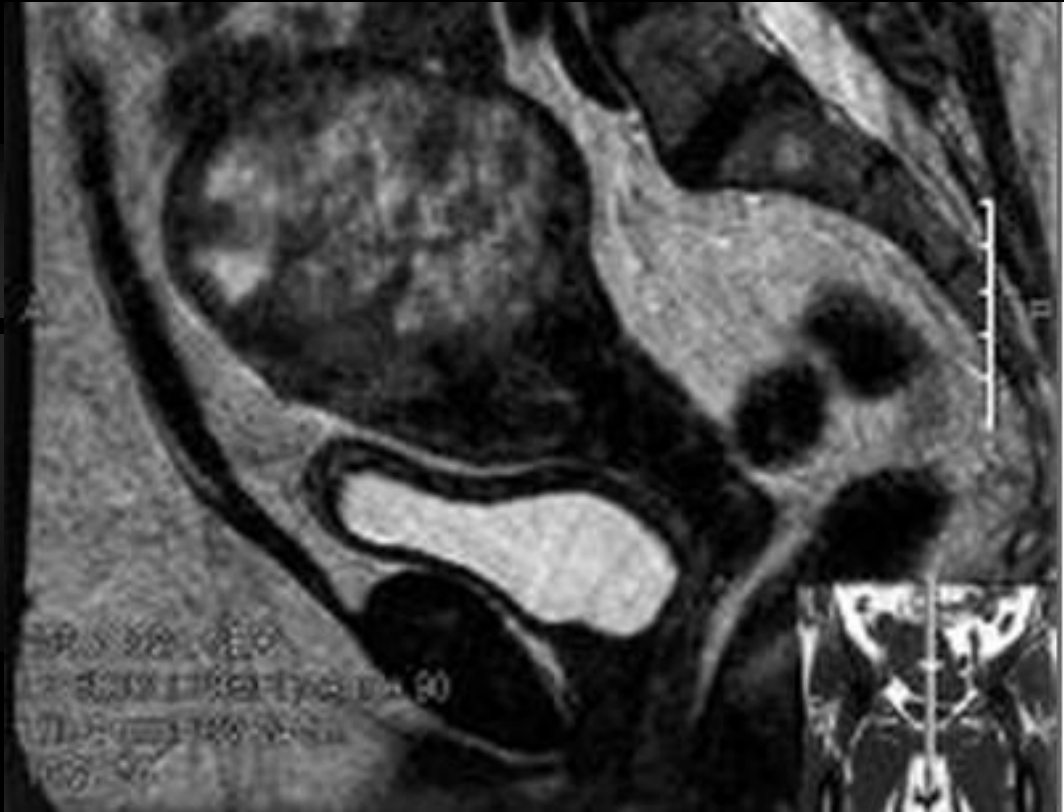
- 
- ✓ appear as low to intermediate signal intensity compared with the normal myometrium on T1 and T2
 - ✓ degenerated fibroids and calcification appear as low signal intensity




- ✓ cystic degeneration / necrosis can have a variable appearance, usually appearing high signal on T2 sequences.

T2W

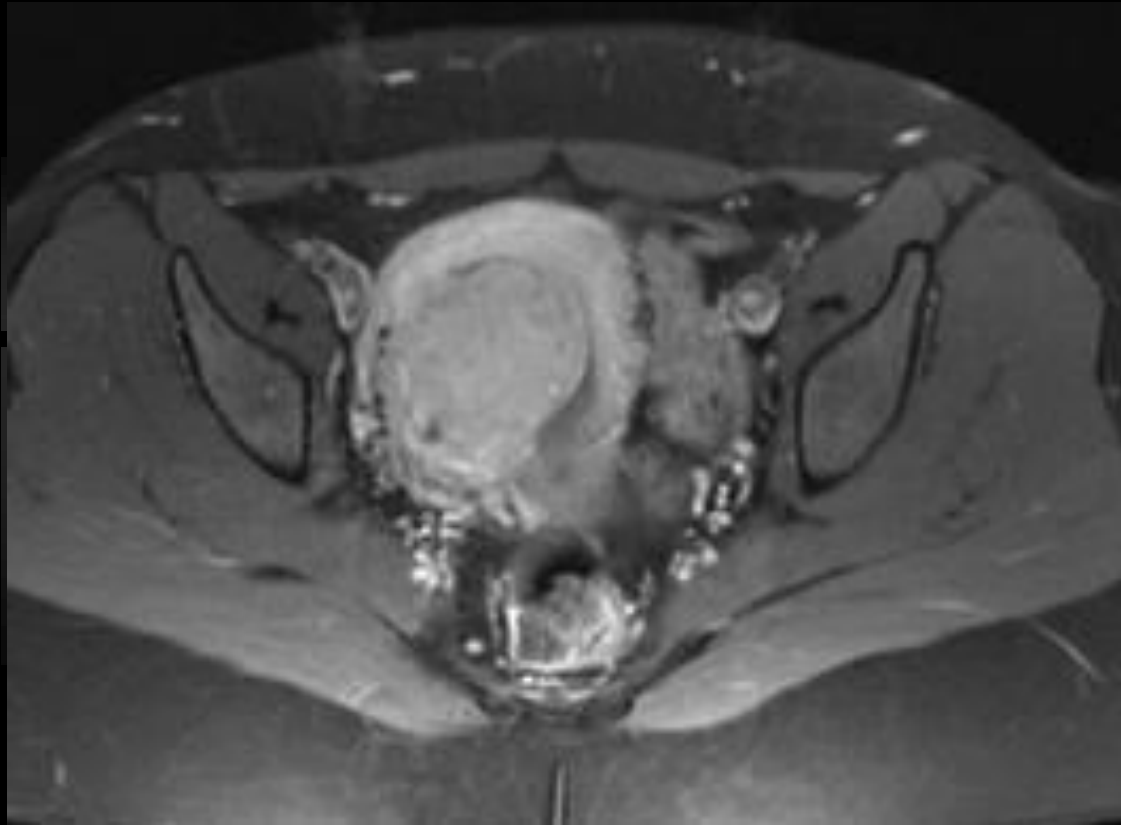




T2W -heterogenous

- 
- ✓ The intravenous administration of *gadolinium-based contrast* material usually is not required
 - ✓ However, if it is administered, fibroids usually enhance later than does the healthy myometrium.

T1 Post contrast

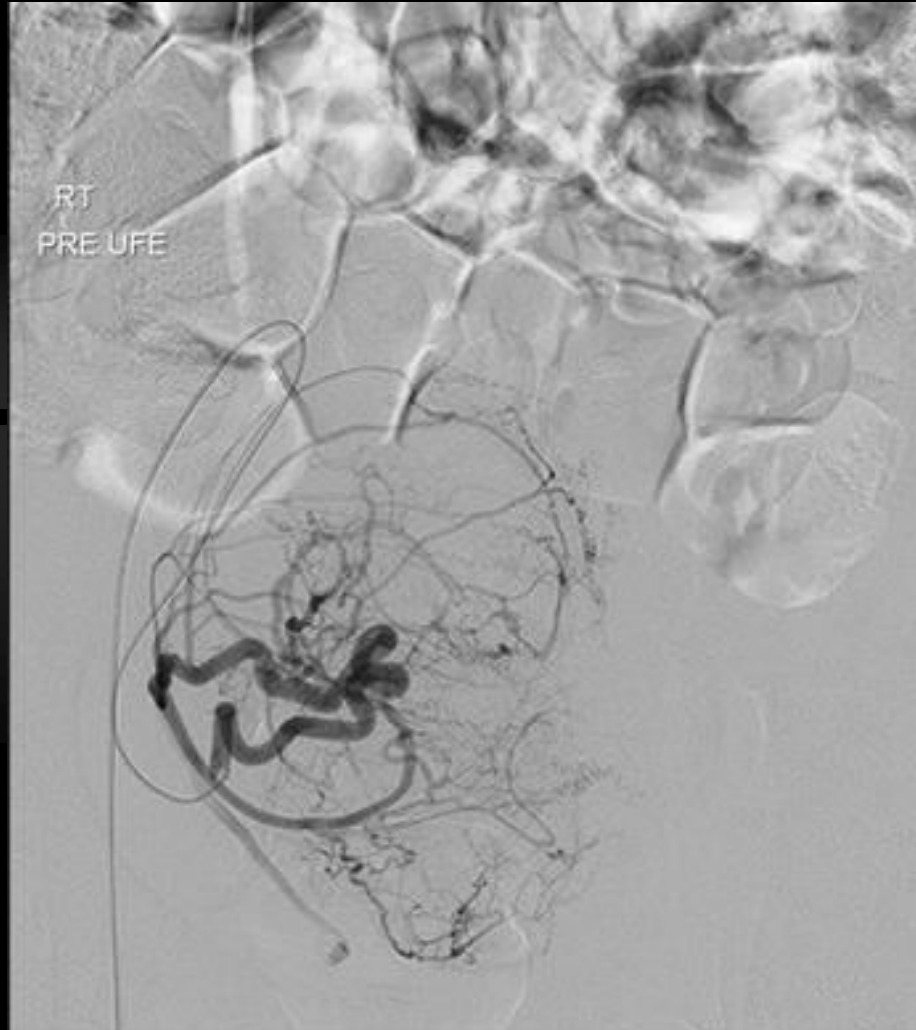


Angiography



- ✓ Invasive procedure
- ✓ As a therapeutic technique

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INTERVENTIONS



- ✓ *Magnetic resonance-guided high-intensity* focused ultrasound has been shown to be successful in reducing the size of fibroids
- ✓ *Uterine artery embolization (UAE)* is now an accepted alternative to surgical and medical treatment of symptomatic fibroids

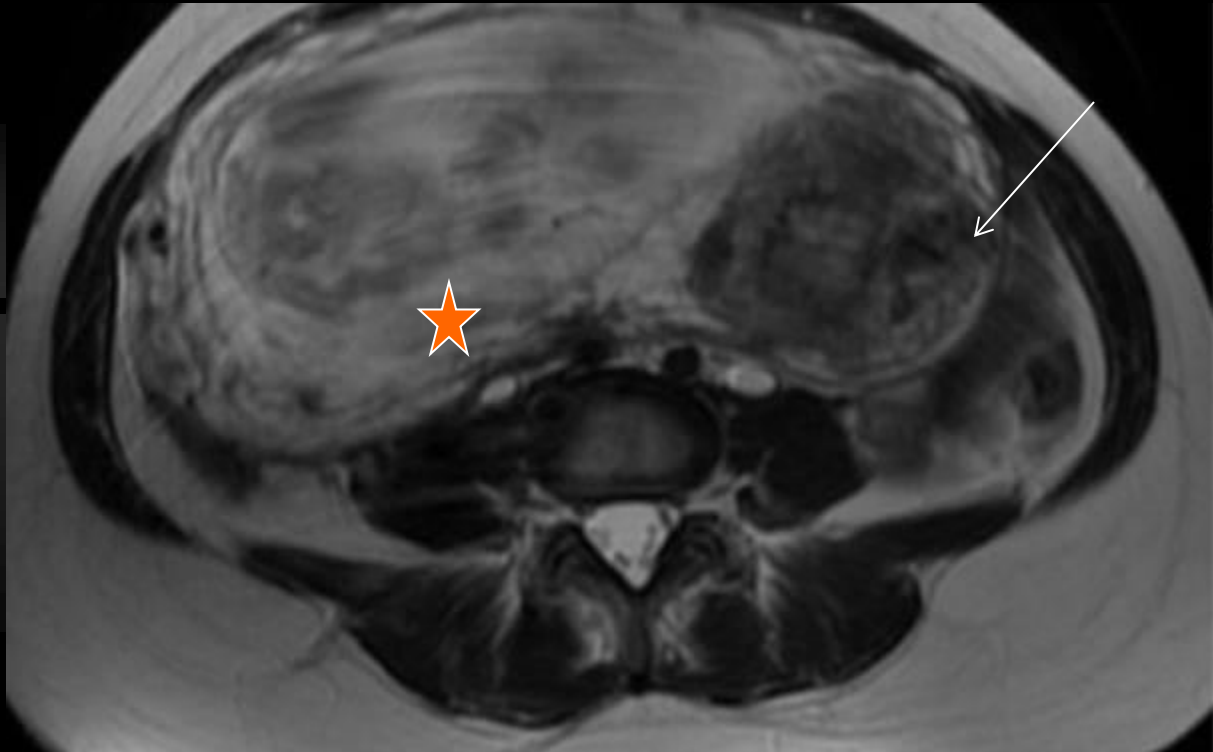
Variations



- ✓ Red Degeneration Fibroid
- ✓ Lipoleiomyoma
- ✓ Myxoid leiomyoma
- ✓ Metastasizing leiomyoma
- ✓ Peritoneal leiomyomatosis
- ✓ Retro peritoneal growth
- ✓ Parasitic growth

Red Degeneration Fibroid

- ✓ Ultrasound show intramural anechoic fluid collections within the lesion
- ✓ Peripheral rim of low SI on T2 and high SI on T1w suggest obstructed veins at the periphery of the lesion
- ✓ Shows no enhancement on contrast studies.





Leiomyosarcoma

Features of leiomyosarcoma

- ✓ *Irregular* margin of the lesion suggests sarcomatous transformation though not specific.
- ✓ Though distinction between leiomyoma and leiomyosarcoma on imaging is not successfully assessed
- ✓ However ,rapid growth on serial scans is suggestive finding.



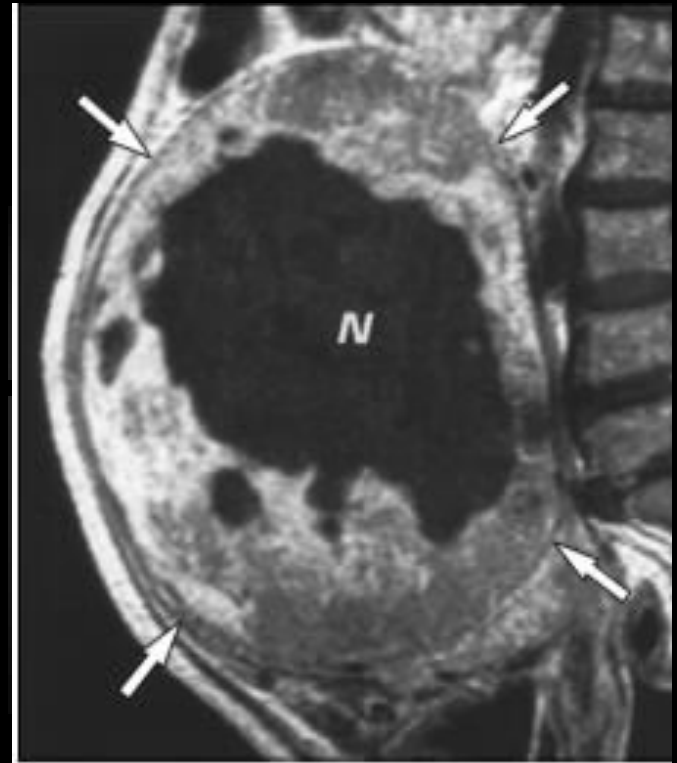
- ✓ Massive uterine enlargement with irregular central zones of low attenuation and with foci of calcification
- ✓ Distant *METS* most often to the lungs

USG



show large, heterogeneous
uterine mass
with cystic areas

SAG T1 post cont



irregular central zones of
low signal intensity



Thank you