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KOREAN SOCIETY OF ULTRASOUND IN MEDICINE

KSUM

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KSUM 2026

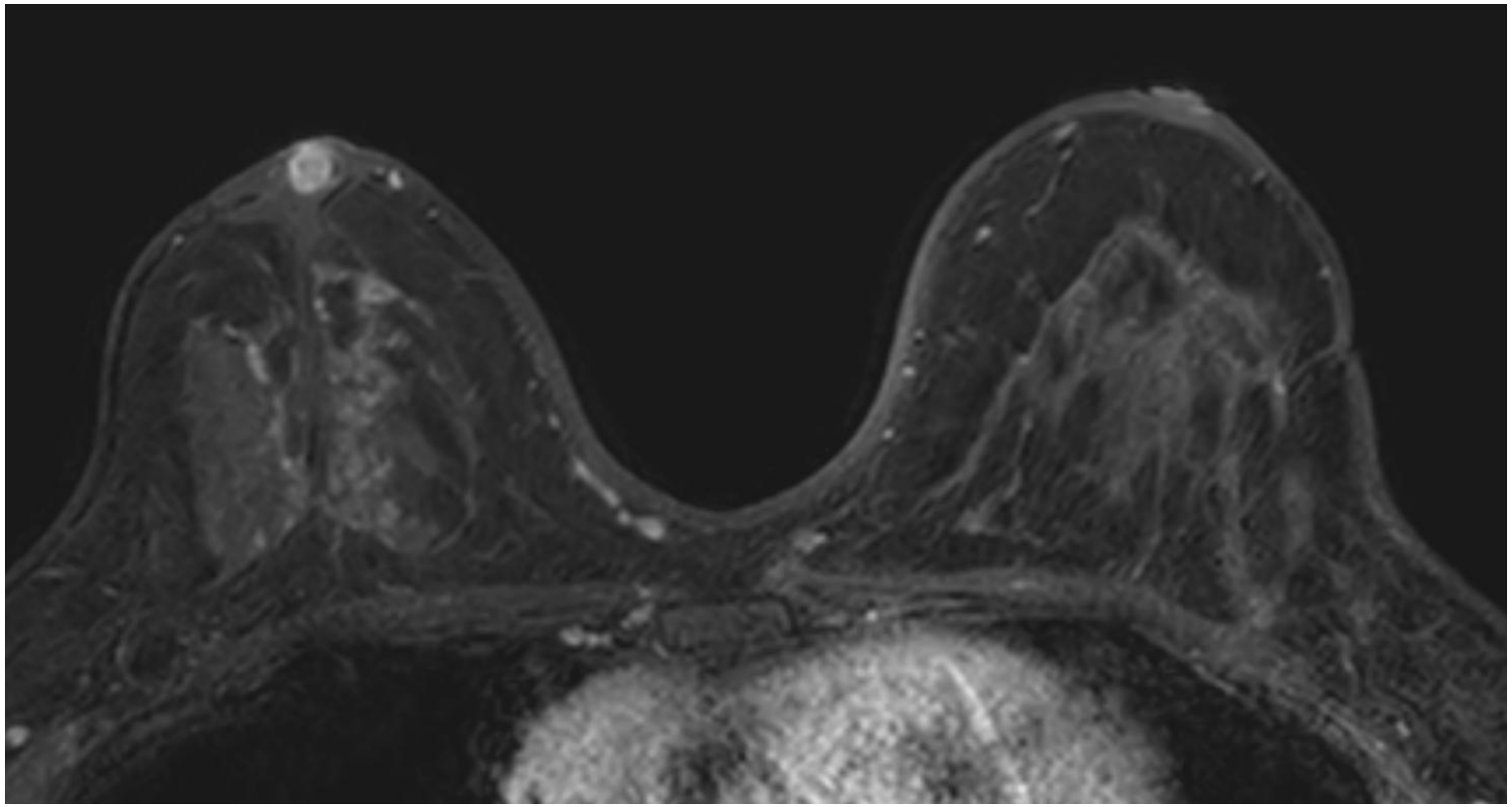
THE 57TH ANNUAL CONGRESS OF THE KOREAN SOCIETY OF ULTRASOUND IN MEDICINE

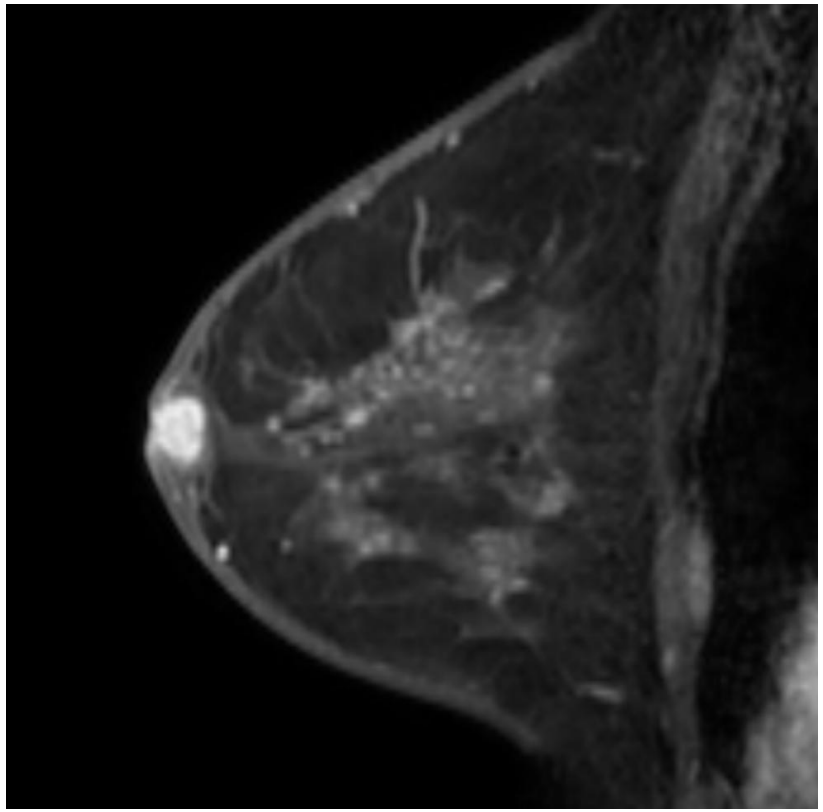
MAY 7 (THU) - **8** (FRI), **2026** I COEX, SEOUL, **KOREA**

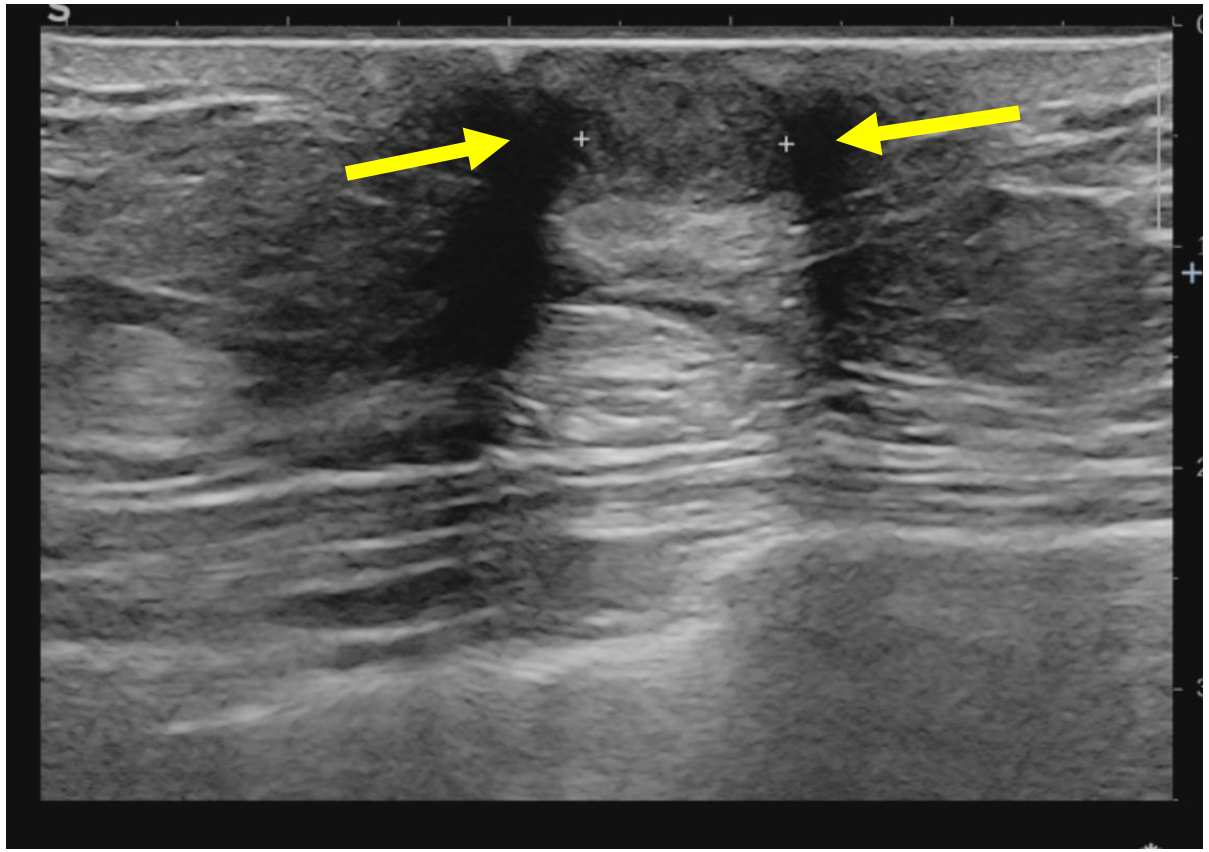
Case of the Day

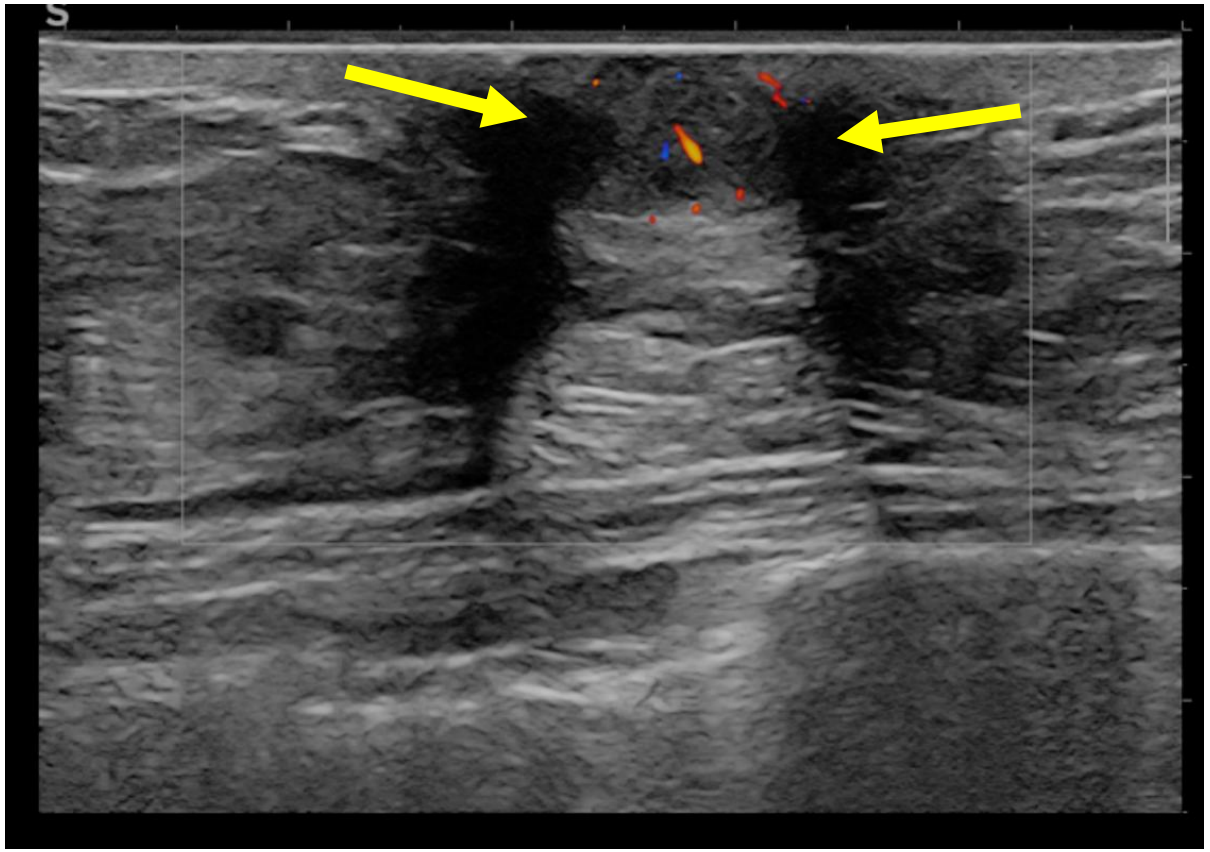
Case_BR 1

- 51/F
- Screening MRI detected right nipple mass
- s/p 2021 Left breast conserving surgery due to Invasive ductal carcinoma









Case_BR 1

1. Which of the following is the most likely disease shown above?

① Paget's disease
② Papilloma Answer (1 point)
③ Invasive lobular carcinoma
④ Fibroadenoma
⑤ Phyllodes tumor

Case_BR 1

Papilloma of nipple

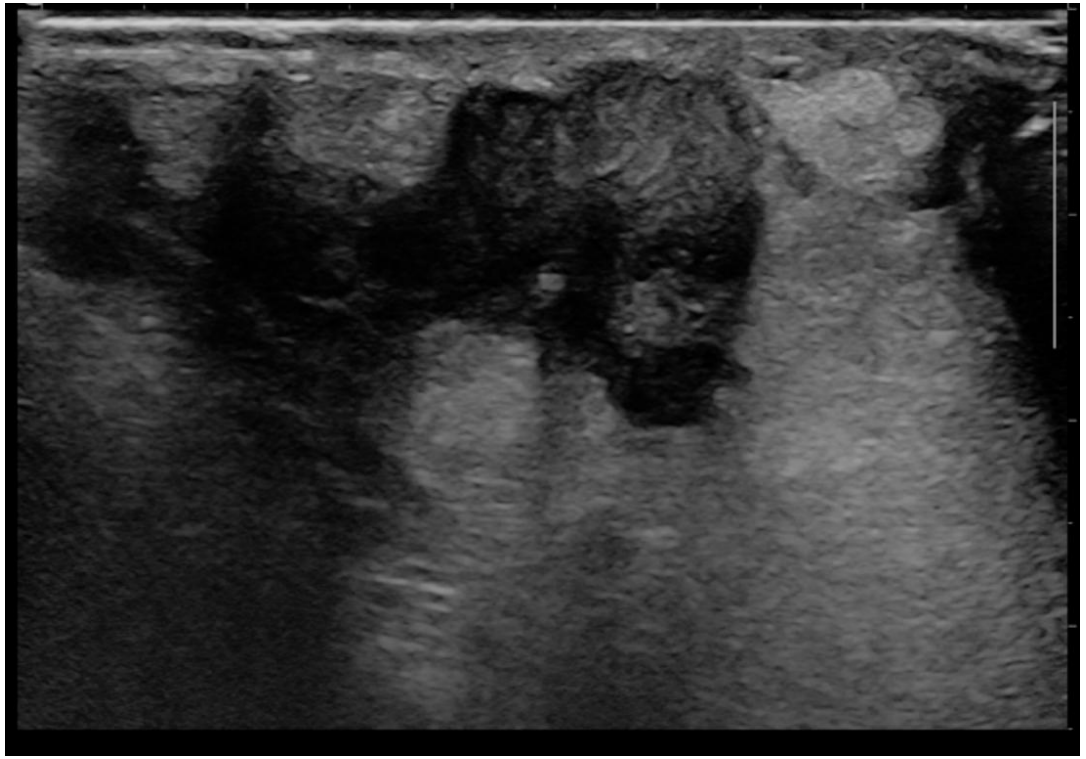
- Intraductal masses consisting of a proliferation of epithelial cells with a fibrovascular stalk
- Central papillomas typically are subareolar solitary lesions arising from the main ducts
- Peripheral papillomas involve the peripheral ducts, tend to be multiple
- Can be associated with atypia or malignancy
- Spontaneous, unilateral, and clear or bloody nipple discharge; Incidental US detected lesion
- Imaging features
  - Ultrasound
    - A well-circumscribed, complex solid or cystic intraductal mass with internal vascularity is typically seen in the breast; however, it can be difficult to delineate when located within the nipple.
  - MRI
    - A round or oval enhancing mass, high T2 signal intensity, variable enhancement kinetics

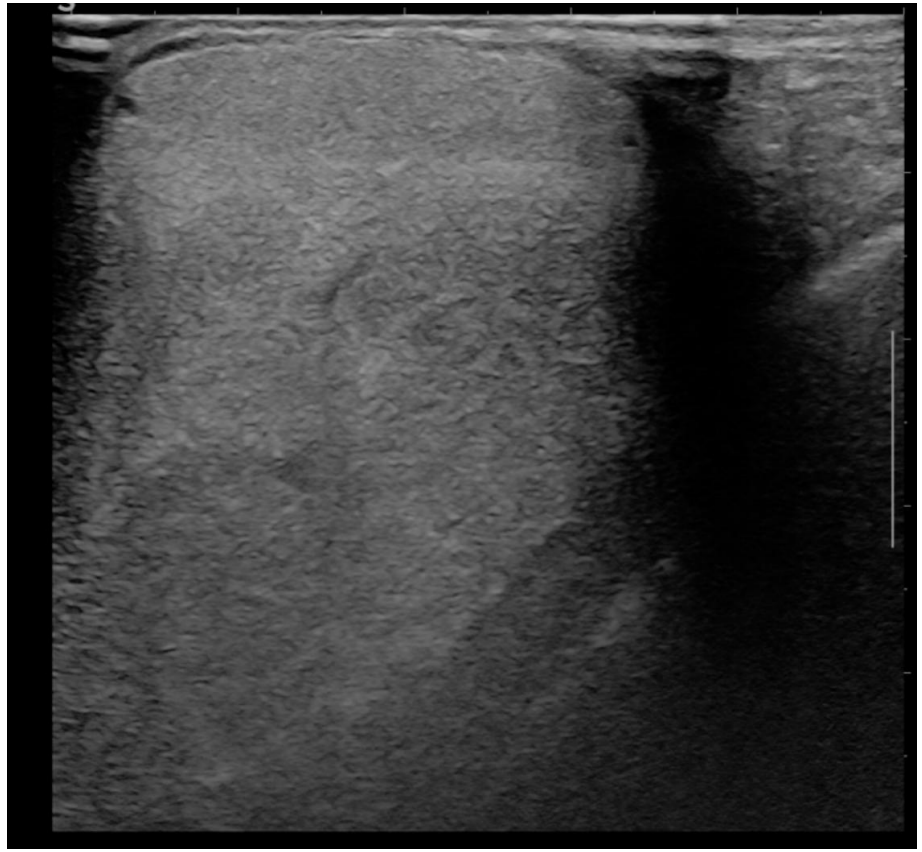
- Other benign tumors of nipple : Nipple adenoma, Syringomatous Tumor of the Nipple

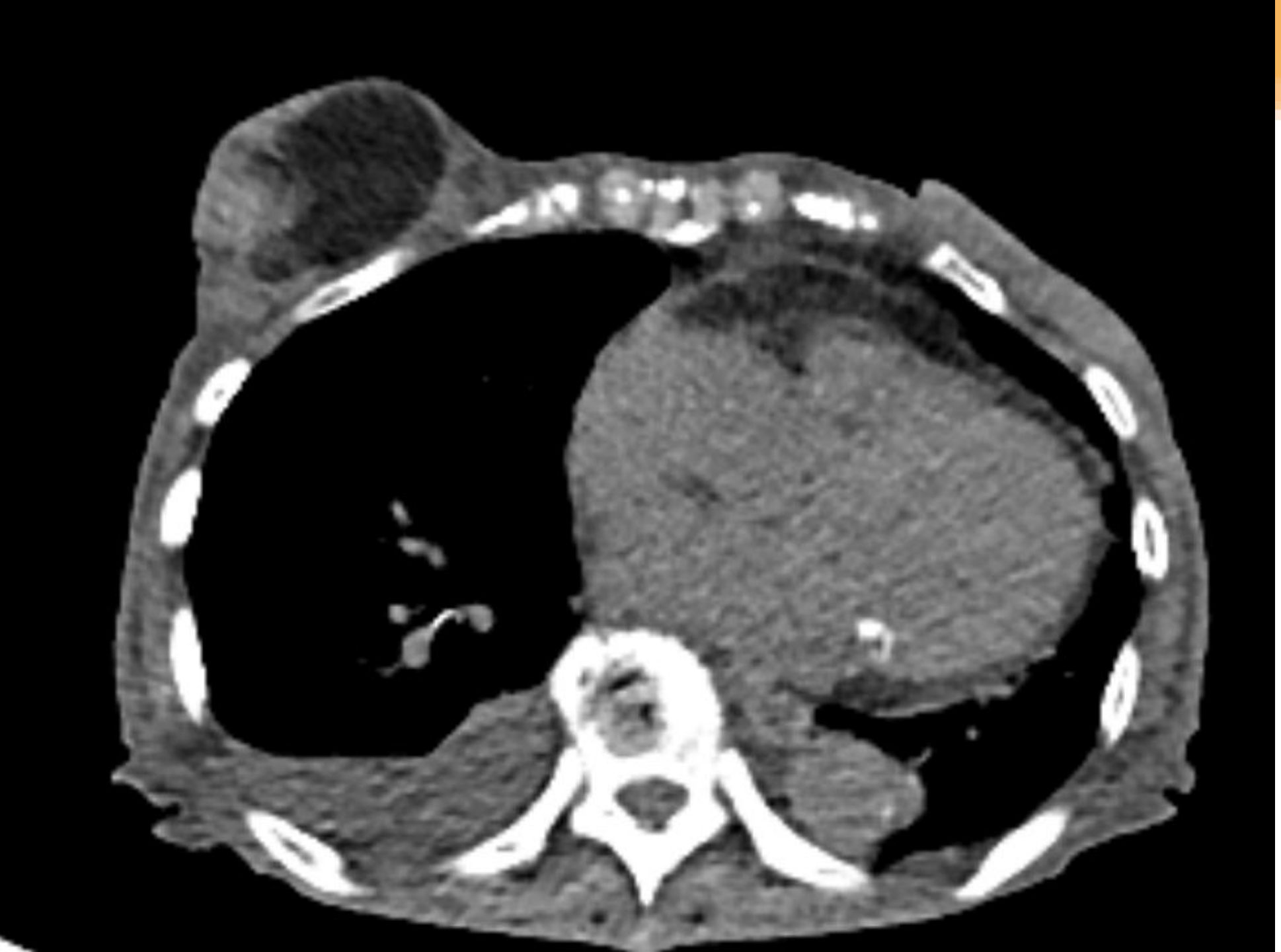
Guirguis MS, et al. Radiographics. 2024 Apr;44(4):e230113.

Case_BR 2

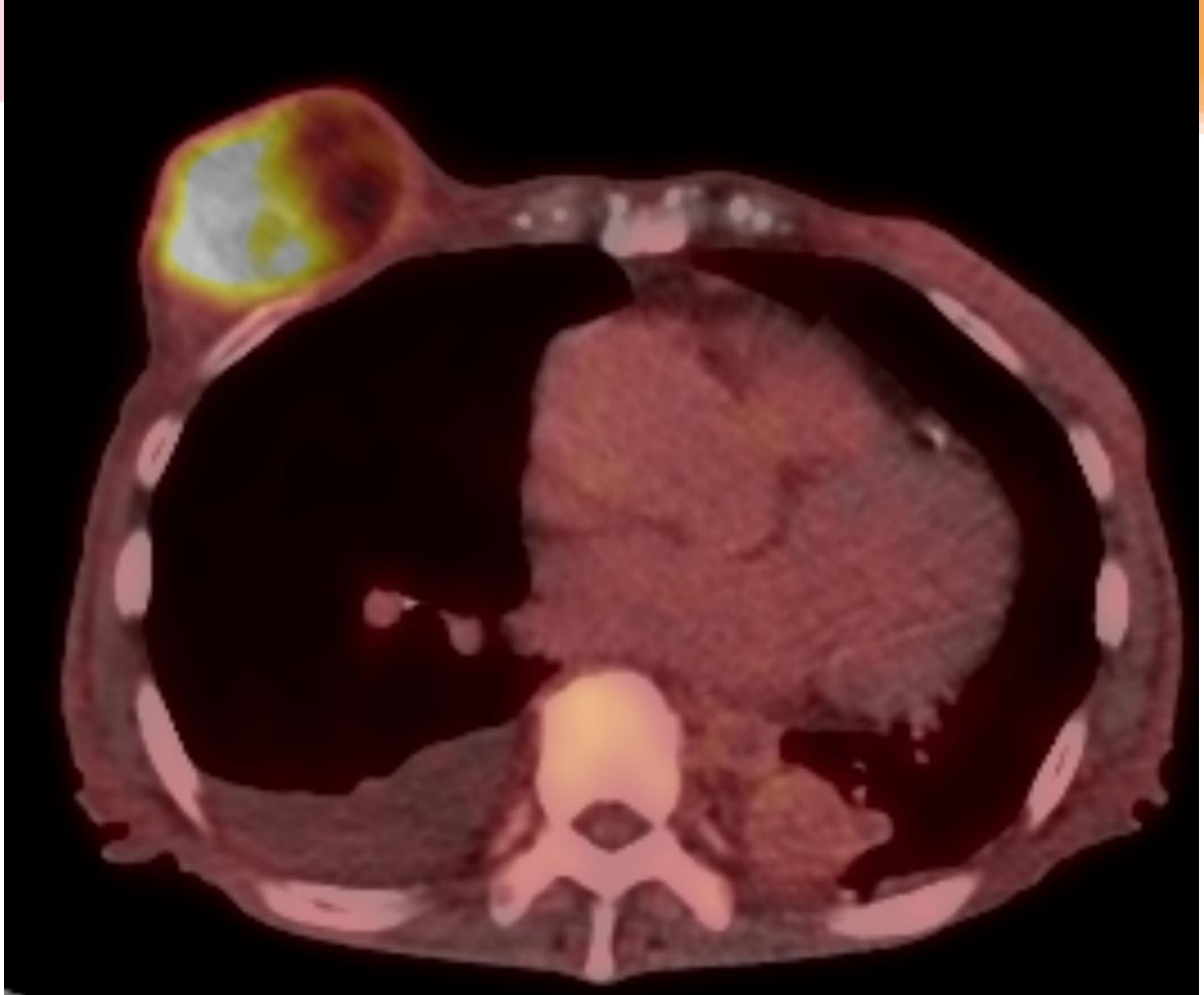
- 85/F
- Rapid growing mass in the right breast
- s/p Advanced gastric cancer surgery (11YA)







PET CT



PET CT

Case_BR 2

1. Which of the following is the most likely disease shown above?

① Invasive ductal carcinoma
② Metastasis
③ Liposarcoma Answer (1 point)
④ Angiosarcoma
⑤ Lymphoma

Case_BR 2

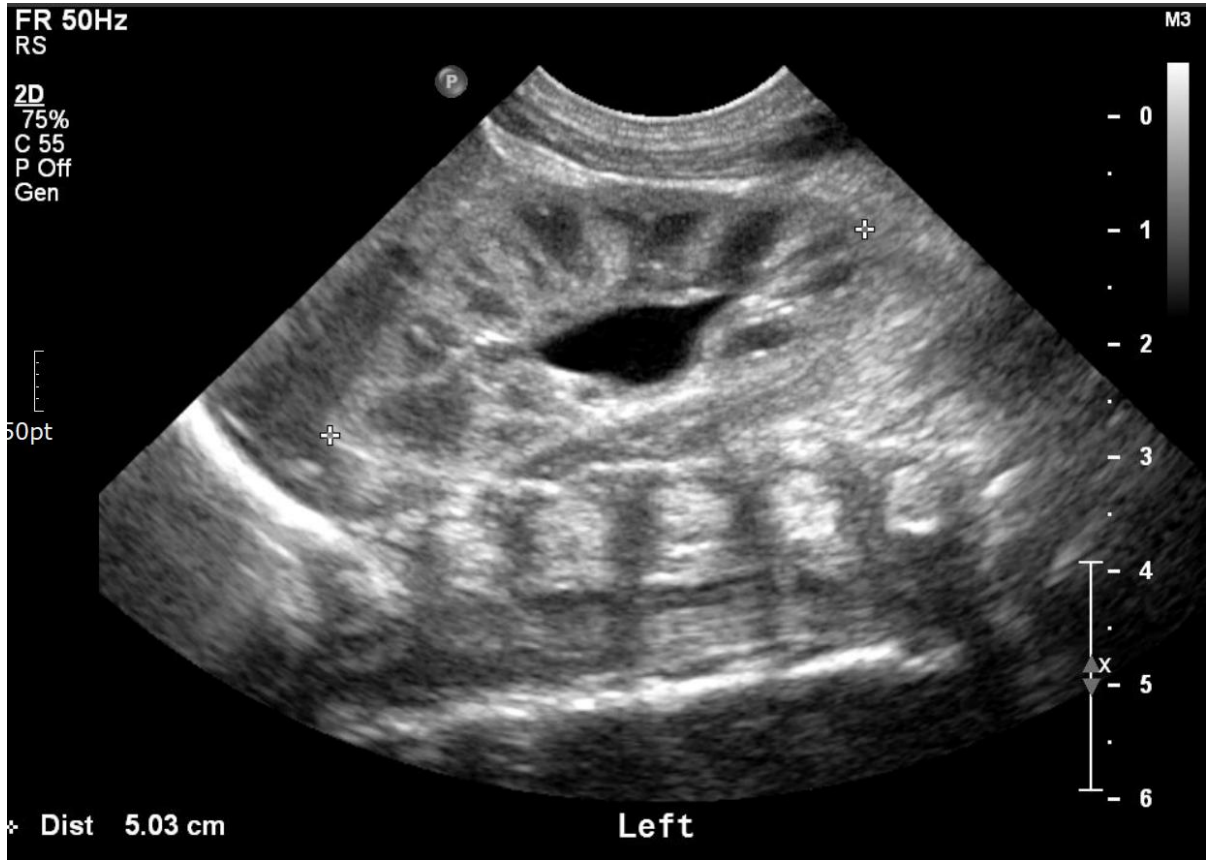
Liposarcoma

- Primary breast sarcomas: rare malignancies arising from the mesenchymal tissue of the mammary gland, less than 1% of all malignant breast tumors
- Subtypes: angiosarcoma (most common), liposarcoma, fibrosarcoma, leiomyosarcoma, sarcomas with bone and cartilage, and malignant fibrous histiocytoma
- Liposarcomas: very rare, forming only 0.3% of the sarcomas
- Grow very large, size being important prognostic factor, less than 5cm associated with a better outcome
- Imaging features
  - Mammography: an ill-defined opacity with fat and soft tissue components within
  - Ultrasound : predominantly echogenic with solid areas and vascularity within.
  - MRI: helps in characterization of the fat and soft tissue components, determination of exact extent and presence of axillary lymphadenopathy. enhancing masses with early peak contrast enhancement and gradual fading or plateauing of the contrast enhancement on kinetic analysis

Smith TB, et al. AJR Am J Roentgenol. 2012 Apr;198(4):W386-93.
Nagarajan B et al J Radiol Case Rep. 2018 Dec 31;12(12):10-15.

Case_PED 1

- O/M
- GA 37+3wks, 2.93kg, r/o pyeloectasis, both on fetal US.

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72%
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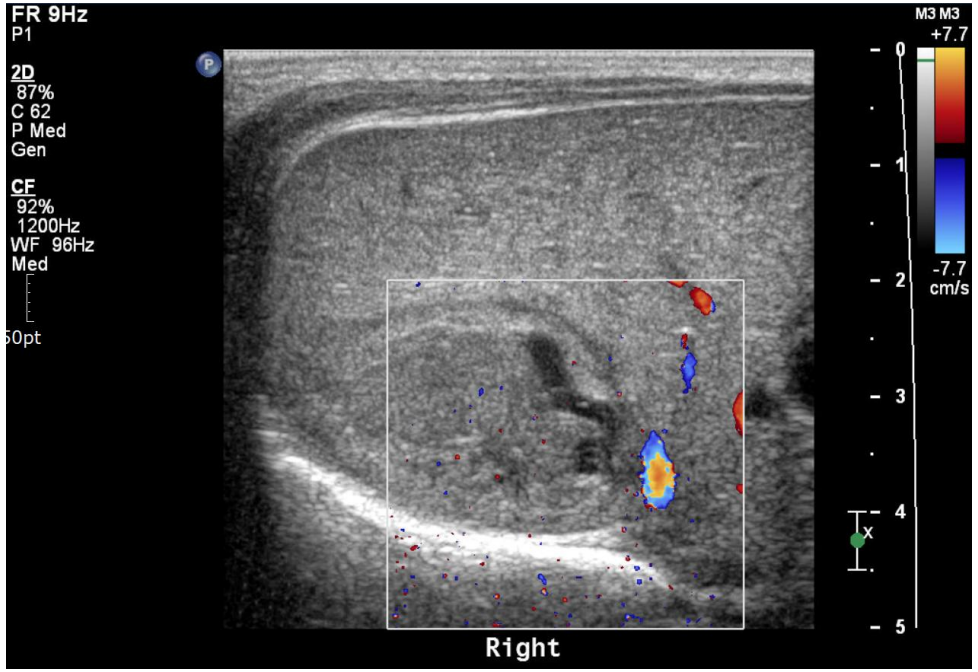
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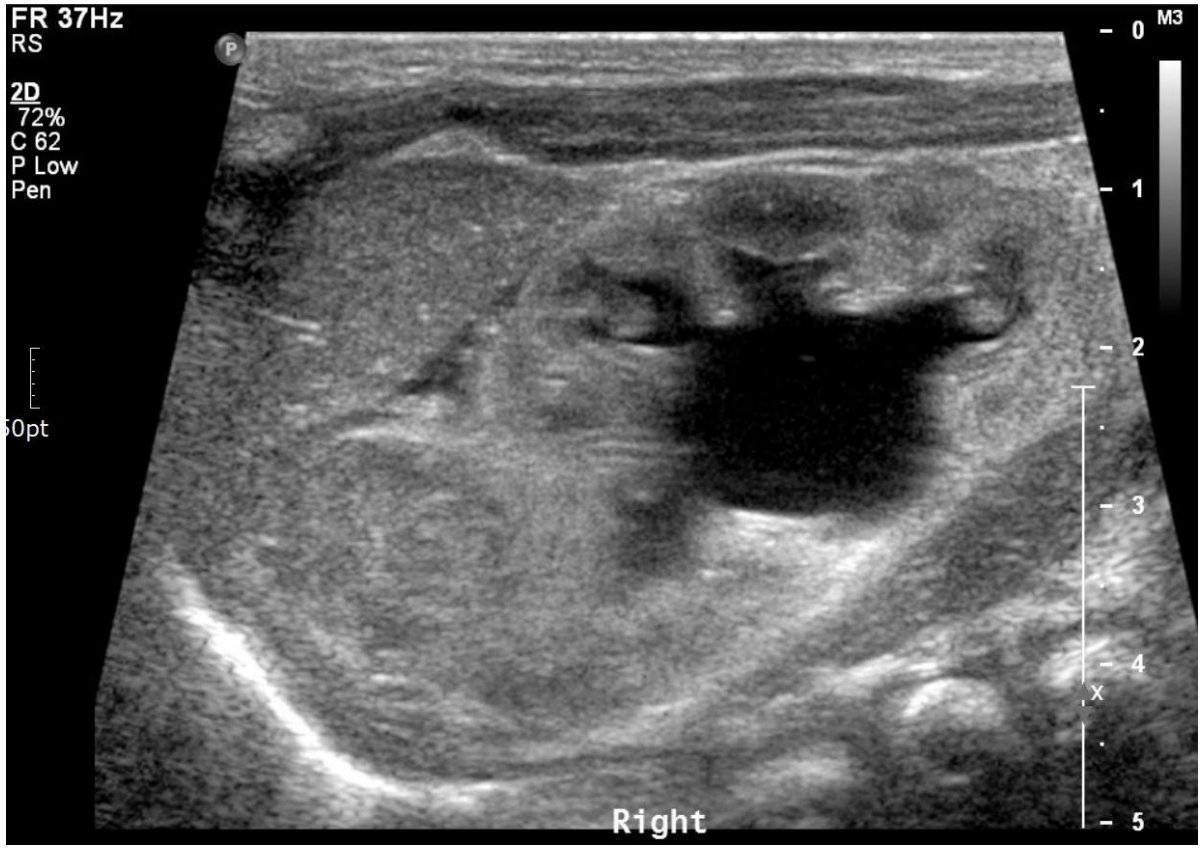
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P Low
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50pt
M3
Right

Case_PED 1

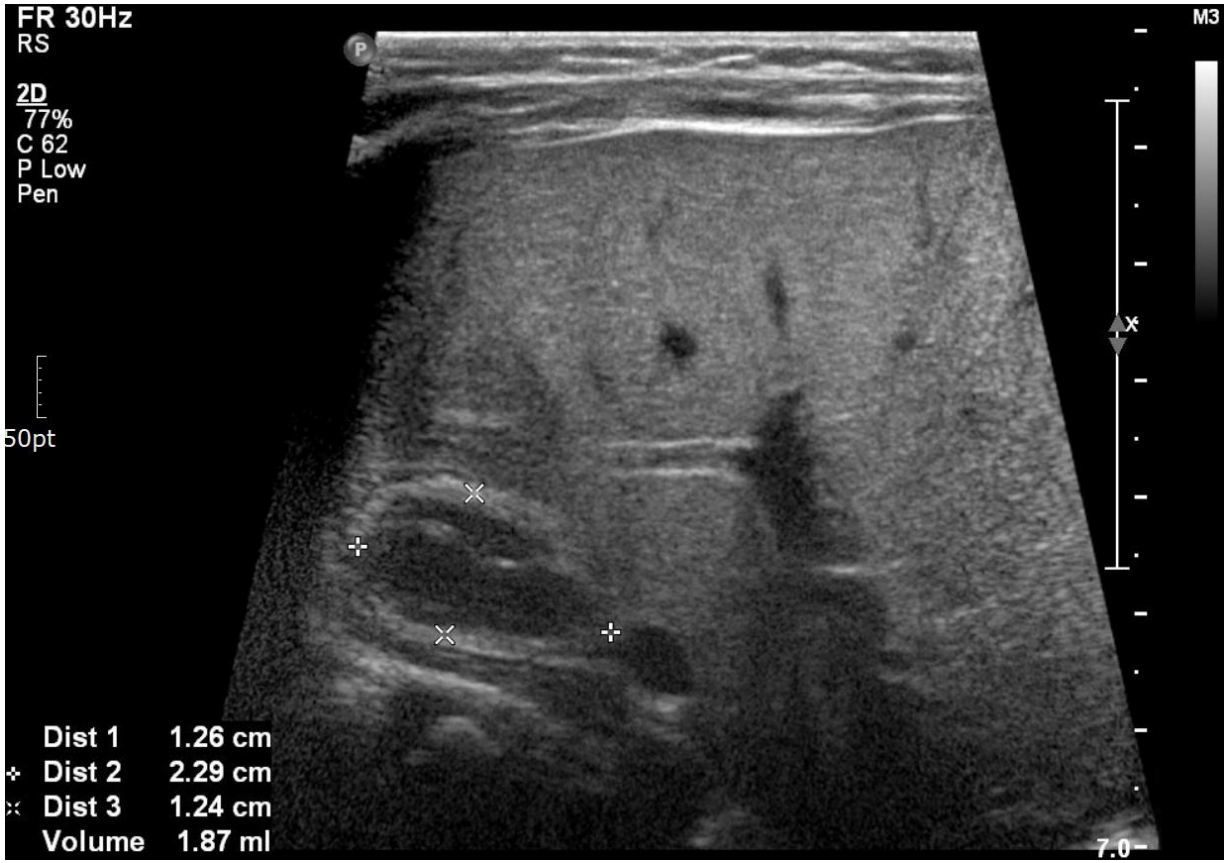
1. Which of the following is the best next step?

① Percutaneous biopsy
② Follow-up ultrasound Answer (1 point)
③ Contrast enhanced CT
④ Contrast enhanced MRI
⑤ Contrast enhanced ultrasound

Case_PED 1

Neonatal Adrenal Hemorrhage

- A common cause of suprarenal masses in newborns
- Frequently associated with perinatal stress, birth trauma, or hypoxia.
- Characteristic sonographic evolution from an initial solid, echogenic mass to a smaller, anechoic cystic lesion as the hematoma liquefies.
- Because the majority of cases resolve spontaneously over weeks to months, serial ultrasound monitoring is the gold standard for management to confirm regression and avoid unnecessary surgical intervention.

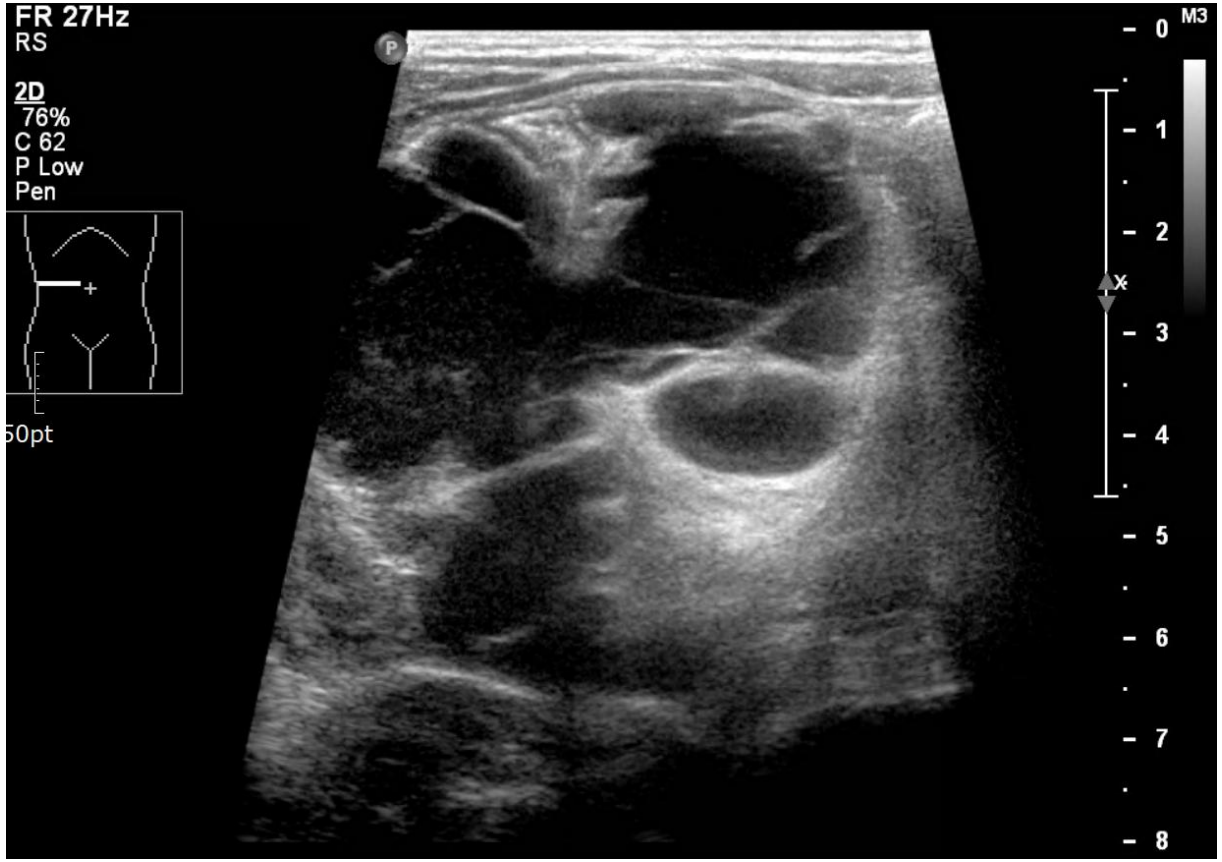


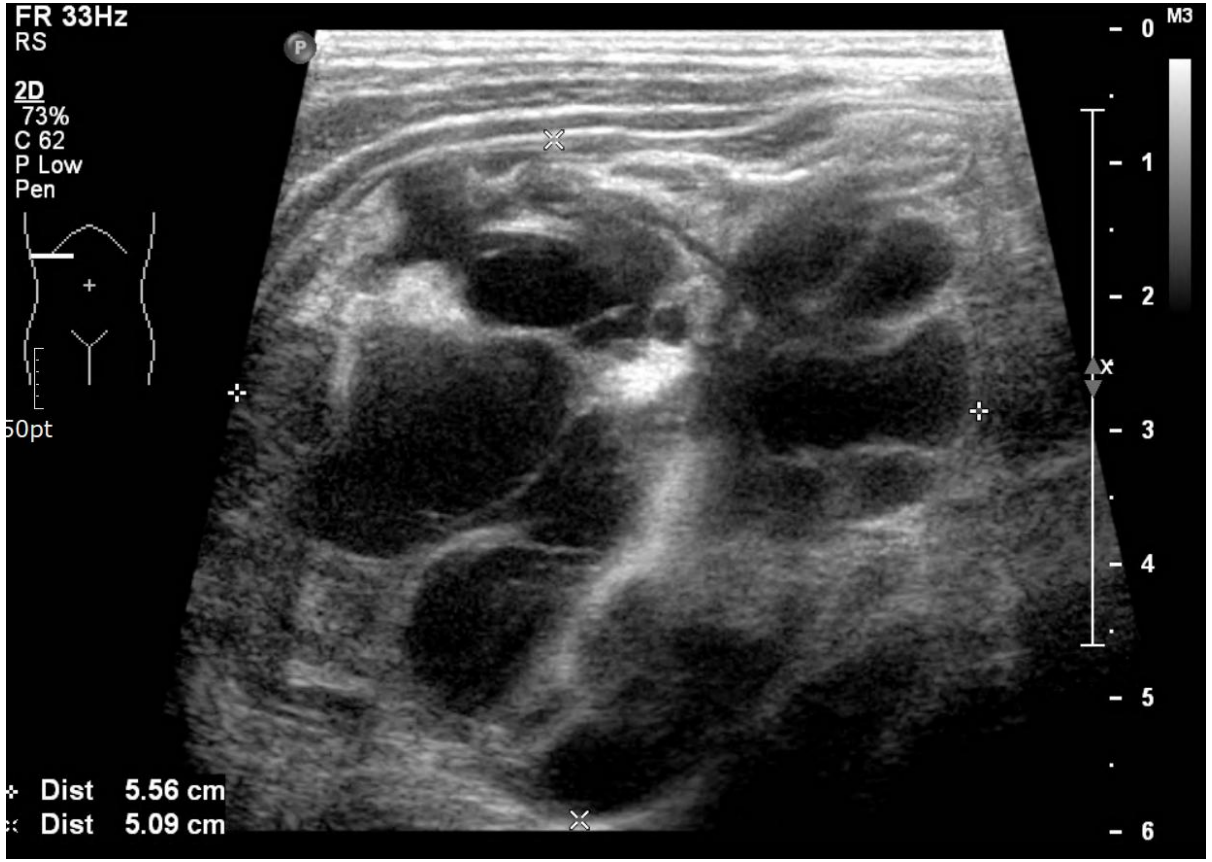
Two month later

Diagnosis	Key Ultrasound Findings (Initial)	Differential Points (Follow-up & Key)
Adrenal Hemorrhage	Solid, hyperechoic, or mixed echogenicity in the adrenal bed.	**Dramatic decrease in size** over weeks. Shows **liquefaction** (becoming anechoic/cystic) and eventually disappears or leaves behind small calcifications.
Neuroblastoma	Heterogeneous solid mass, often with **fine, stippled calcifications**.	Remains **static or grows** in size. Doppler may show internal vascularity. Elevated urinary catecholamines (VMA/HVA) are diagnostic.
Extralobar Sequestration (EPS)	Uniformly **hyperechoic**, well-defined mass, usually located in the left suprarenal area.	A **static mass** that does not change over time. Diagnosis is confirmed by identifying a systemic feeding artery (usually from the aorta) via Doppler.
Mesoblastic Nephroma	Large, solid intrarenal mass often showing a **"whorled" or "concentric ring"** appearance.	Originates from the **renal parenchyma** rather than the adrenal gland. Does not regress like a hemorrhage. The most common renal tumor in newborns.
Nephroblastomatosis	Low-echoic (hypoechoic) nodules or diffuse thickening of the **renal cortex**.	Often **bilateral**. It is a precursor to Wilms tumor. It appears as part of the kidney rather than a separate suprarenal mass.

Case_PED 2

- 6/M
- Fever (6AM-), RUQ pain(9AM-), CRP 5.04 --> r/o appendicitis, r/o acute gastrienteritis, “hard mass” on US palpation



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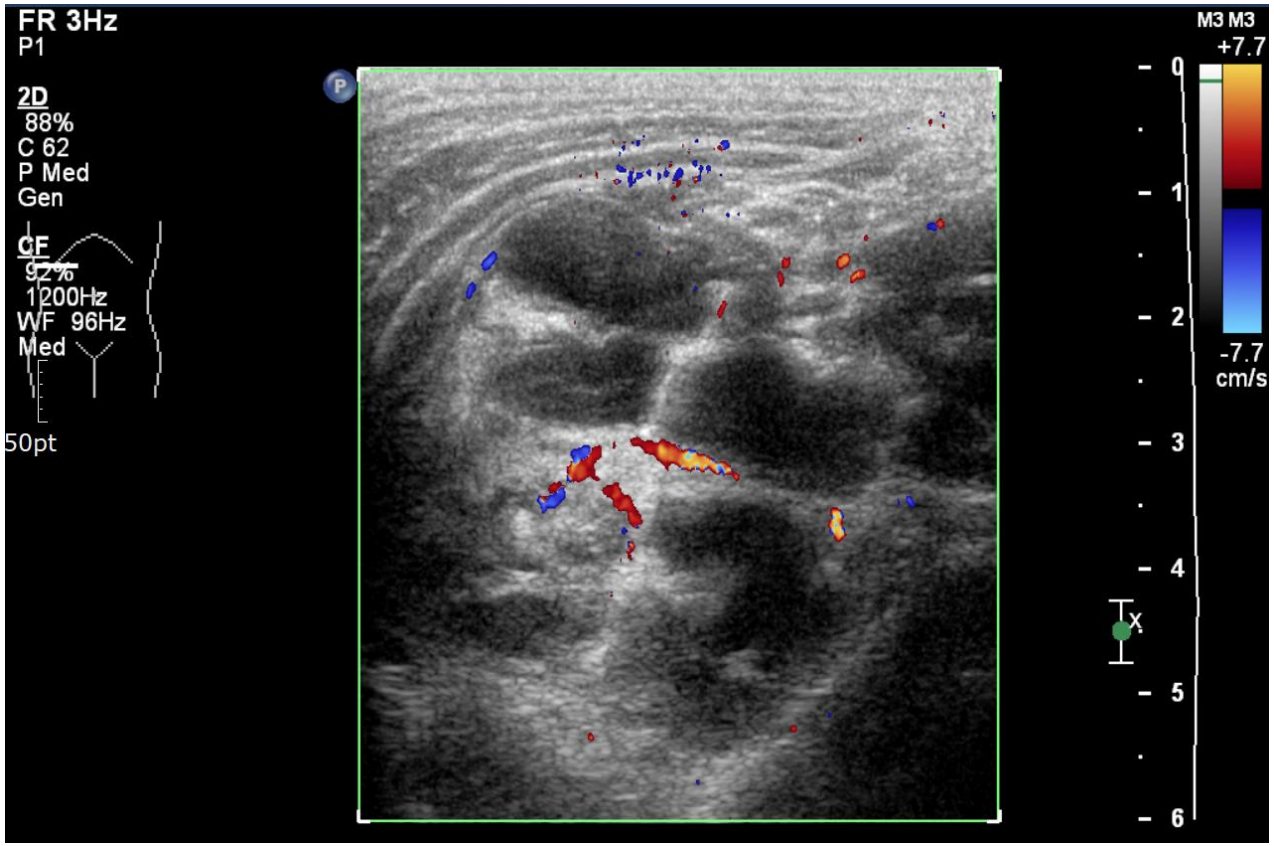
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-7.7
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Case_PED 2

1. Which of the following is the most likely disease shown above?

① Lymphangioma Answer (1 point)
② Cystic teratoma
③ Multilocular cystic nephroma
④ Mesenchymal hamartoma of the liver
⑤ Undifferentiated embryonal sarcoma of the liver

Case_PED 2

Lymphangioma

- The "Firm Mass" Paradox : a lymphangioma can feel firm or hard on palpation due to

- High Intra-cystic Tension: Fluid under high pressure within multiple small compartments makes the lesion non-compressible.
- Massive Size: Large lesions increase intra-abdominal pressure, mimicking a solid tumor.

- Key Sonographic Findings

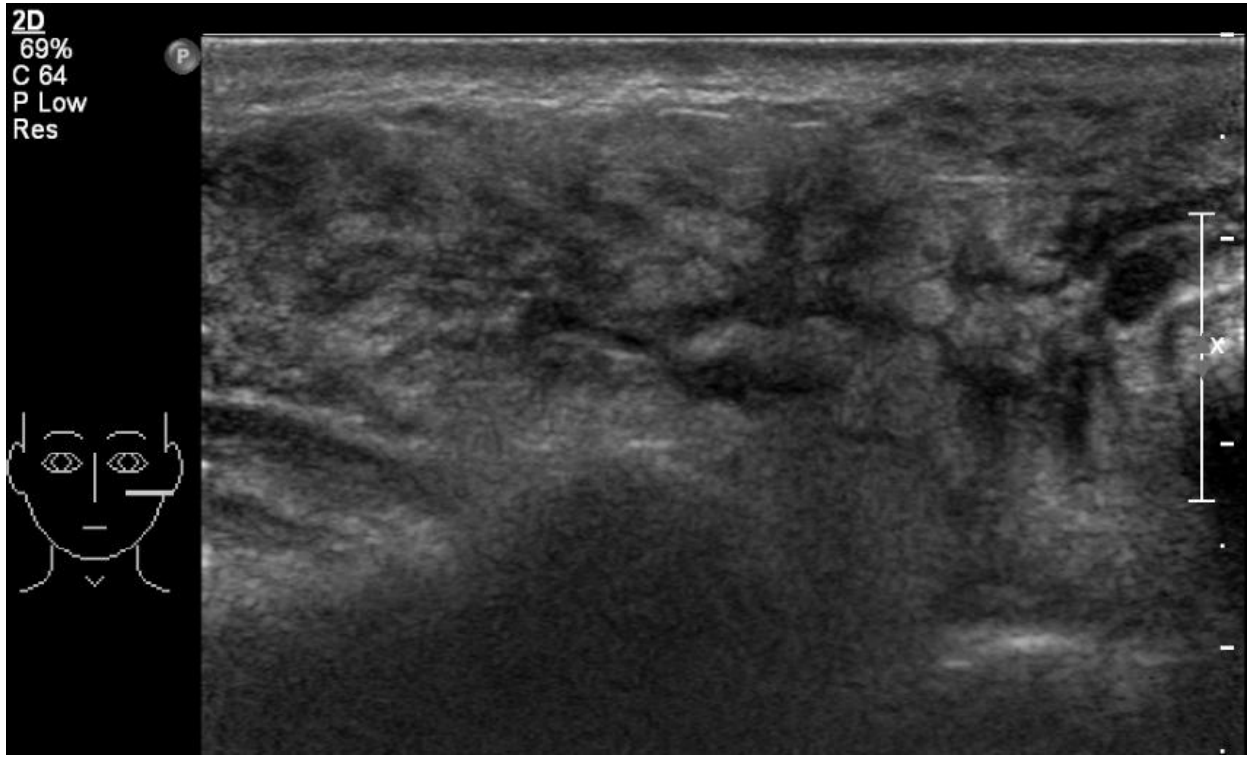
- Architecture: A well-circumscribed, multi-septated (multilocular) cystic mass with characteristically thin, linear septations.
- The "Molding" Sign: It tends to creep and envelop adjacent vessels and bowel loops without causing obstruction, unlike the mass effect seen in solid tumors.
- Echogenicity: Typically anechoic, but can show low-level debris if internal hemorrhage or infection occurs.

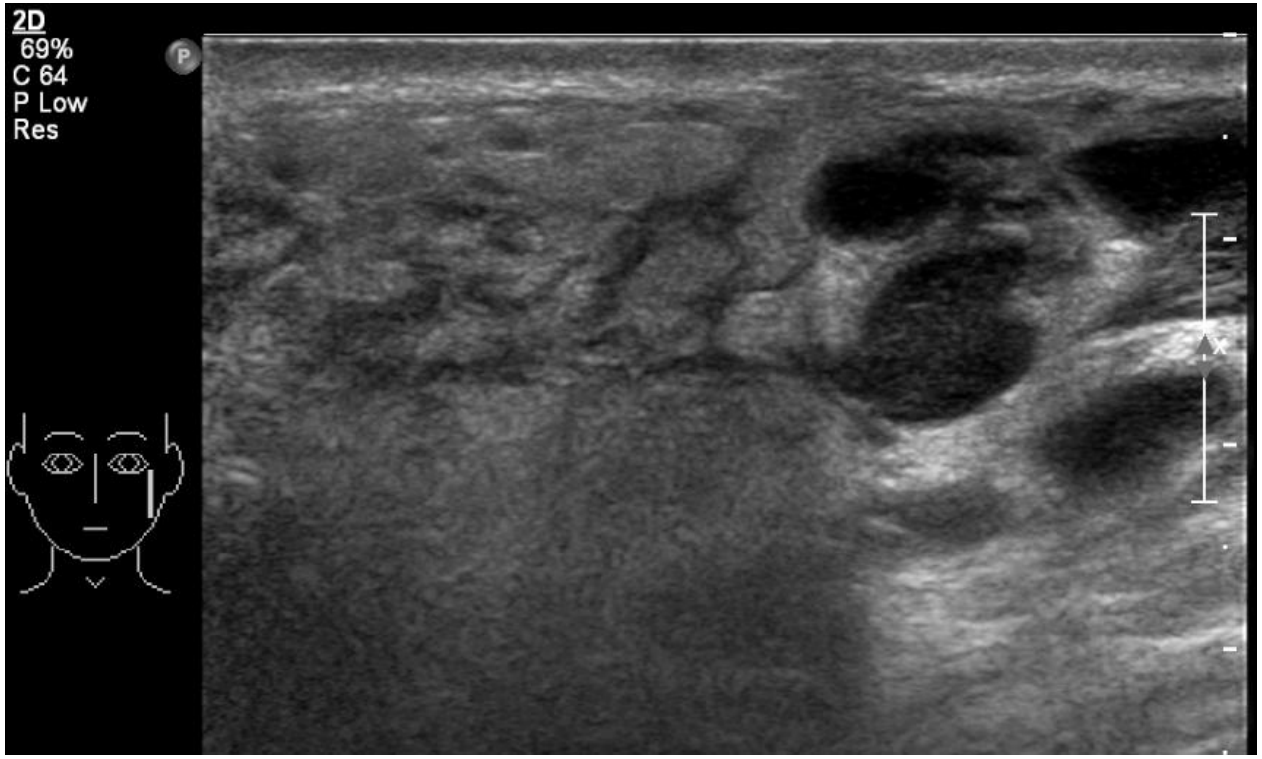
- Differential: Lymphangioma vs. Teratoma

- Lymphangioma: Purely cystic with thin septa; no fat or calcification.
- Teratoma: Usually a complex, mixed-echogenicity mass containing fat (hyperechoic) and calcifications (with acoustic shadowing).

Case_HN 1

- 42/M
- Long standing hard mass at Lt parotid area, with multiple LN enlargement



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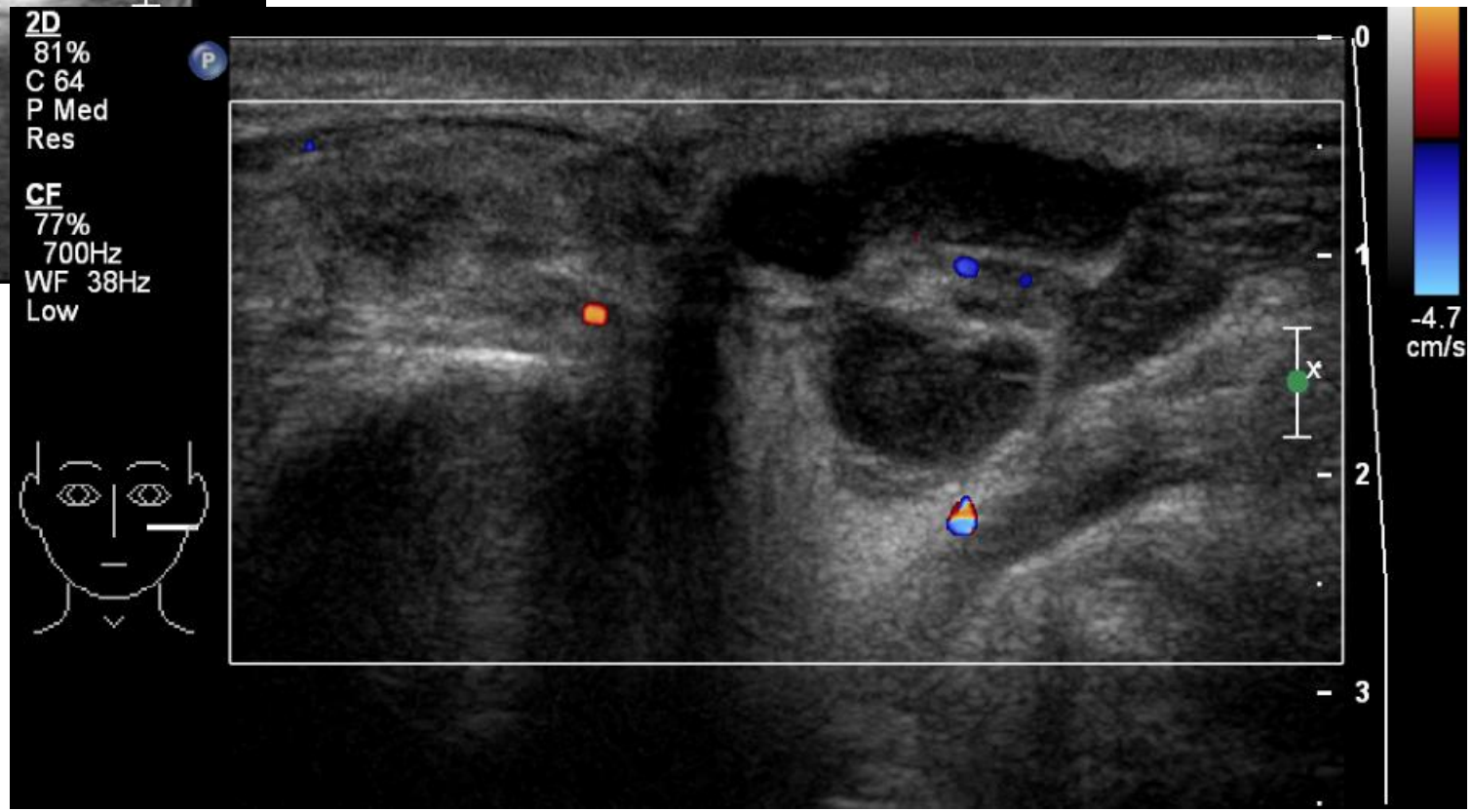
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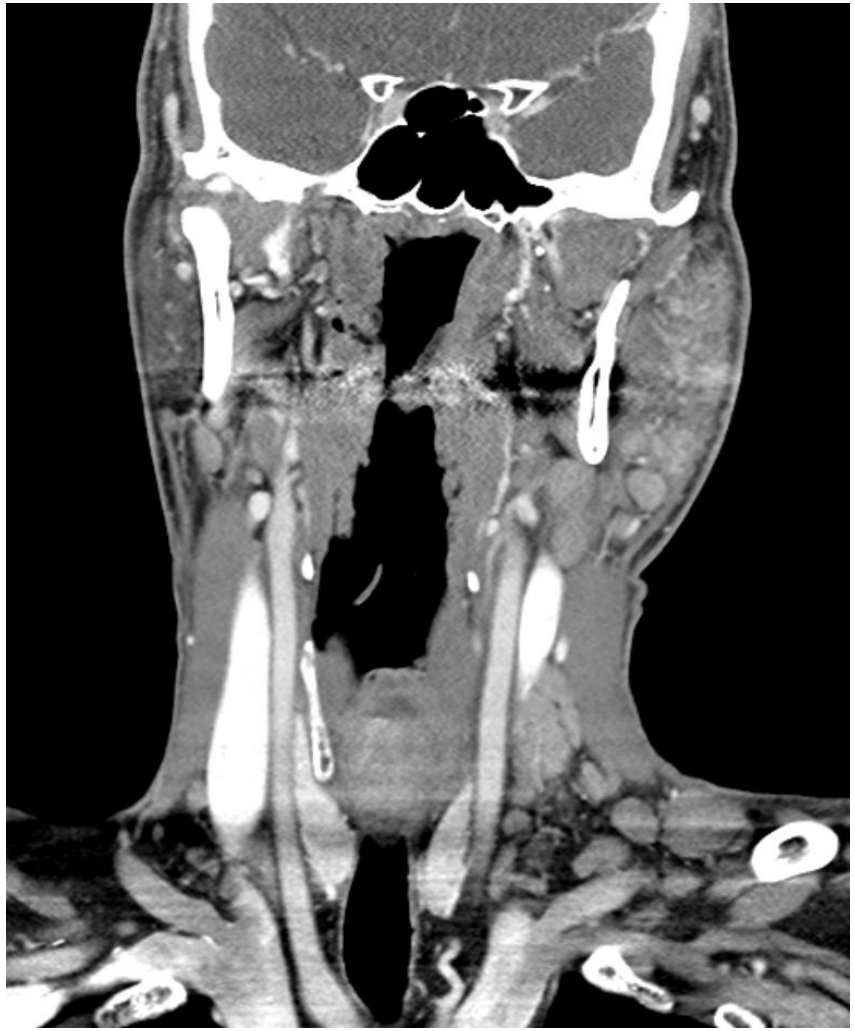


Case_HN 1

1. Which of the following is the most likely disease shown above?

① Lymphoma
② Metastasis
③ Kimura's disease Answer (1 point)
④ Acute sialadenitis
⑤ IgG4-related disease

Case_HN 1

Kimura's Disease

; benign chronic inflammatory condition of unknown etiology. It predominantly affects **young Asian males** (typically in their 2nd to 4th decades). It most commonly involves the head and neck region, specifically the **parotid glands**, submandibular glands, and regional lymph nodes.

*** The Clinical Triad**
Painless subcutaneous masses (usually in the parotid or submandibular regions).
Peripheral blood eosinophilia (often >20%).
Markedly elevated serum IgE levels.

Imaging Features: The "Infiltrative" Pitfall

- **Ultrasound (US):** Often shows **ill-defined, infiltrative hypoechoic areas** within the parotid gland. The normal glandular architecture is replaced by a "mottled" or "edematous" texture rather than a discrete capsule. Regional lymph nodes are typically enlarged but often maintain a preserved fatty hilum.
- **CT/MRI:** More clearly identifies the **soft tissue mass**. On CT, it presents as an enhancing, often ill-defined mass. MRI reveals the extent of the infiltration more accurately, typically showing high T2 signal intensity due to the high vascularity and inflammatory components.

Case_HN 1

Infiltrative lesion in vicinity to parotid gland on ultrasound

1. Lymphoproliferative Disorders
Lymphoma (Nodal or MALT): This is the most notorious for presenting as a non-specific, hypoechoic, infiltrative process. On US, it may appear as "dirty" fat or ill-defined reticulation, mimicking cellulitis or edema. The **presence of multiple, rounded, hypoechoic regional lymph nodes** with lost fatty hila is the key. If US shows "edema" but the clinical suspicion is high, CT is mandatory to identify the true tumor bulk.

2. Acute Inflammatory & Infectious Processes
Acute Bacterial Sialadenitis with Periparotid Cellulitis: This presents with diffuse glandular enlargement, increased vascularity, and "stranding" of the subcutaneous fat. **Clinical presence of fever, exquisite tenderness, and purulent discharge** from Stensen's duct can be the clue. If a discrete fluid collection (abscess) is absent, the US appearance is purely infiltrative.

Bacterial sialadenitis. Knopf, A. (2019). Sonography of Major Salivary Glands. In: Welkoborsky, H., Jecker, P. (eds) Ultrasonography of the Head and Neck. Springer, Cham. https://doi.org/10.1007/978-3-030-12641-4_11

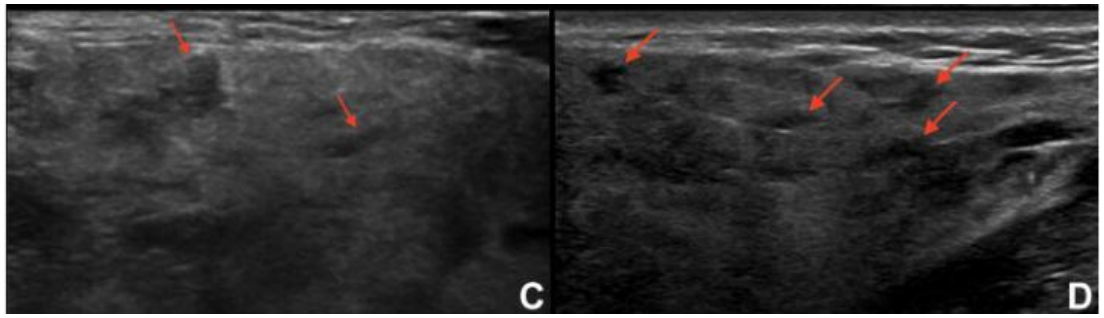
Infiltrative lesion in vicinity to parotid gland on ultrasound

3. Systemic & Autoimmune Conditions

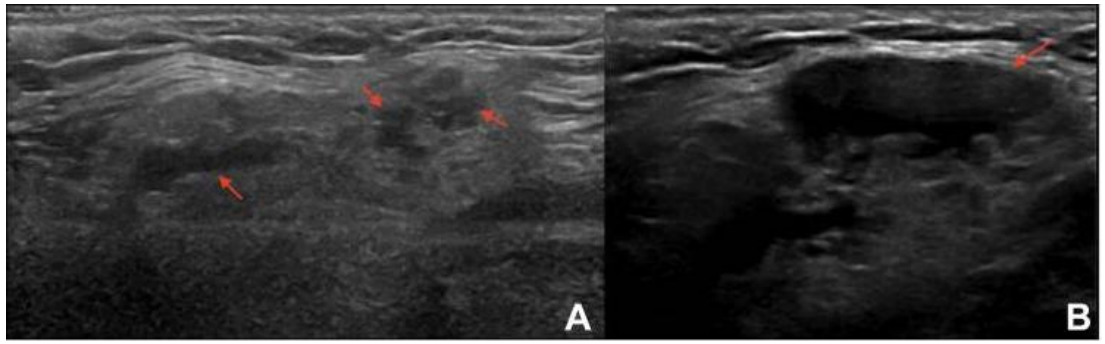
Sjögren's Syndrome: In its early or active phases, the gland may show diffuse, mottled hypoechogenicity. While often described as "punctate," it can appear infiltrative if there is significant reactive edema.

IgG4-Related Disease: Often presents as painless, firm, bilateral swelling. The infiltrative appearance on US is caused by intense lymphoplasmacytic infiltration and fibrosis.

Kimura Disease: Typically presents in the parotid/submandibular region with associated lymphadenopathy. The ill-defined margins and peripheral eosinophilia are classic hallmarks.



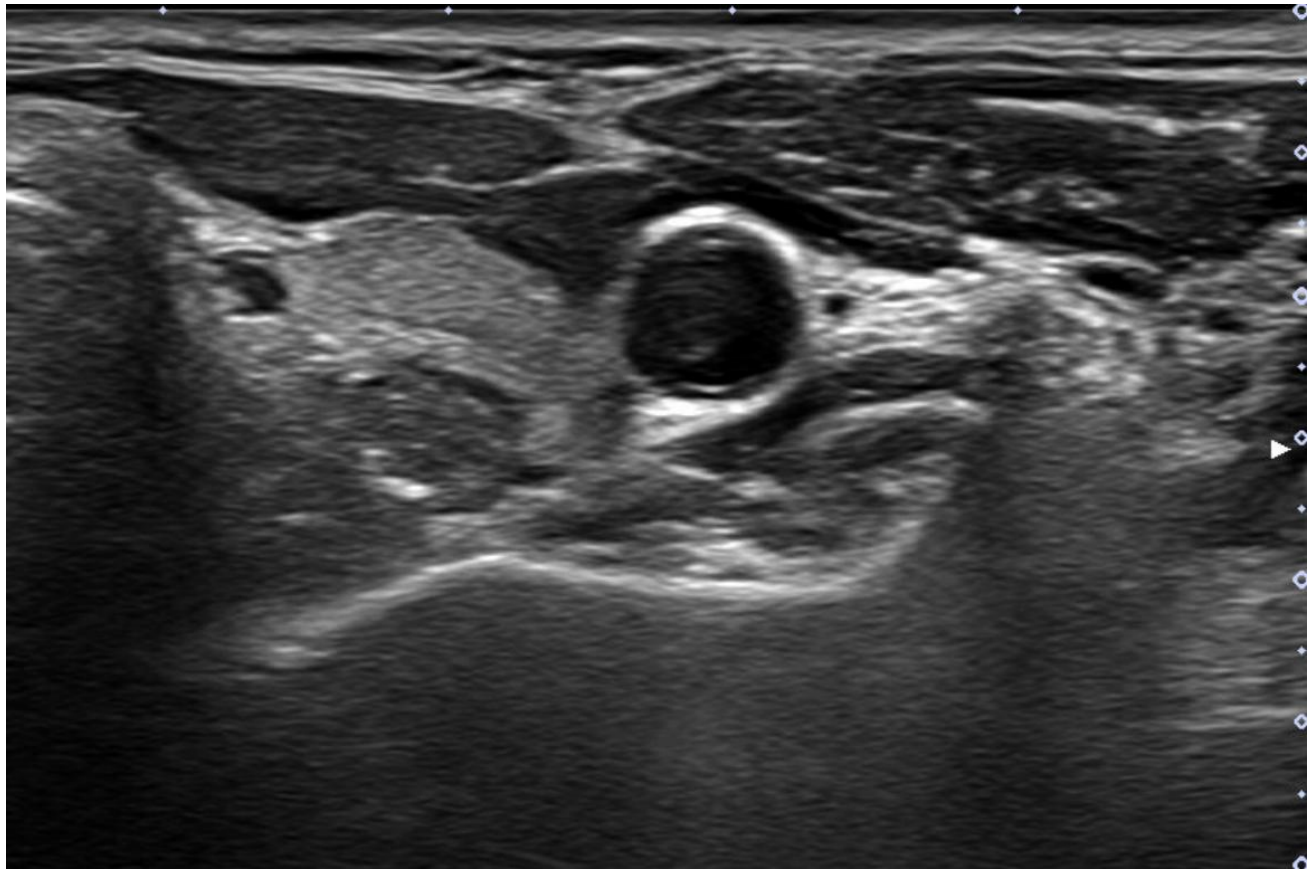
Sjögren's Syndrome. Open Access Rheumatol 2022 Sep 1;14:147–10.

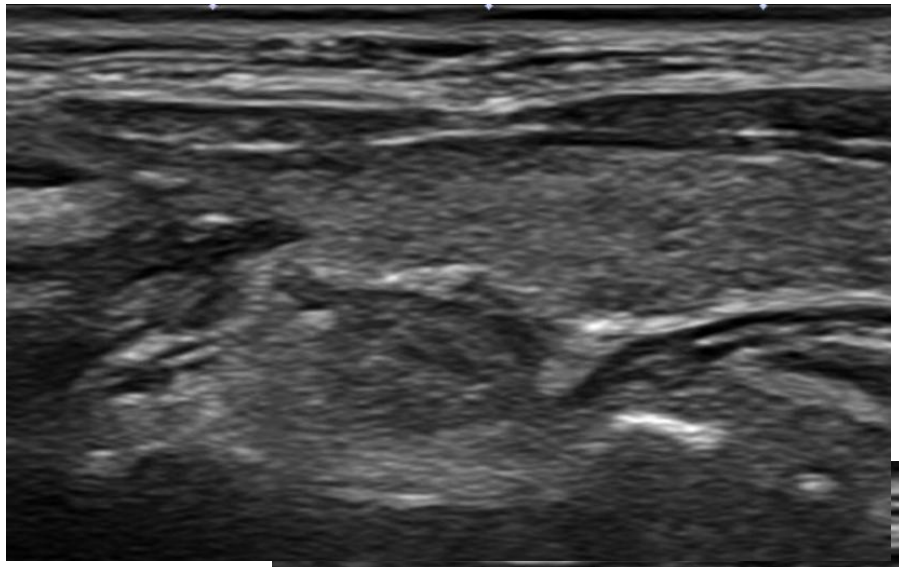


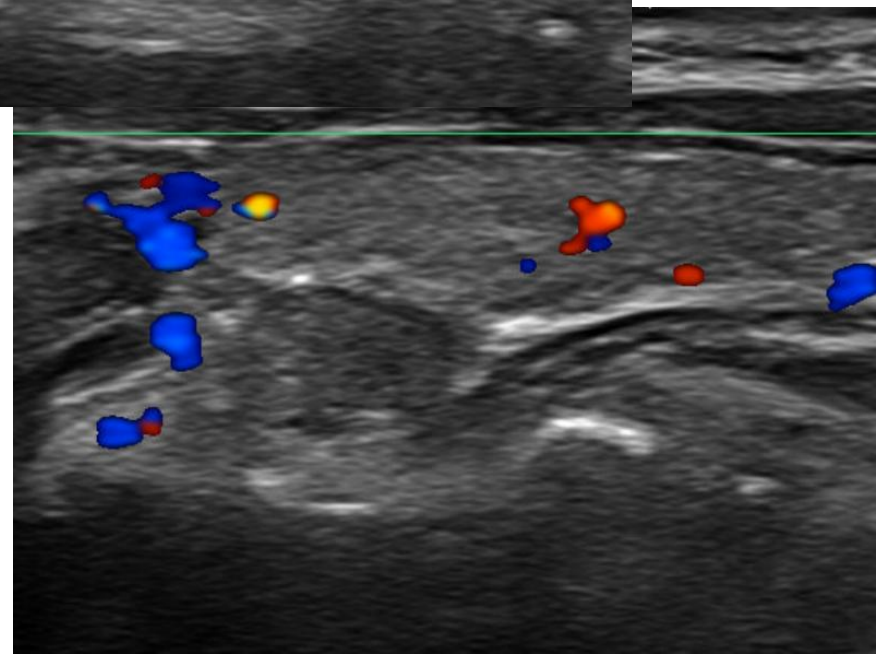
IgG4-related disease. Open Access Rheumatol 2022 Sep 1;14:147–10.

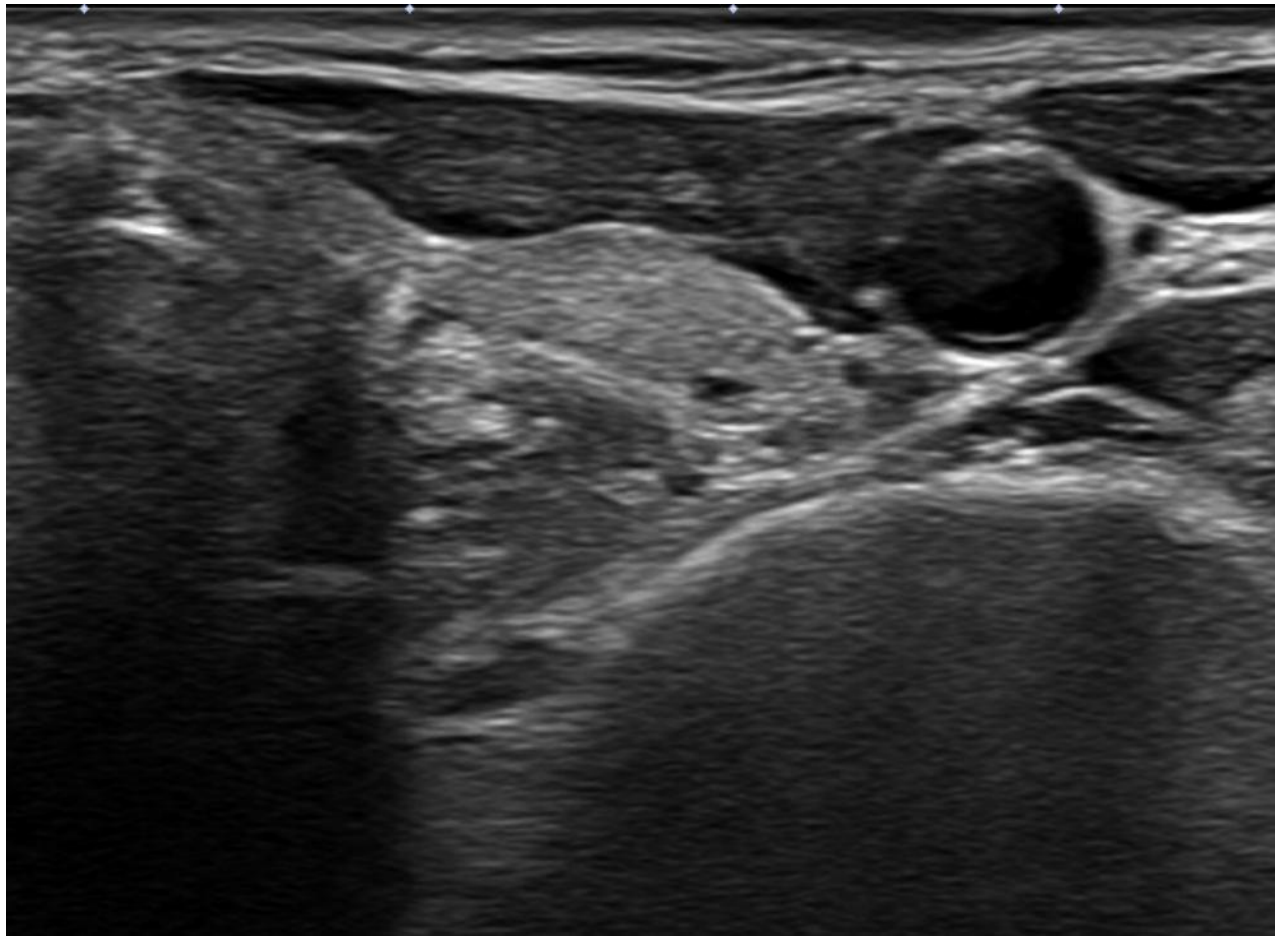
Case_HN 2

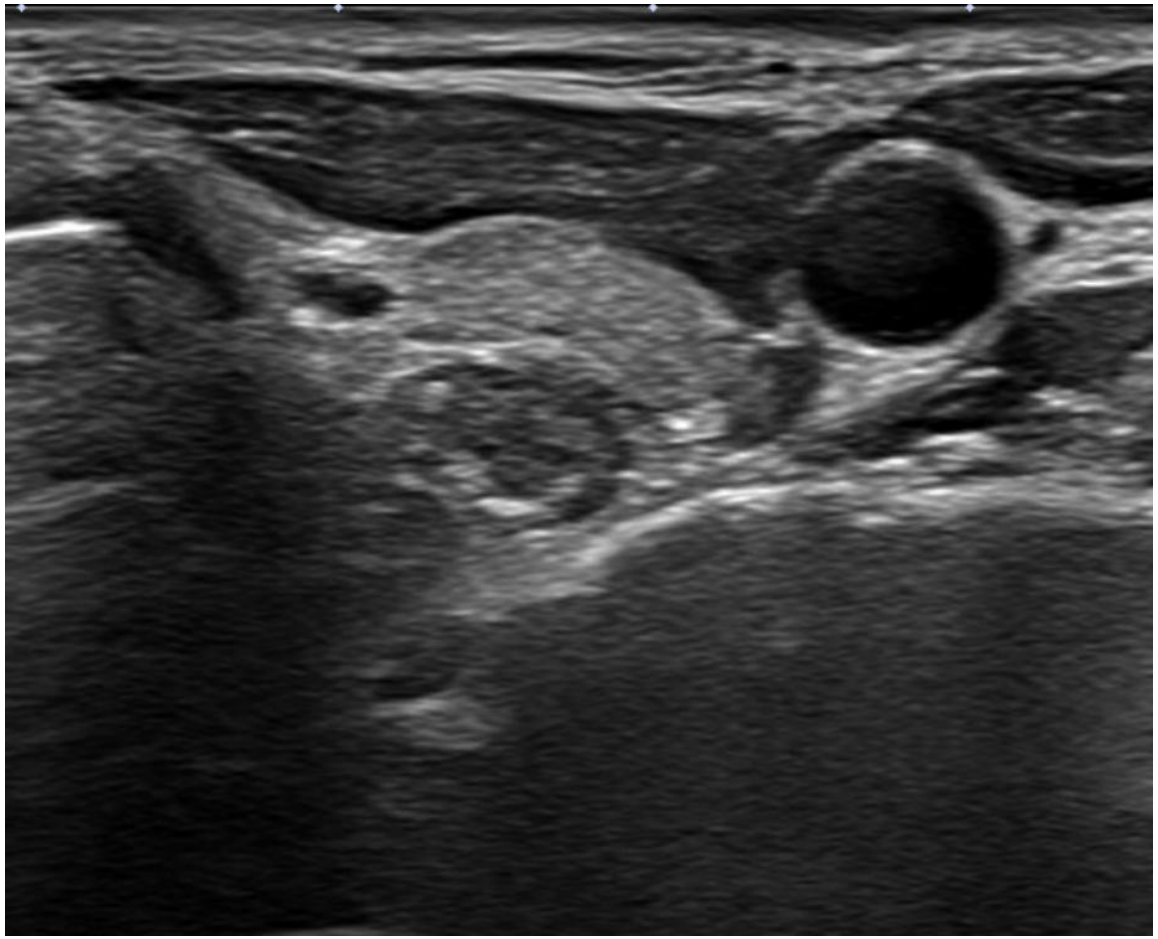
- 61/M
- Thyroid nodule on screening ultrasound











Case_HN 2

1. Which of the following is the best next step?

① Neck CT
② Neck MRI
③ Endoscopy
④ Ultrasound follow up
⑤ Dynamic water-swallow maneuver Answer (1 point)

. 2016 Jul 8;44(6):333-8.

Case_HN 2

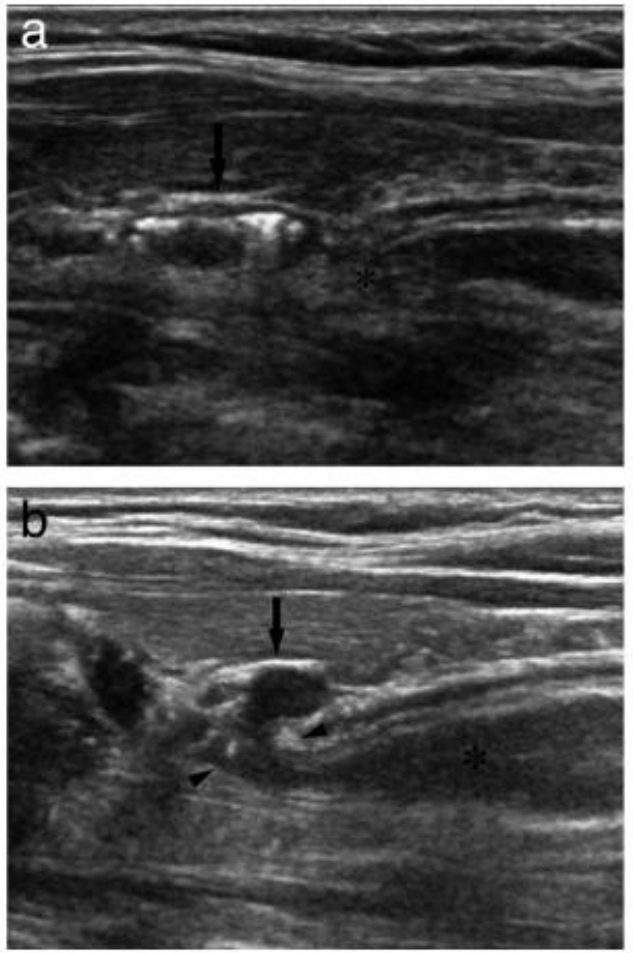
Esophageal Diverticulum (Zenker's)

- **The Pitfall:** Frequently mimics a **suspicious thyroid nodule** or abscess due to its location (usually posterior to the left thyroid lobe).

- **US Appearance**

- A well-defined mass containing **hyperechoic foci (gas)** with characteristic "dirty" acoustic shadowing.
- The Layered Pattern: Unlike thyroid lesions, it shows a **"gut signature"** (alternating hyperechoic/hypoechoic wall layers).
- **Dynamic Water-Swallow Maneuver** can show movement of the diverticulum walls and the rapid influx of echogenic air-bubbles (the "swirl sign") into the pouch.

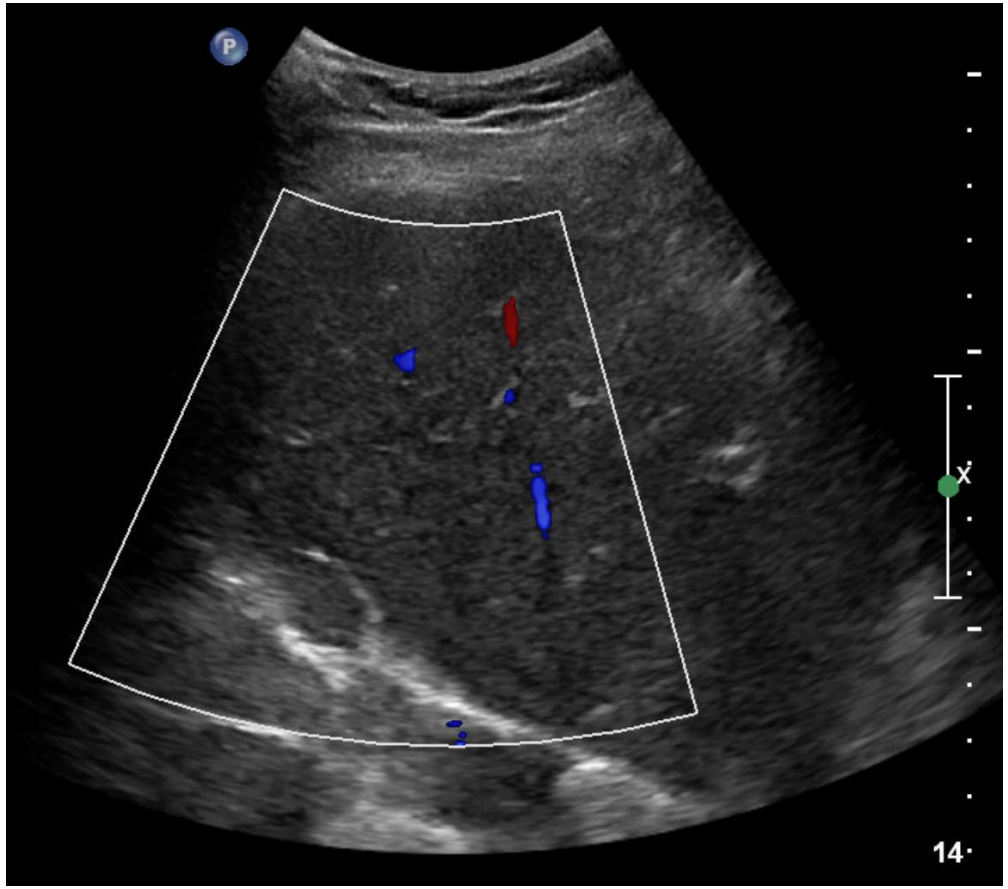
***** This real-time internal motion confirms the connection to the esophageal lumen and prevents unnecessary FNA!

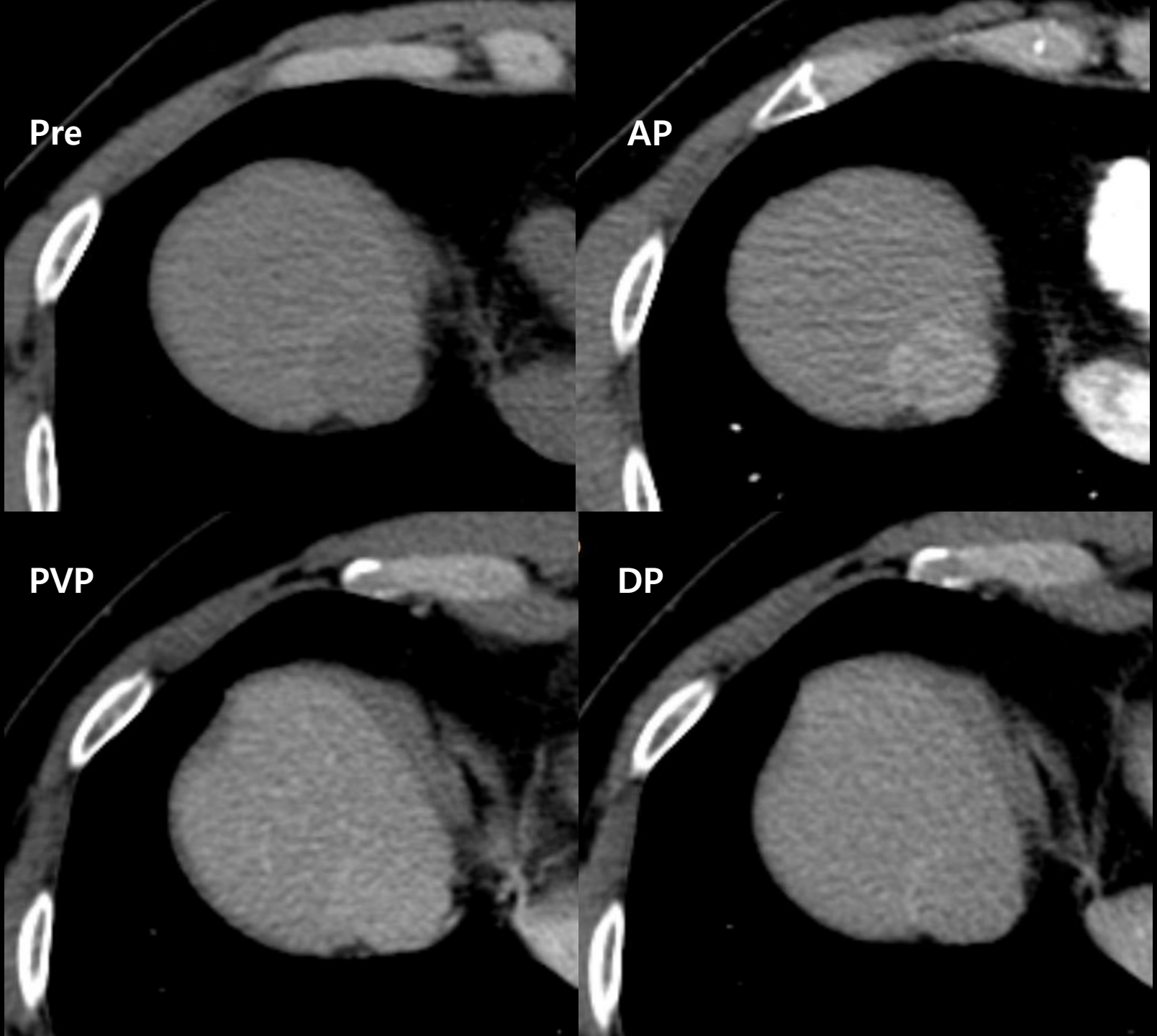


(B) Image obtained after the patient swallowed some water shows that the ingested water entered the nodule (arrow) and the echogenic air inside the sac decreased; the connection (arrowheads) between the nodule and the esophagus is clearly visible. .J Clin Ultrasound. 2016 Jul 8;44(6):333-8.

Case_ABD 1

- 57/M
- alcoholic fatty liver, s/p
- AFP = 6.62 (0.89~8.78), PIVKA-II = 16 (0~40)




Pre
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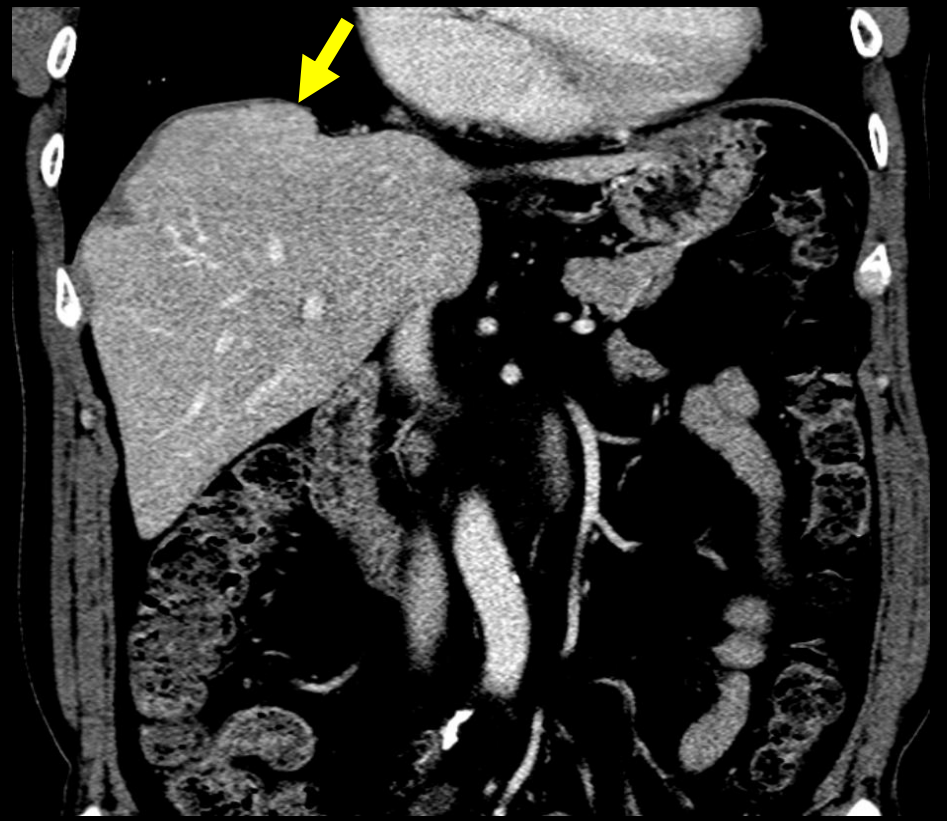
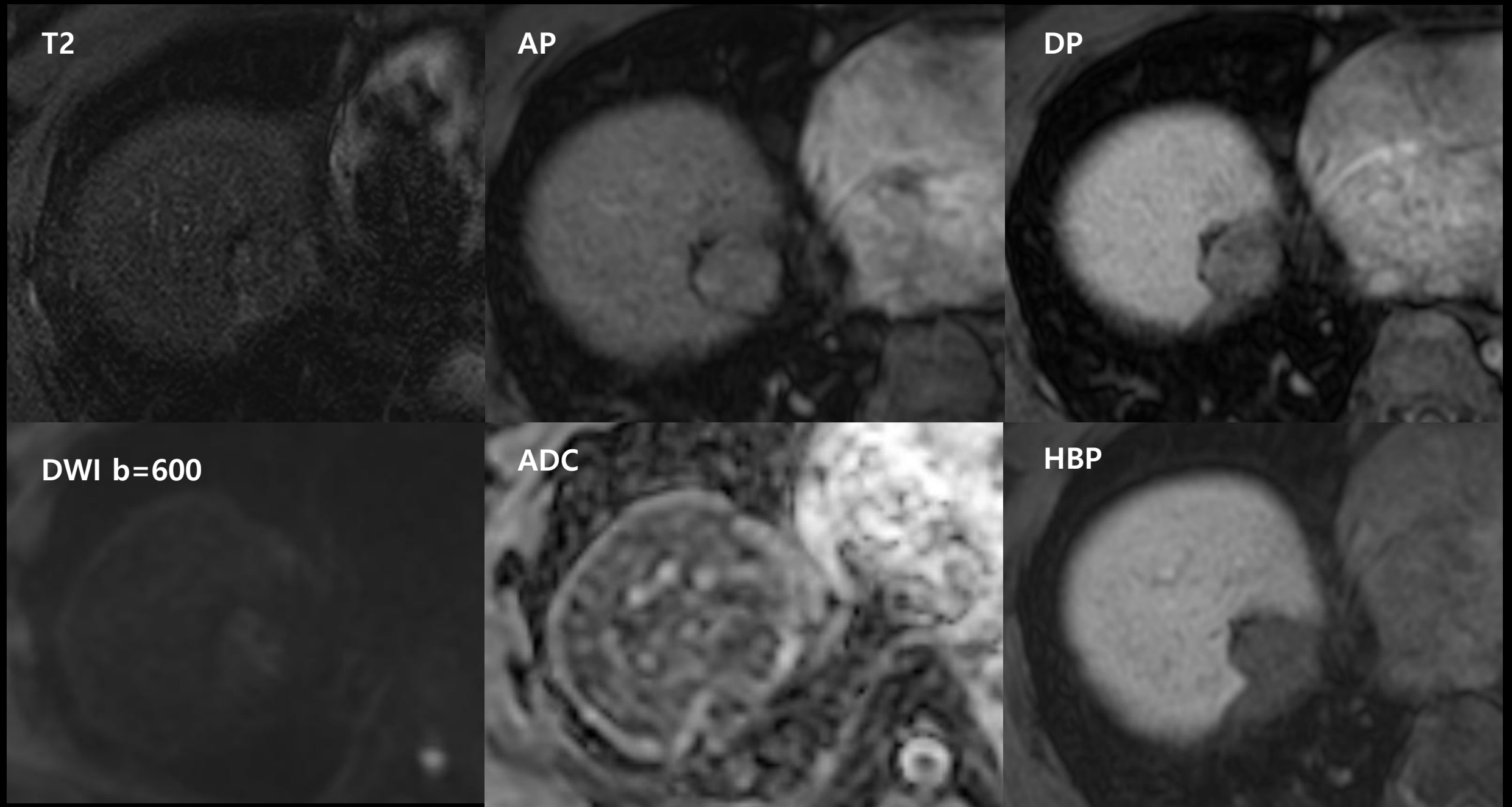



T2
AP
DP
DWI b=600
ADC
HBP

Case_ABD 1

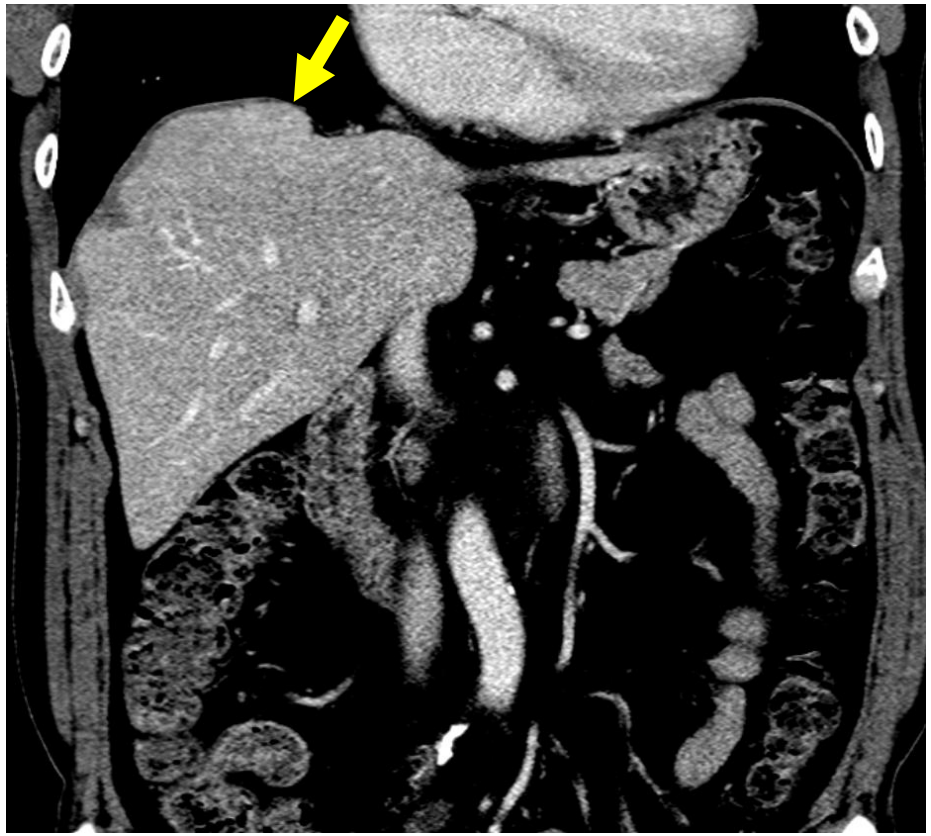
1. Which of the following is the most likely disease shown above?

① HCC
② Splenosis Answer (1 point)
③ Atypical hemangioma
④ Hepatocellular adenoma
⑤ Focal nodular hyperplasia

Case_ABD 1

Splenosis: Post-Splenectomy Autotransplantation

- the heterotopic autotransplantation of splenic tissue, which occurs following **splenic trauma or splenectomy**. Splenic pulp seeds into the peritoneal cavity and grows into functional nodules.

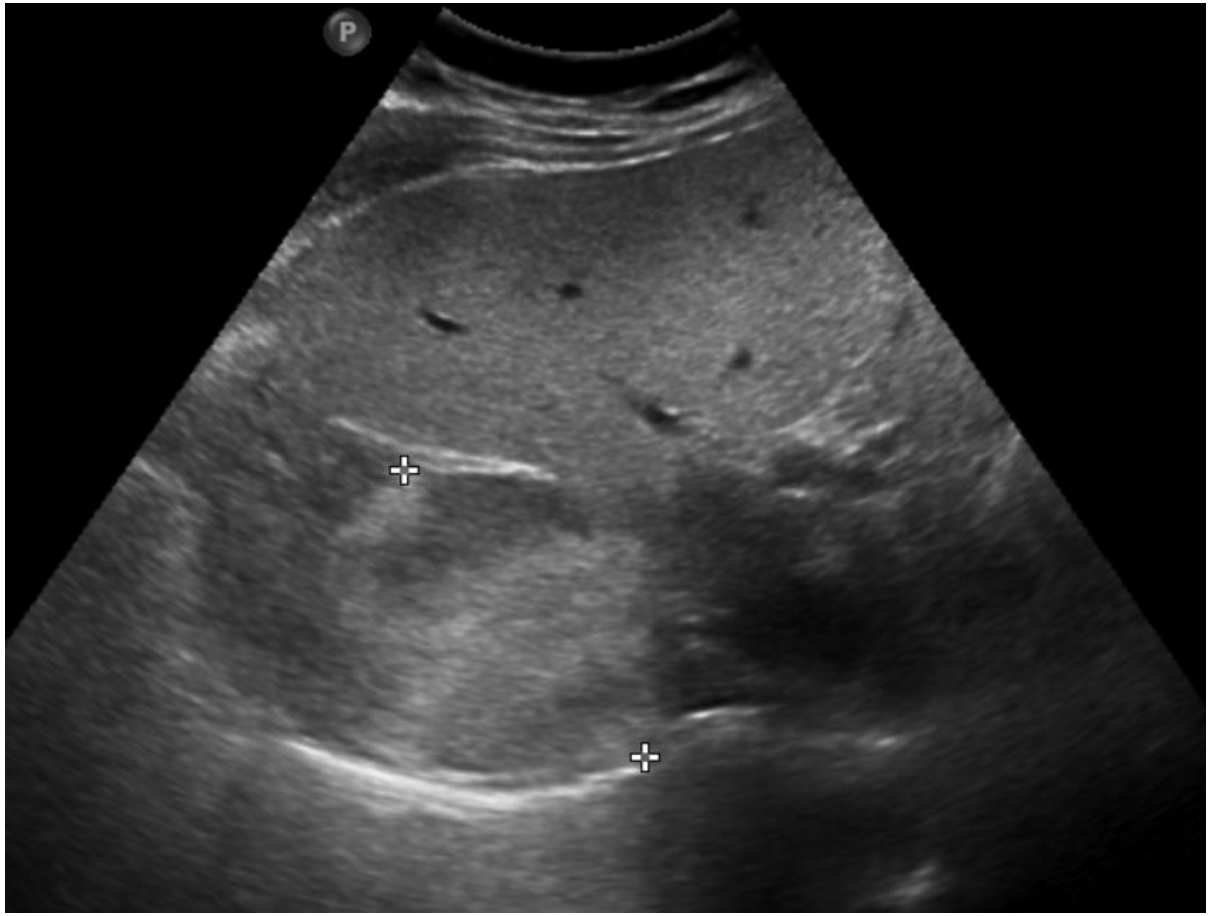


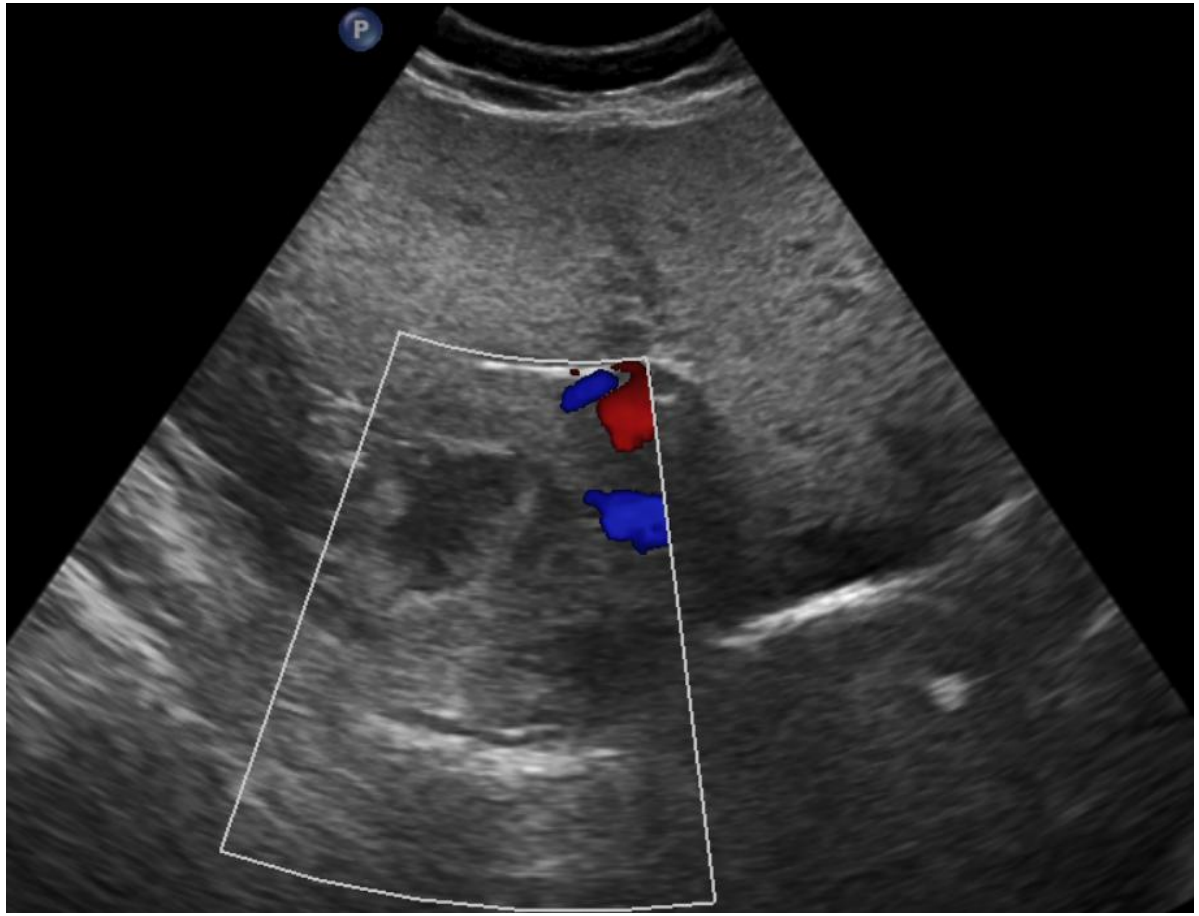
Key Sonographic Findings

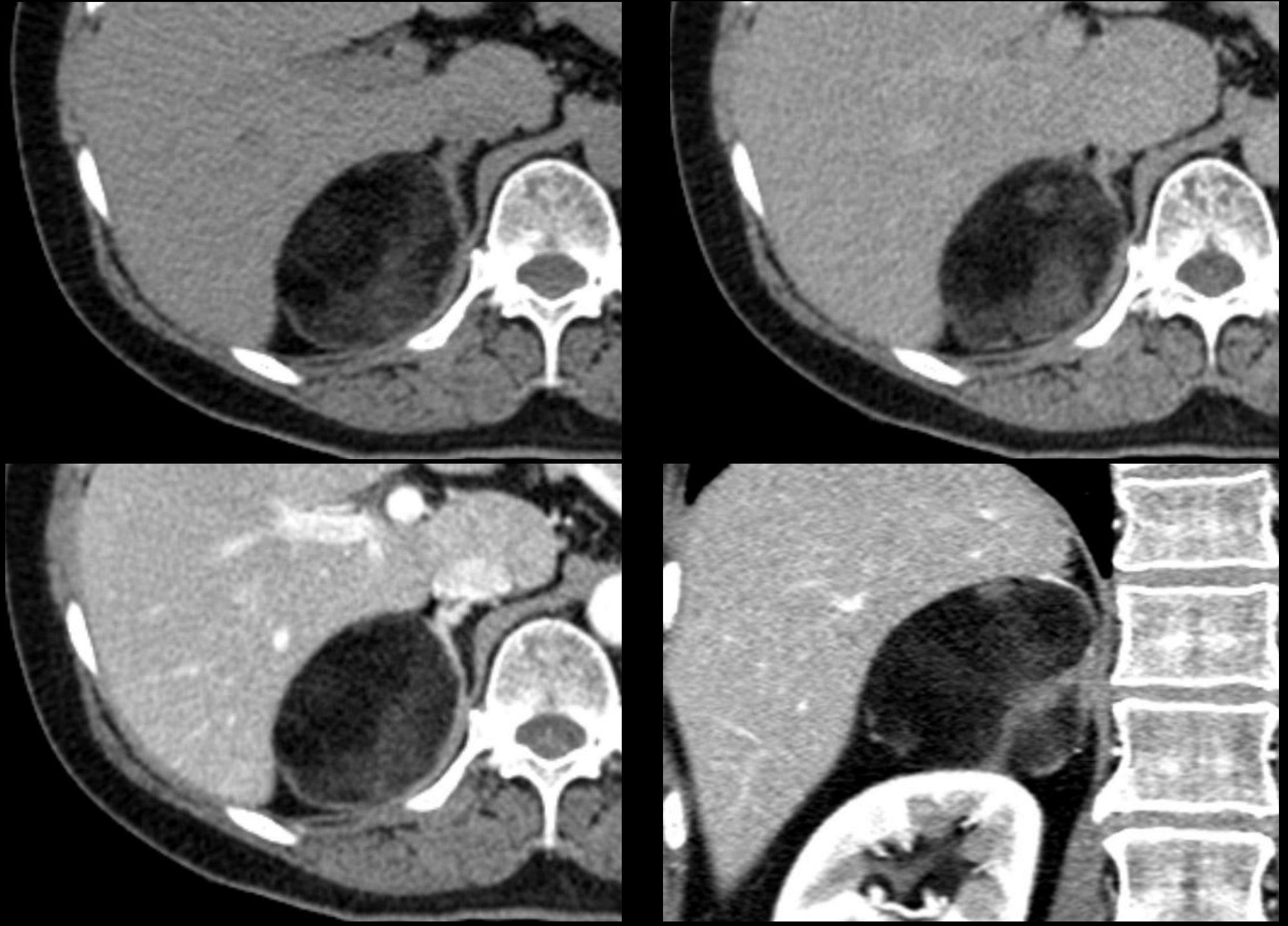
- **Multiple nodules:** Often **multiple, discrete nodules** scattered throughout the peritoneum, omentum, or even on the serosal surfaces of the bowel.
- **Spleen-like echotexture:** solid, well-defined, and exhibit a **homogeneous, fine-granular echotexture** that is identical to normal splenic tissue.
- **Lack of hilum:** splenosis nodules are supplied by **local small vessels** and lack a central hilum or a main splenic artery.
- **Empty splenic bed:** The left upper quadrant (LUQ) shows an **empty splenic bed** due to the prior splenectomy.

Case_GU 1

- 63/F
- Mass on screening USG







Case_GU 1

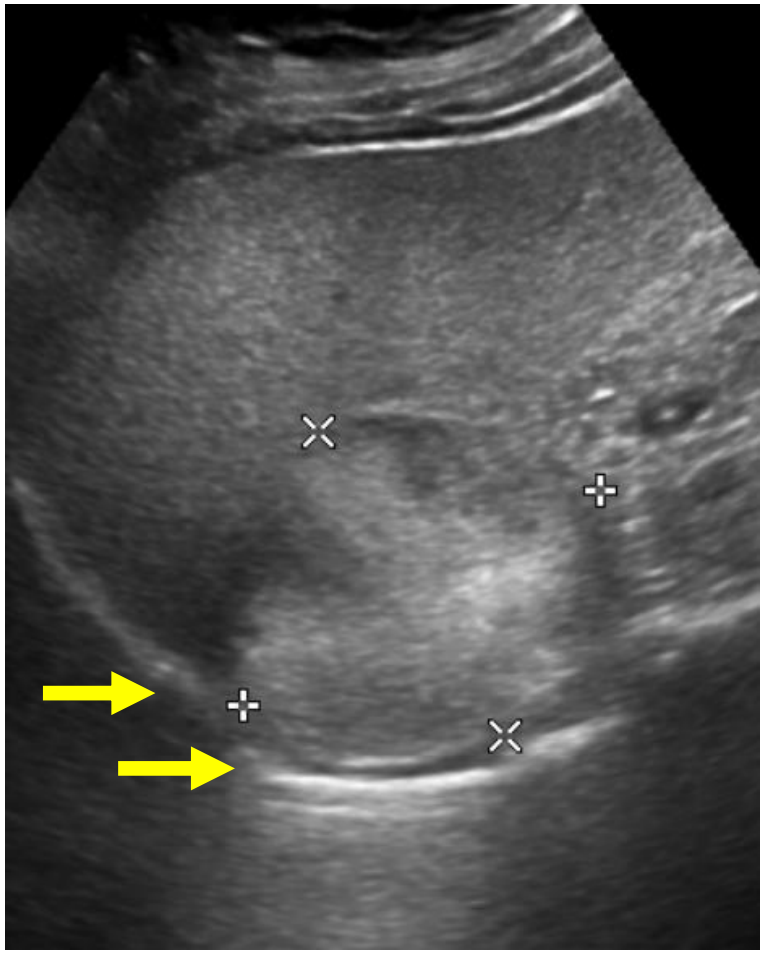
1. Which of the following is the most likely disease shown above?

① Adrenal adenoma
② Adrenal metastasis
③ Pheochromocytoma
④ Adrenal myelolipoma Answer (1 point)
⑤ Adrenal cortical carcinoma

Case_GU 1

Adrenal Myelolipoma

- A rare, benign, non-functioning tumor composed of mature adipose tissue and hematopoietic elements (myeloid and erythroid cells).
- Most are asymptomatic and discovered incidentally ("incidentaloma"). Large lesions may cause flank pain due to mass effect or spontaneous hemorrhage.

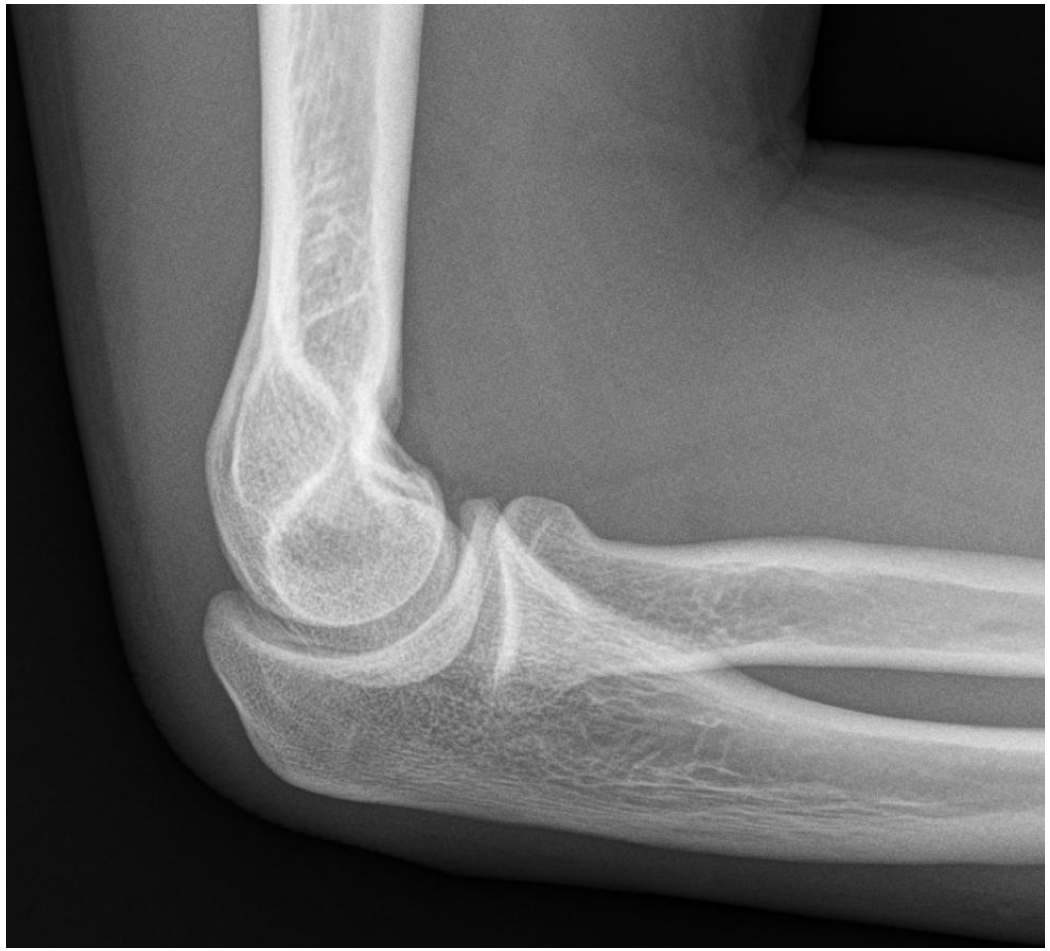


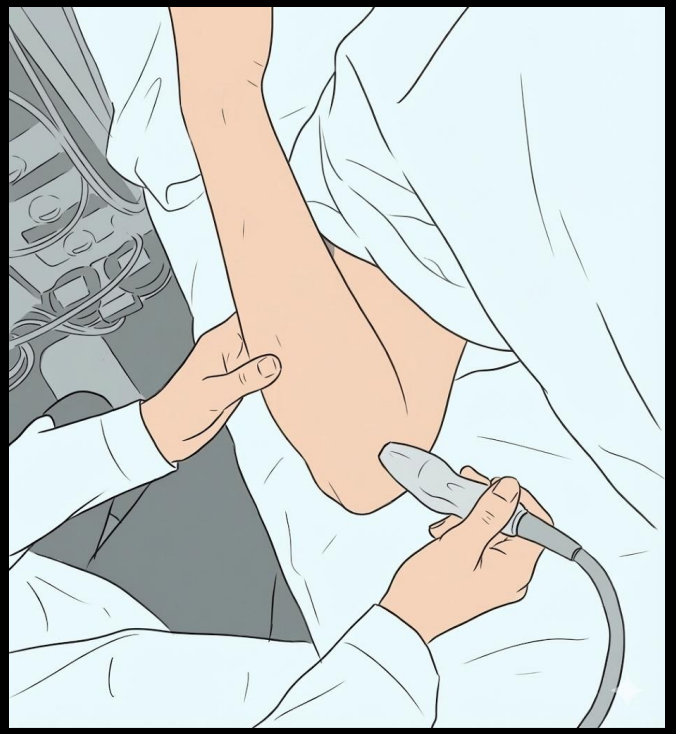
Key Sonographic Findings

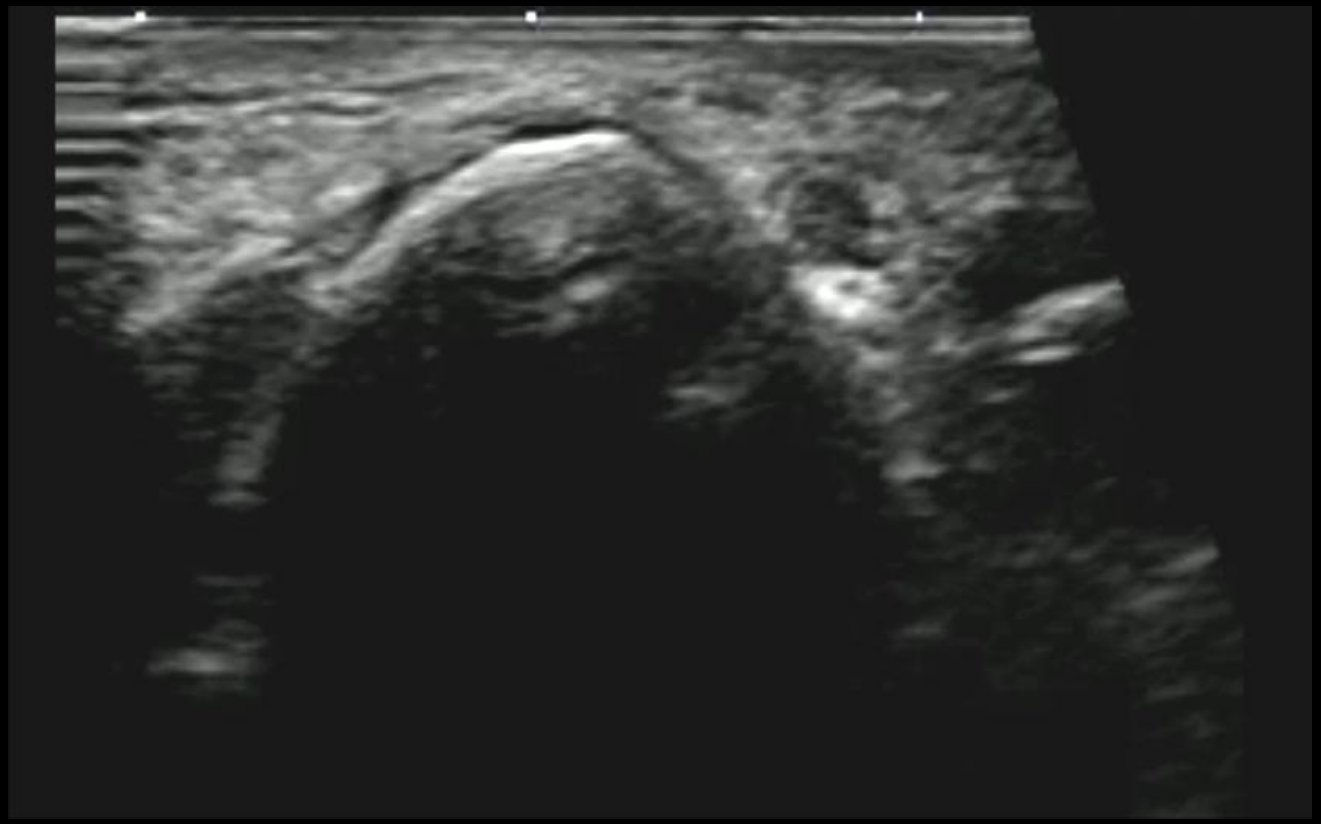
- **Hyperechoic Mass:** a well-defined, highly echogenic (bright) mass, reflecting its high macroscopic fat content.
- **Heterogeneity:** If the tumor contains more myeloid tissue or areas of hemorrhage/calcification, it will show a mixed or variegated echogenic pattern.
- **Speed Displacement Artifact:** A classic sign where the diaphragm posterior to the mass appears "displaced" or "broken." This occurs because sound travels slower through fat (~1450 m/s) than through soft tissue (~1540 m/s), causing the ultrasound machine to map those deeper structures further away.

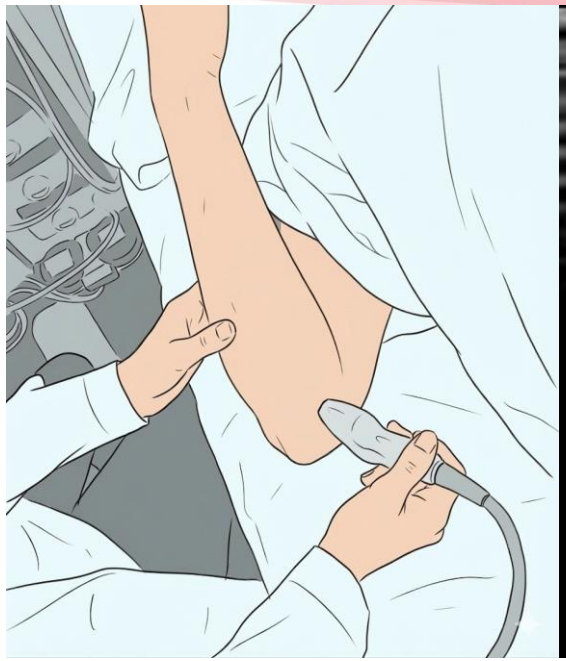
Case_MSK 1

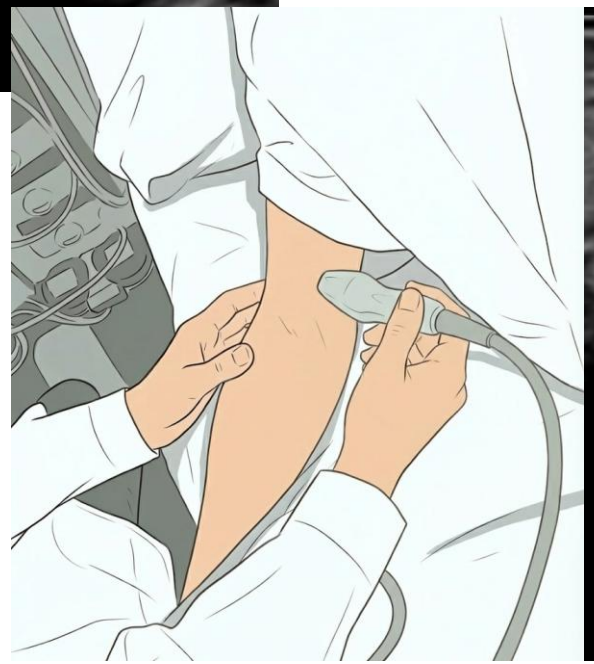
- 14/M
- 4-5th finger tingling sensation

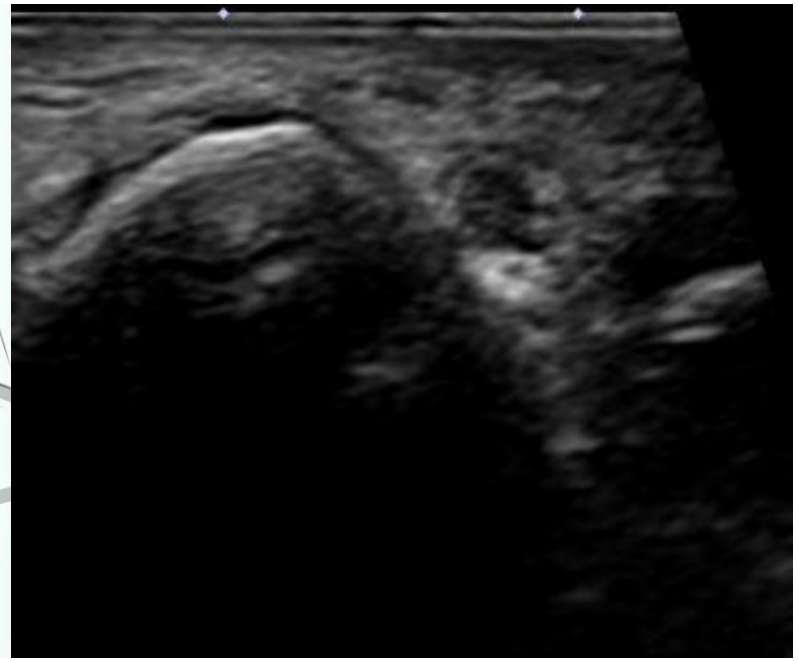












Case_MSK 1

1. Which of the following is the most likely diagnosis?

① Carpal tunnel syndrome
② Cubital tunnel syndrome
③ Pronator teres syndrome
④ Snapping triceps syndrome Answer (1 point)
⑤ Anterior interosseous nerve syndrome

Case_MSK 1

Snapping Triceps Syndrome

- A dynamic condition where the **medial head of the triceps** abnormally dislocates anteriorly over the **medial epicondyle** during elbow flexion (usually >70–90°).

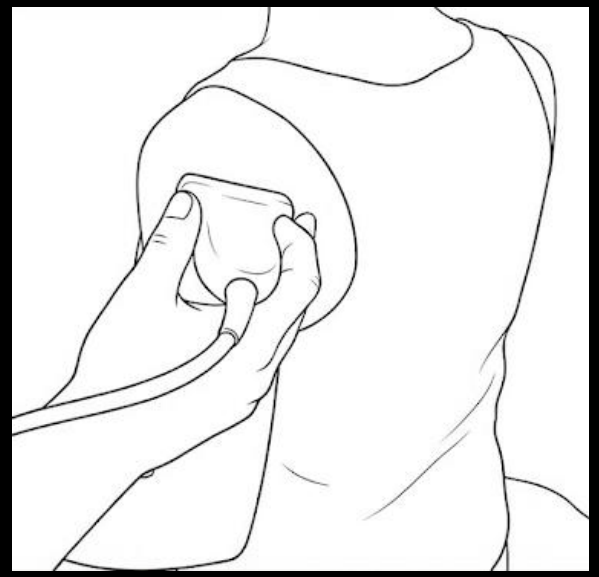
Clinical Clue: Painful "snapping" or "popping" at the medial elbow, often two 'snaps' (the nerve followed by the muscle)

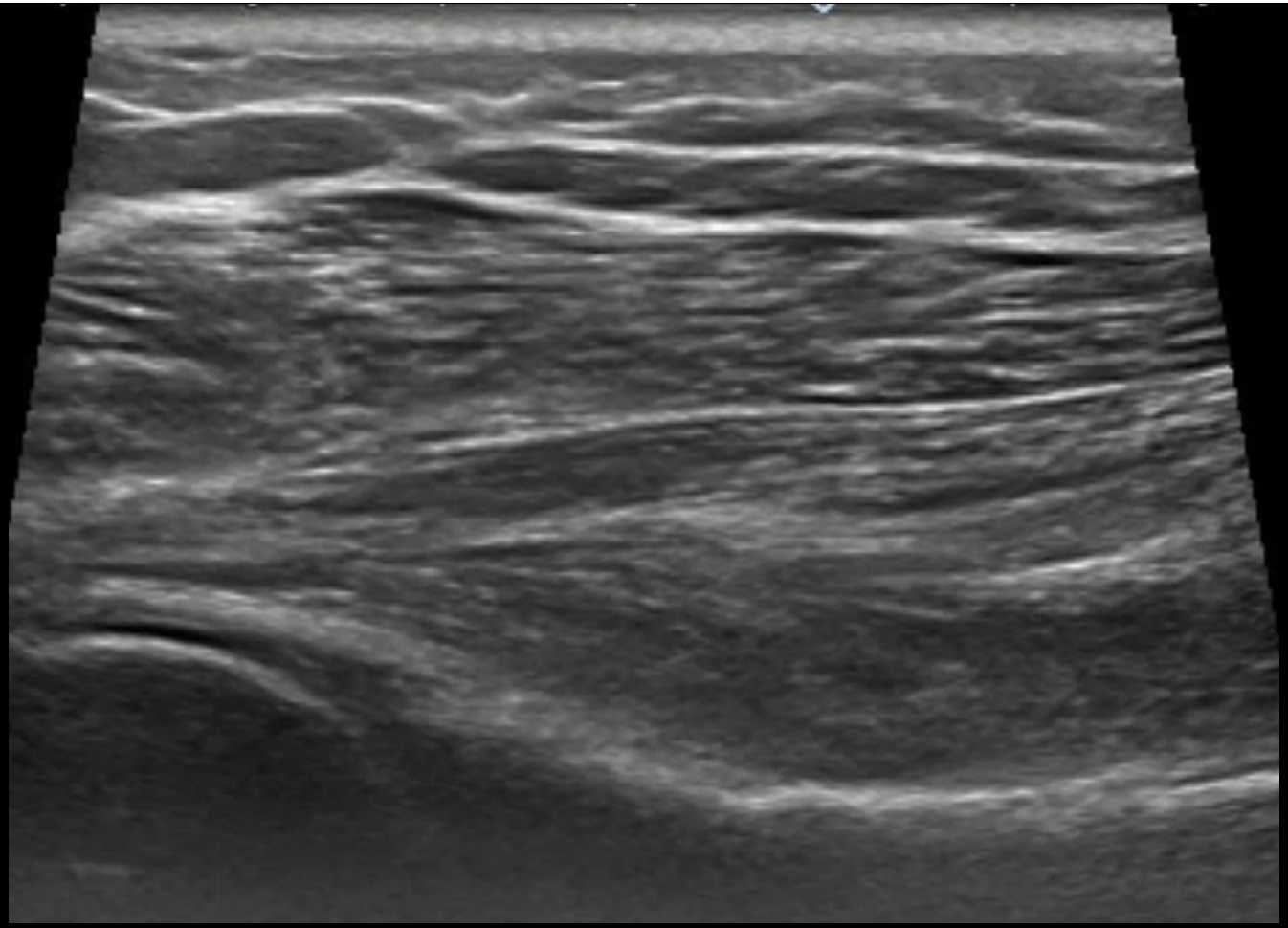
Key Sonographic Findings

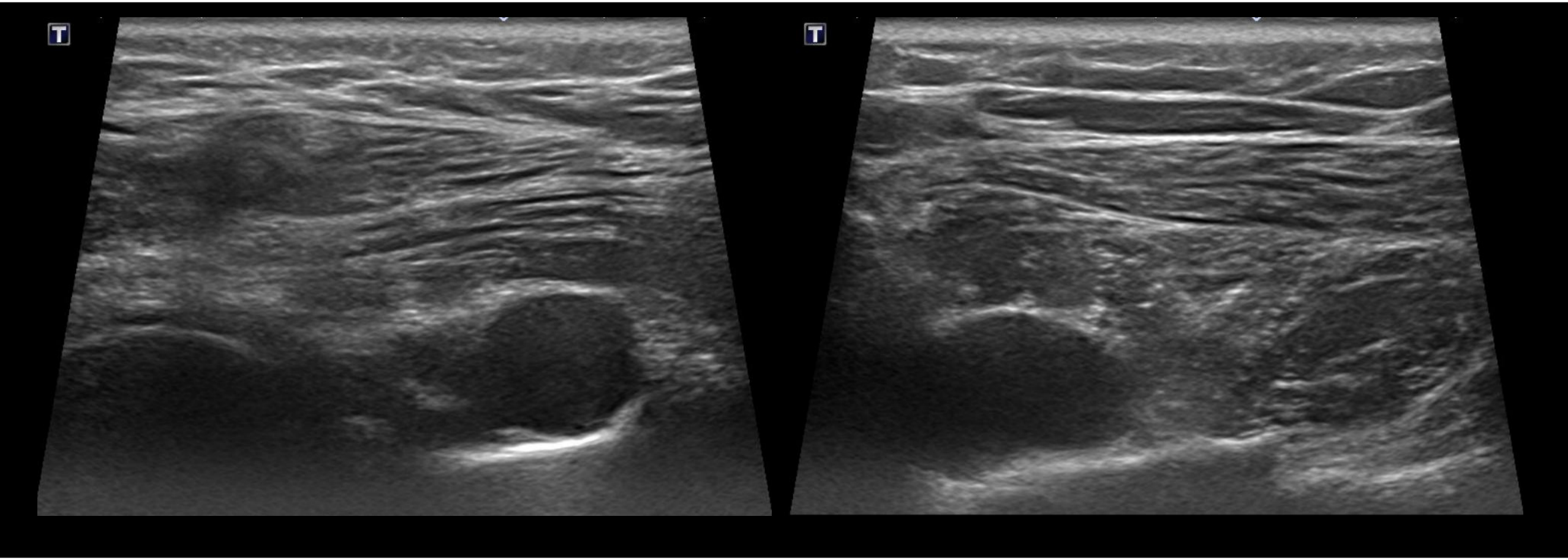
- **Dynamic Flexion Maneuver:** The diagnosis is only confirmed by visualizing the **sudden anterior jump** of the triceps muscle over the epicondylar apex during active/passive flexion.
- **Ulnar Nerve Co-dislocation:** Frequently, the **ulnar nerve** is pushed anteriorly by the snapping triceps or dislocates independently.
- **Secondary Signs:** Hypoechoic thickening of the ulnar nerve (friction neuritis) or localized soft tissue edema over the medial epicondyle.

Case_MSK 2

- 51/F
- Shoulder pain







Case_MSK 2

1. Which of the following is the most characteristic clinical consequence of this condition?

① Deltoid muscle atrophy
② Teres minor muscle atrophy
③ Infraspinatus muscle atrophy Answer (1 point)
④ Supraspinatus muscle atrophy
⑤ Subscapularis muscle atrophy

Case_MSK 2

Paralabral Cyst (Spinoglenoid Notch)

- A cyst arising from a **posterior labral tear** (e.g., SLAP) that compresses the suprascapular nerve at the spinoglenoid notch.

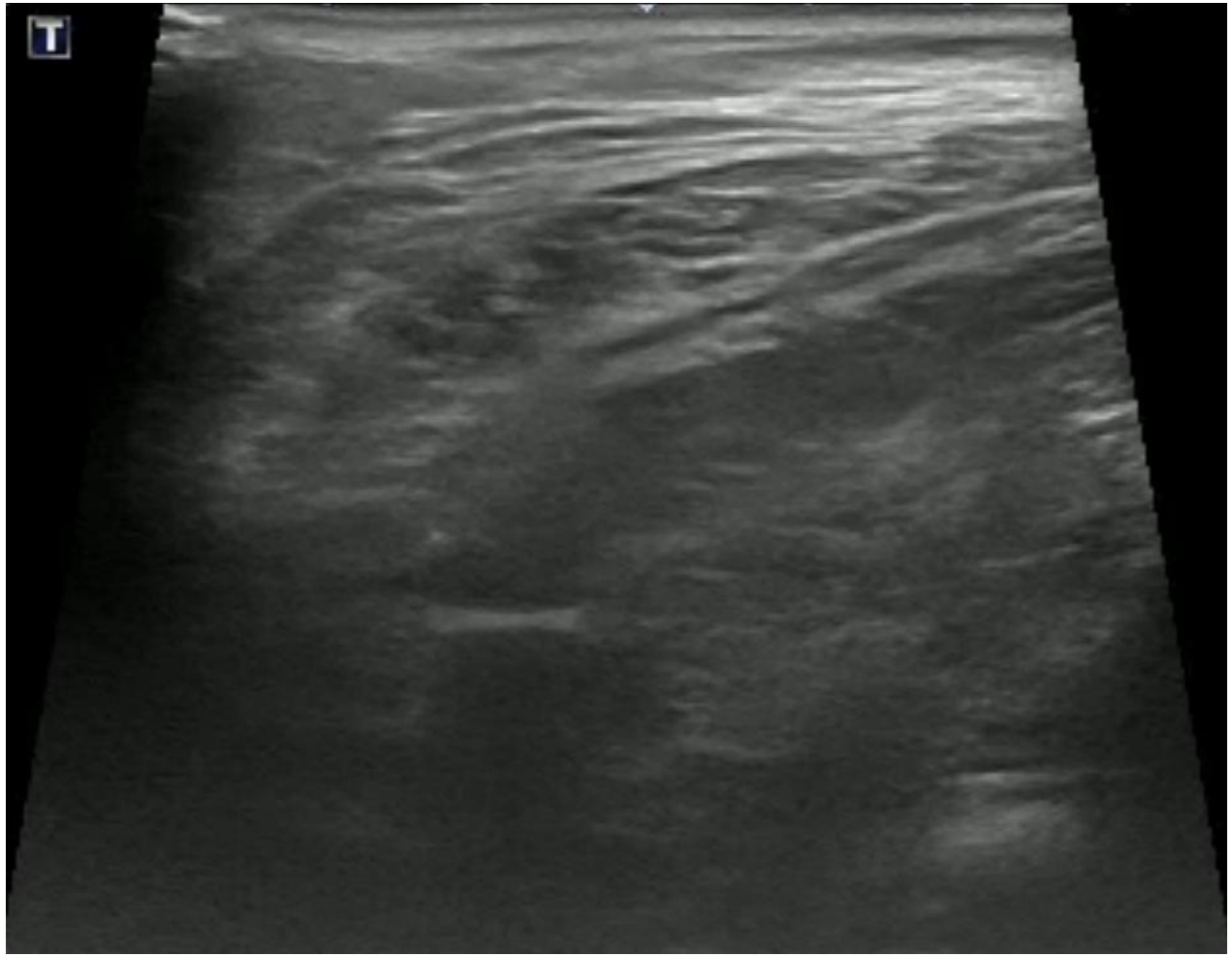
Clinical Hallmark: Causes **isolated infraspinatus atrophy** and weakness, as the nerve supply to the supraspinatus has already branched off.

Key Sonographic Findings

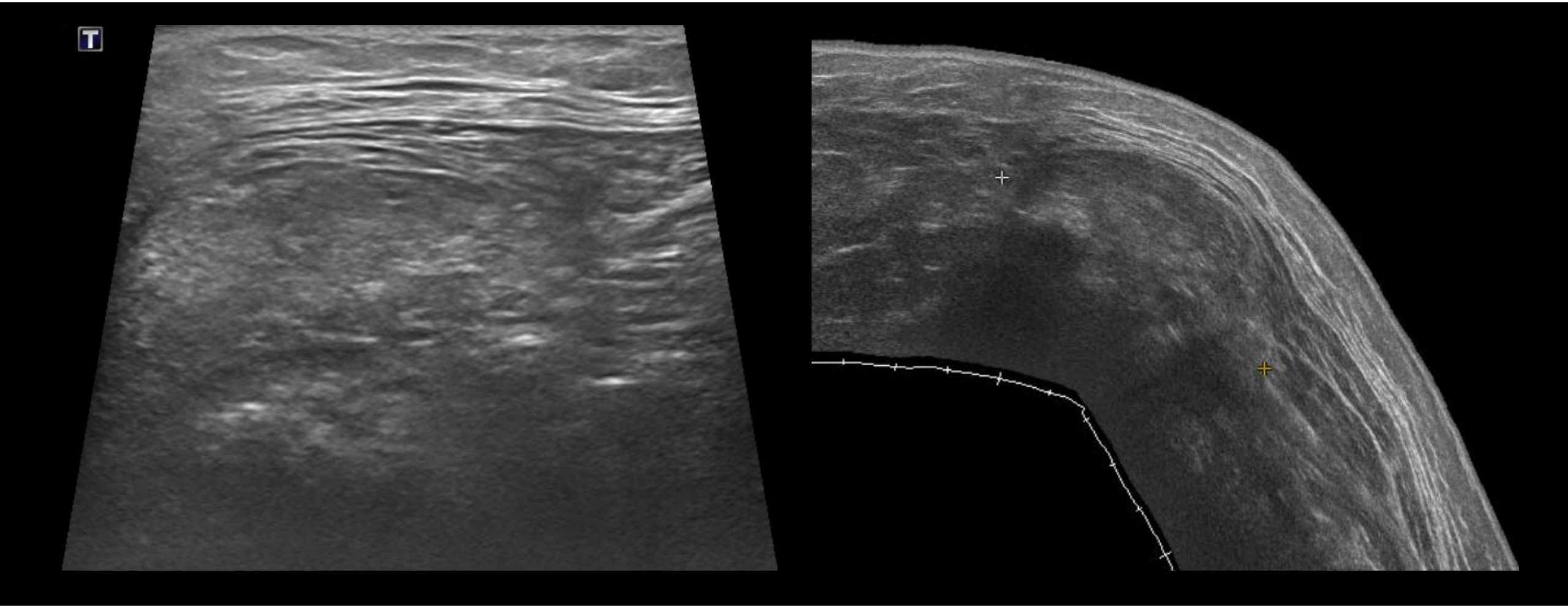
- **Cystic Mass:** An anechoic, often multiloculated mass at the **spinoglenoid notch** (located between the scapular spine and the glenoid).
- **Isolated Atrophy:** Increased echogenicity (fatty replacement) and decreased volume of the **infraspinatus muscle** only.
- **Labral Tear:** Often associated with a visible cleft or irregularity in the posterior labrum.

Case_MSK 3

- 64/M
- Flank mass



Transverse scanning at Rt flank



Case_MSK 3

1. Which of the following is the most likely diagnosis?

① Lipoma
② Hibernoma
③ Liposarcoma
④ Lumbar hernia Answer (1 point)
⑤ Elastofibroma dorsi

Case_MSK 3

Lumbar Hernia

- A rare abdominal wall defect occurring in two classic locations:
- **Superior Triangle (Grynfeltt-Lesshaft):** Most common; bounded by the 12th rib, quadratus lumborum, and internal oblique.
- **Inferior Triangle (Petit):** Bounded by the iliac crest, latissimus dorsi, and external oblique.

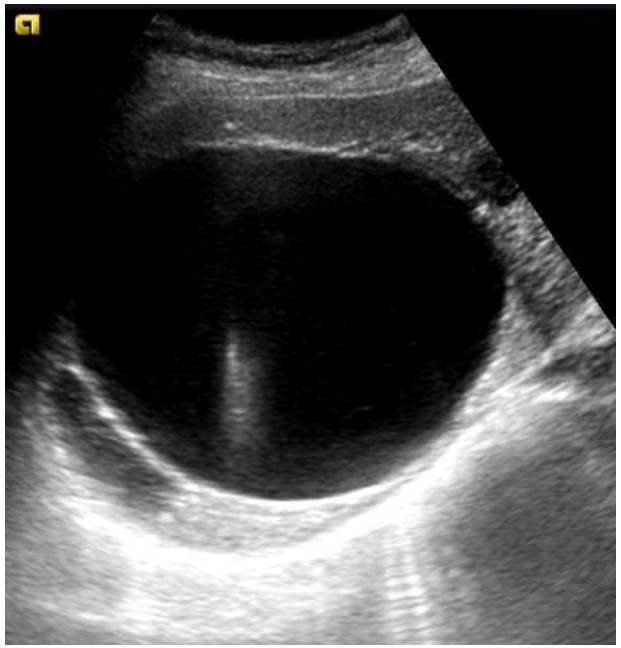
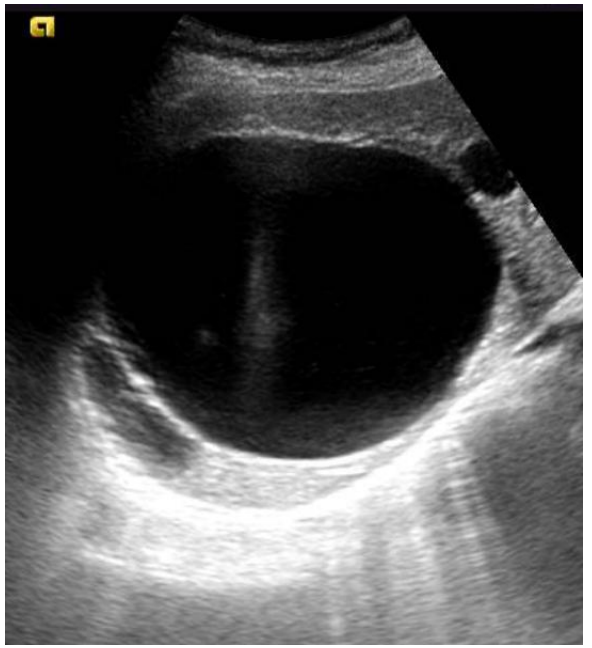
Key Sonographic Findings

- **Fascial Disruption:** A clear gap or "neck" within the lumbar myofascial layers.
- **Herniated Content:** Usually retroperitoneal fat or bowel loops protruding through the defect.
- **Dynamic Confirmation:** Essential to differentiate from a static lipoma.

Dynamic Scan Techniques

- **Valsalva Maneuver:** Use real-time scanning during straining/coughing to visualize the **expansile movement** of the hernia sac.
- **Positional Stress:** If not visible while prone, scan in a **standing or lateral decubitus** position to utilize gravity.
- **Minimal Pressure:** Avoid excessive transducer compression, which can manually reduce the hernia.

Case_Physics 1


Case_Physics 1

1. Which of the following is the ultrasound artifact shown above?

① Side lobe artifact
② Beam width artifact
③ Mirror image artifact
④ Reverberation artifact
⑤ Wrap-up artifact (Aliasing) Answer (1 point)

Case_Physics 1

Range Ambiguity (Wrap-up, Aliasing) Artifact

- This artifact occurs when the ultrasound system receives echoes from a deep structure after it has already sent out the next pulse. The machine incorrectly assumes these late-arriving echoes belong to the most recent pulse and "wraps" them into the near-field of the image.

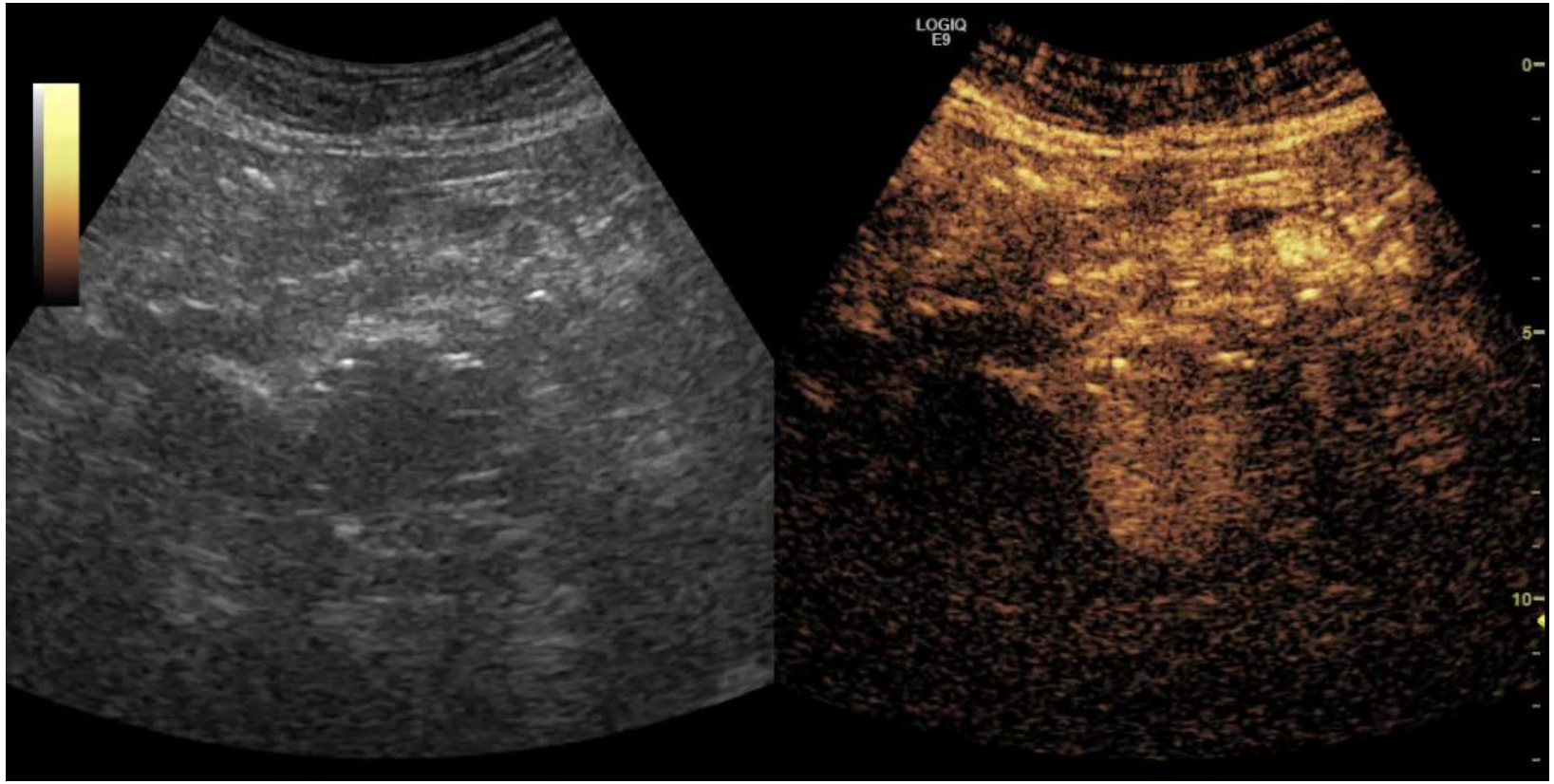
Key Sonographic Features

- **Ghost Images:** Faint, hazy, or ill-defined structures appearing at the top of the screen that do not match the local anatomy.
- **Depth-Dependence:** Often occurs when scanning deep structures (e.g., deep pelvic or cardiac scans) where the sound travel time is significant.

How to Resolve

- **Lower the Pulse Repetition Frequency (PRF):** Lowering PRF gives deep echoes more time to return.
- **Increase Scanning Depth:** This usually forces the machine to automatically lower the PRF.
- **Change Window:** Changing the transducer position or angle can sometimes move the "ghost" out of the area of interest.

Case_CV



1. Which of the followings is the most likely related with the finding shown above?

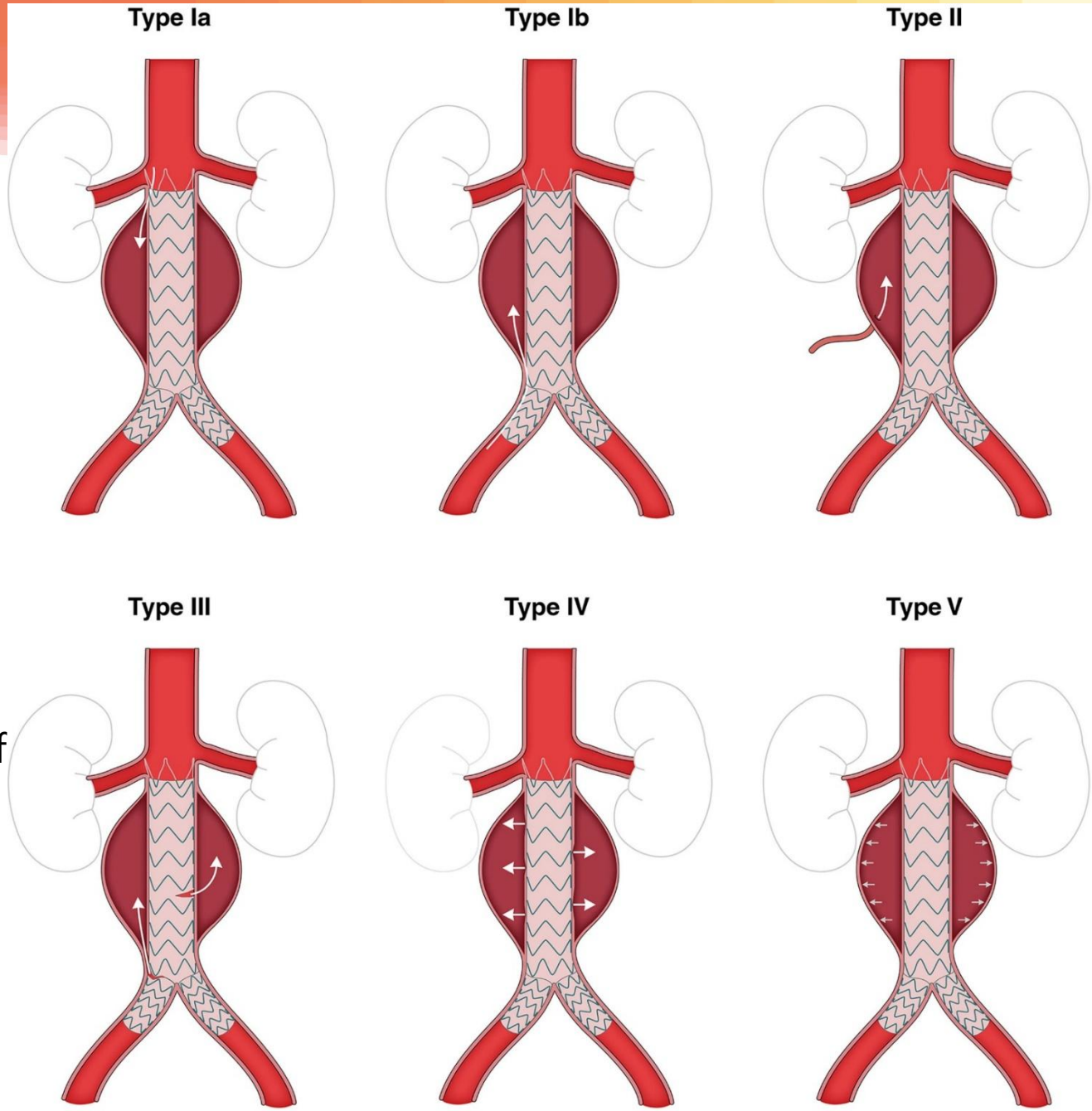
① Aneurysm rupture
② Aortic dissection
③ Stent graft-induced new entry
④ Endoleak (1 point)
⑤ Ulcerated plaque

Case_CV

Persistent blood flow outside the stent graft but within the aneurysm sac

Endoleak (EL) is considered the most frequent complication after EVAR, occurring in 15–30% of patients within the first 30 postoperative days

Type I: attachment site endoleak
Type II: backfilling of the aneurysm sac through branch vessels of the aorta
Type III: graft defect or component misalignment
Type IV: leakage through the graft wall because of endograft porosity
Type V: endotension; aortic pressure transmitted throught the graft/thrombus to the aneurysm sac



Isselbacher et al. *Circulation 2022;146(24): e334-e481*