

2025 SDMS Annual Conference

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1

Bumps, Lumps, and What the What's – When Incidental Becomes Monumental

Dax Roman Godkin RVT RDMS BS

SDMS September 18, 2025

Denver, CO

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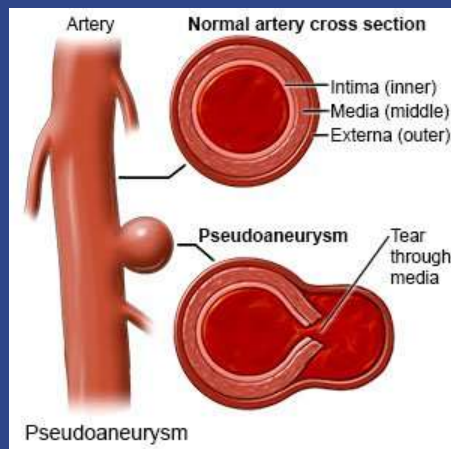
Objectives of this Presentation

- To educate the sonographer community about a variety of pathologies/incidental findings that are outside the normal scope of practice.
- To better prepare the sonographer community for the potential for findings that are different from the expected and to help hone the 'detective' in all of us.
- Discuss scanning techniques that will help sonographers to better appreciate incidental findings when they are encountered during a scan.

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Pseudoaneurysm

- A pseudoaneurysm is a false aneurysm that occurs when blood leaks from a damaged artery and accumulates in the surrounding tissue, rather than forming a sac within the artery's wall like a true aneurysm. It's often caused by injury, surgery, or other procedures that damage the artery.

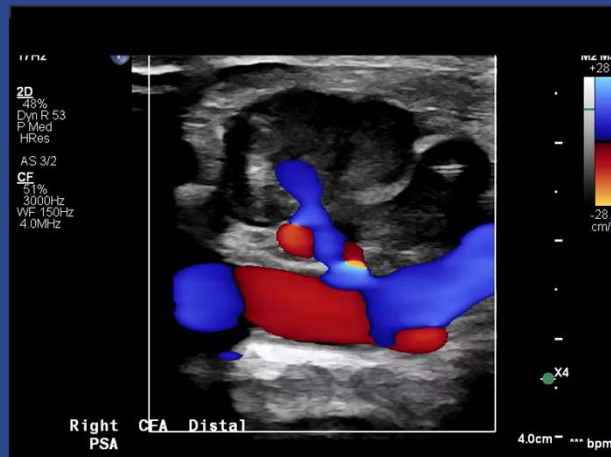


<https://www.drugs.com/cg/pseudoaneurysm.html>

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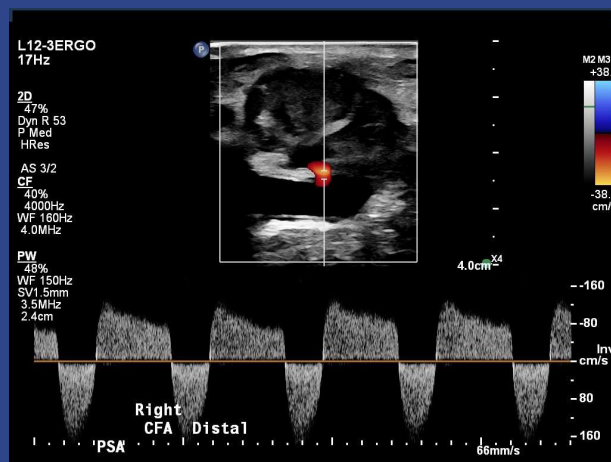
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Common femoral artery PSA



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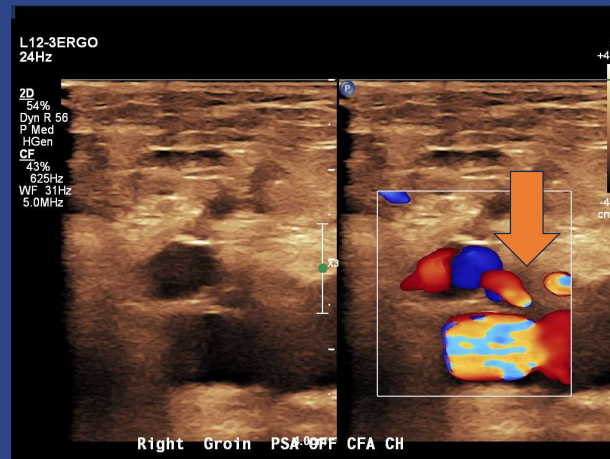
Pseudoaneurysm – common femoral artery



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Small CFA pseudo



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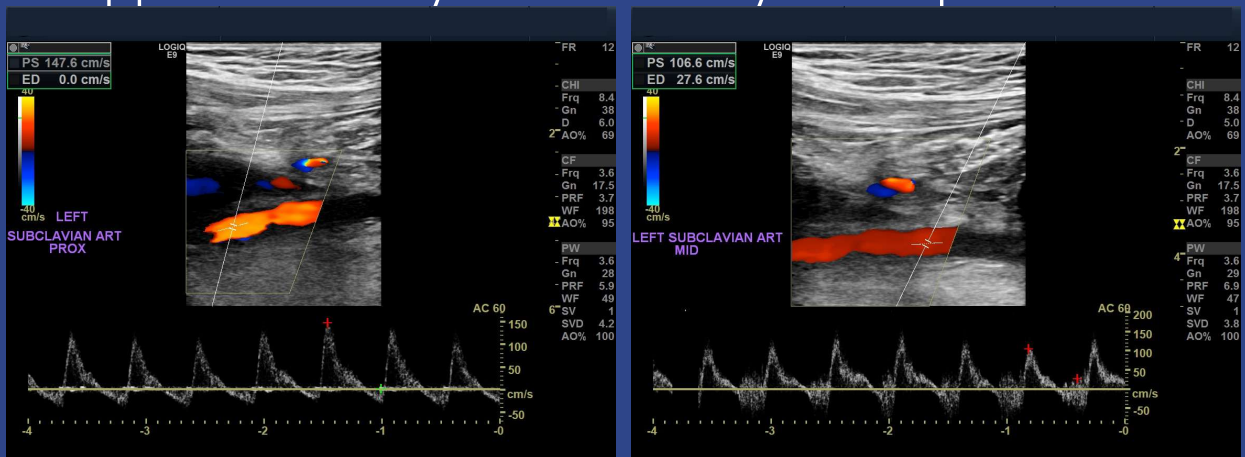
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Upper extremity venous study – SCA pseudo

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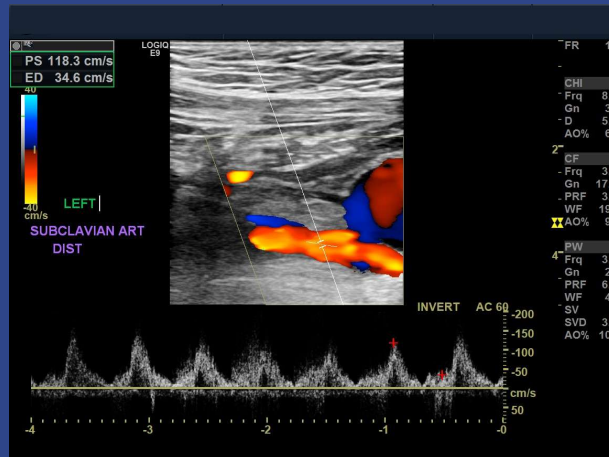
Upper extremity venous study – SCA pseudo



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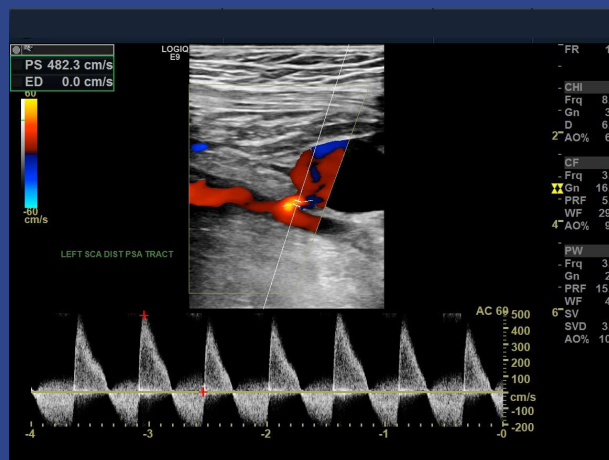
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Upper extremity venous study – SCA pseudo



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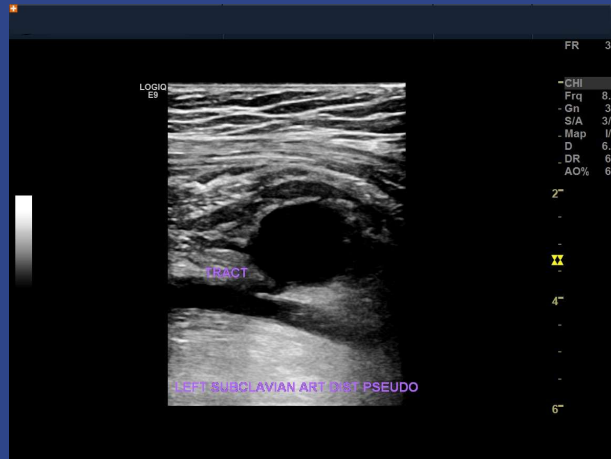
Upper extremity venous study – SCA pseudo



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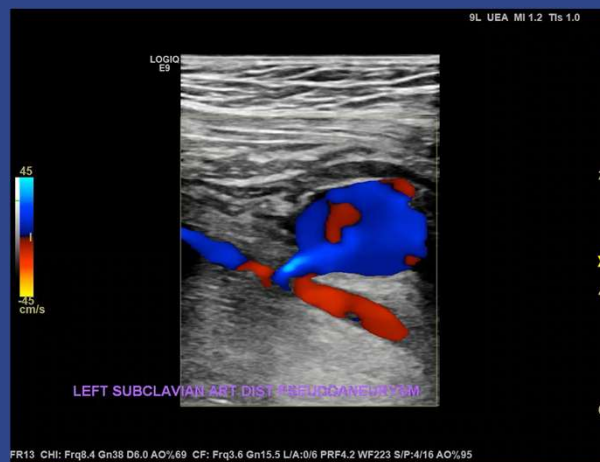
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Upper extremity venous study – SCA pseudo



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Upper extremity venous study – SCA pseudo



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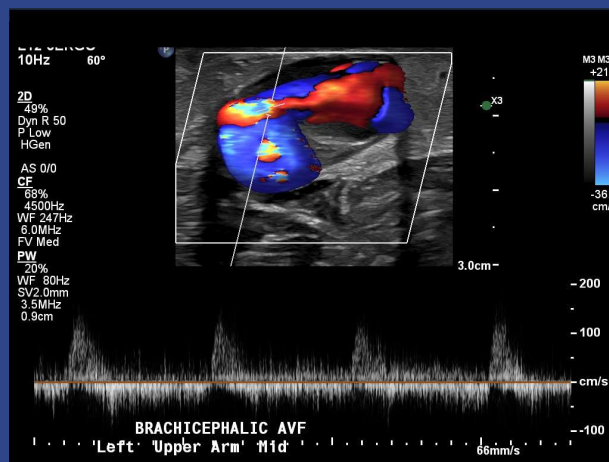
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Pseudo off of dialysis fistula



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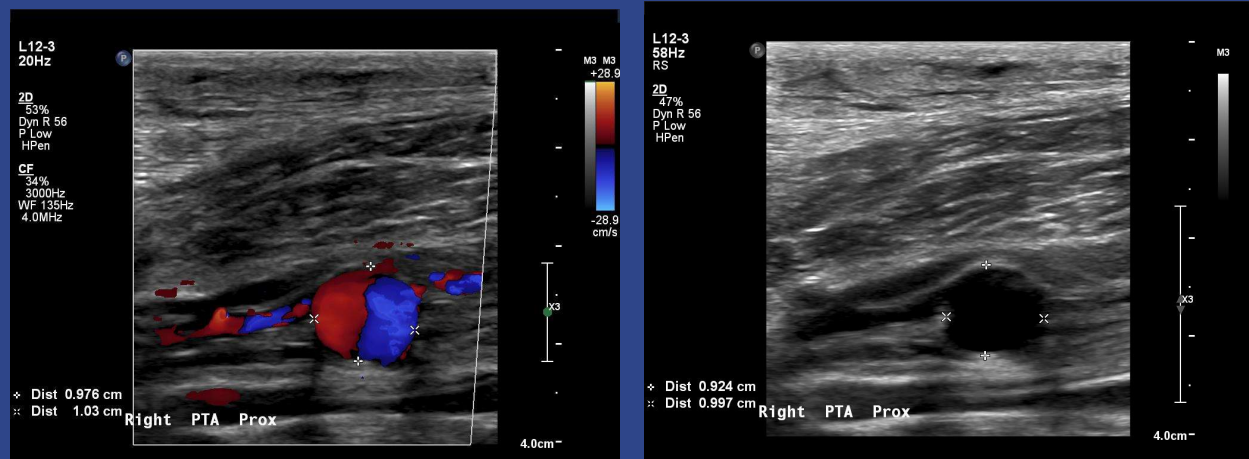
Pseudo off of dialysis fistula



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Pseudo off of PTA Prox



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Pseudo off of PTA Prox



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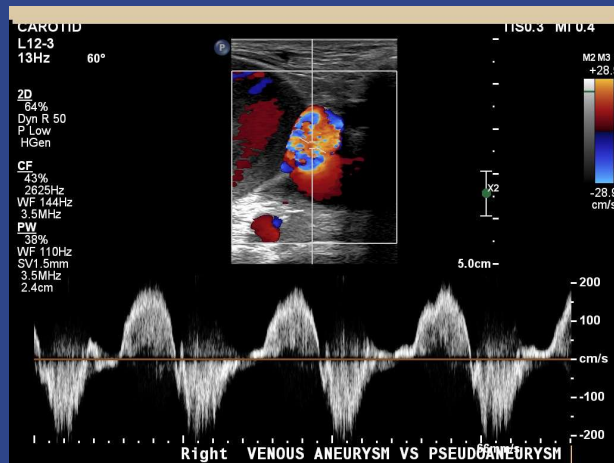
Carotid artery study – venous aneurysm vs. pseudoaneurysm

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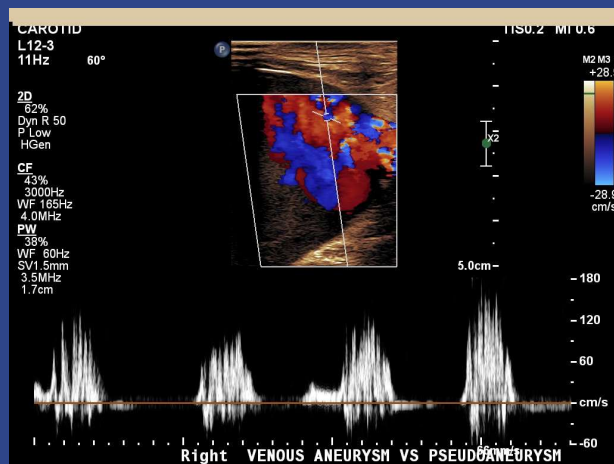


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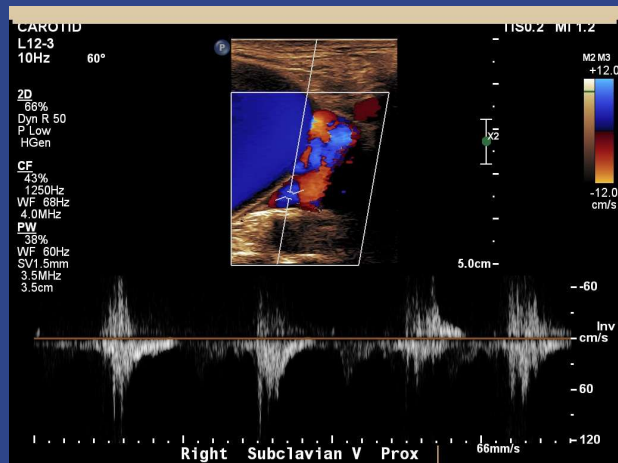


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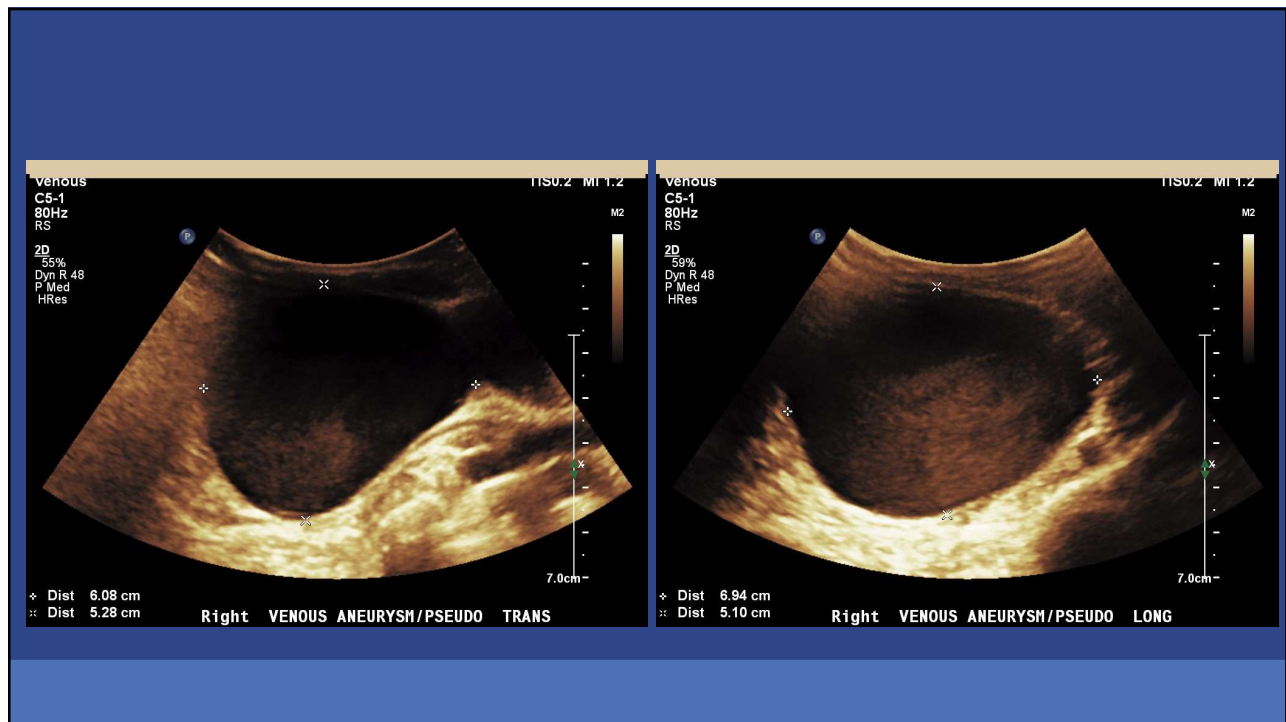


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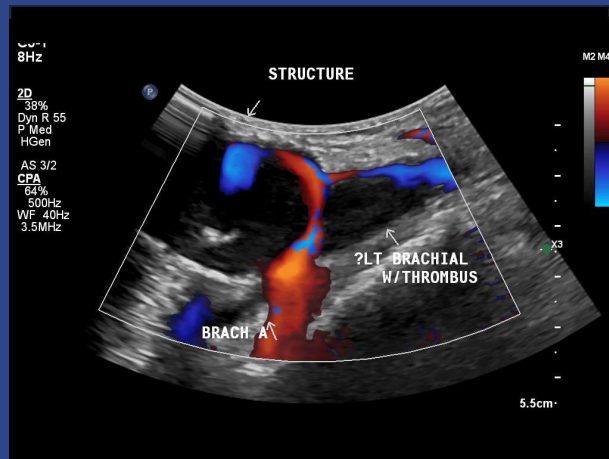


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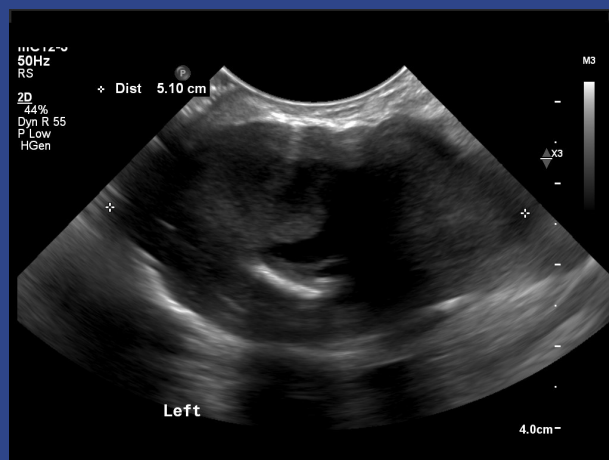
Is it a pseudo or is it real?

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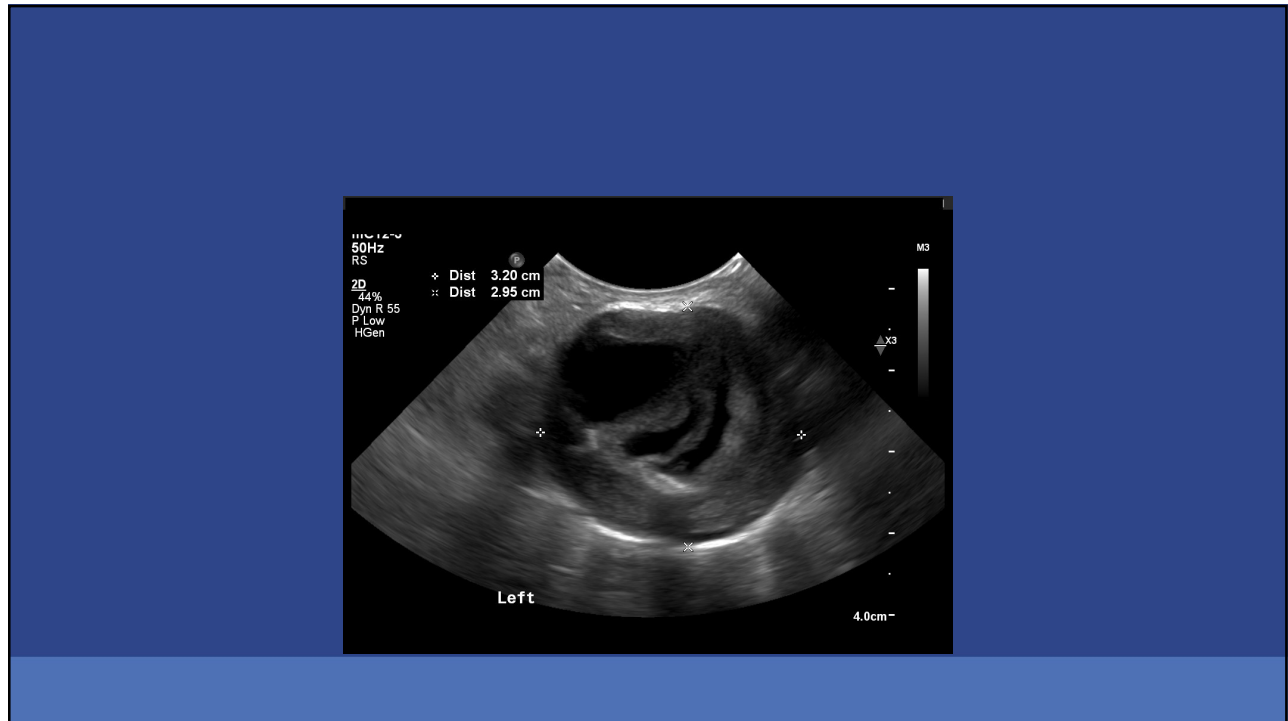


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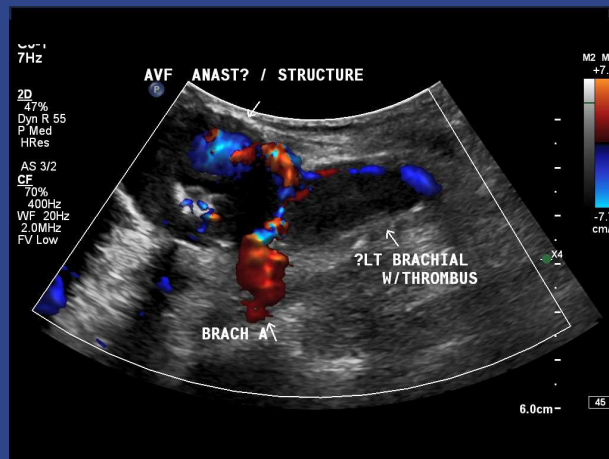


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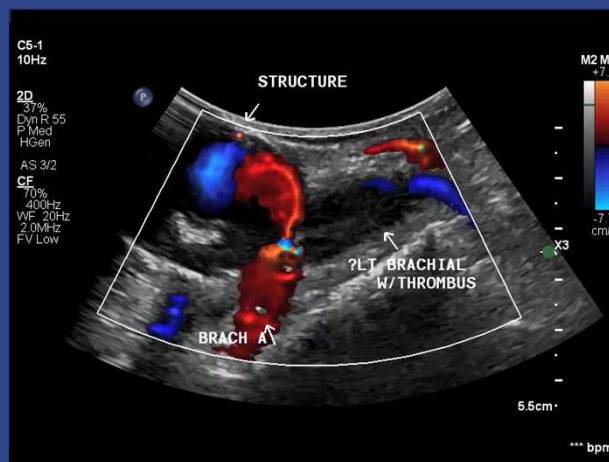


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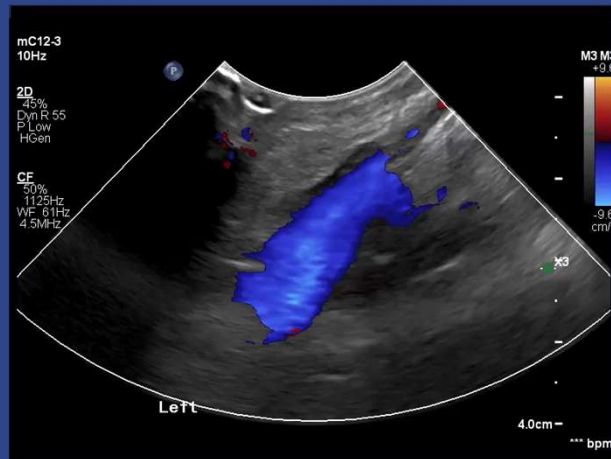


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- It was a ligated AVF from OSH
- Proximal aspect recanalized.

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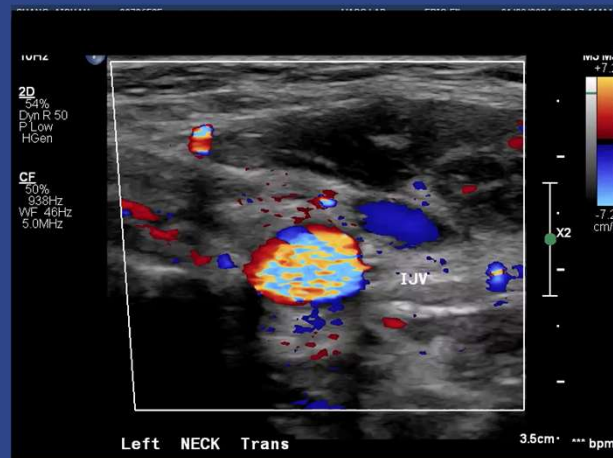
UE venous study – pt S/P left sca-cca bypass

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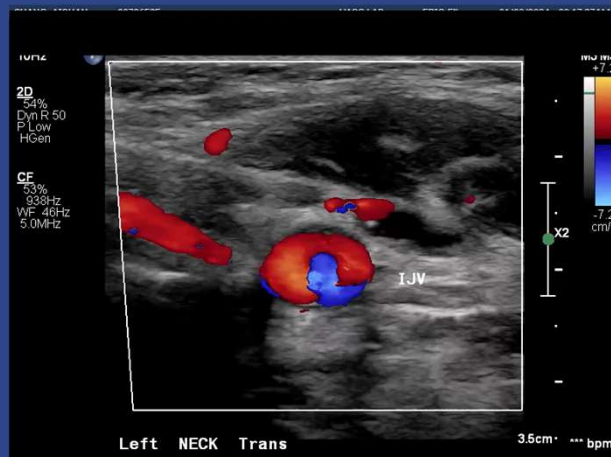


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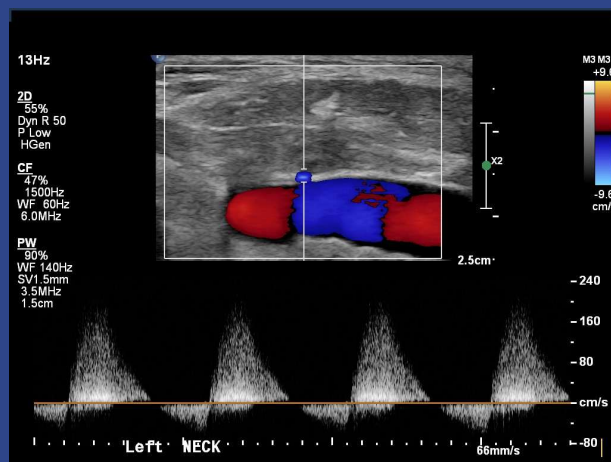


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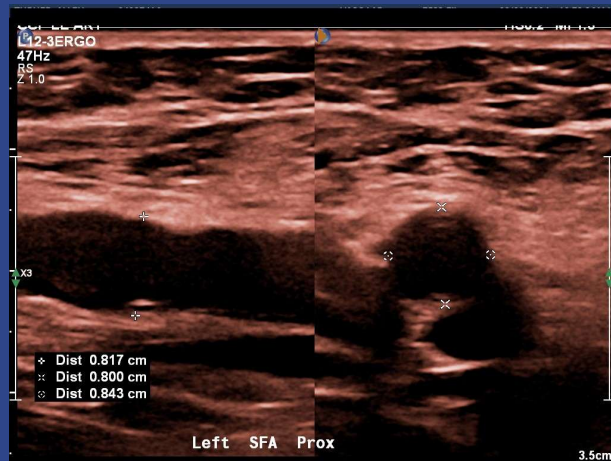
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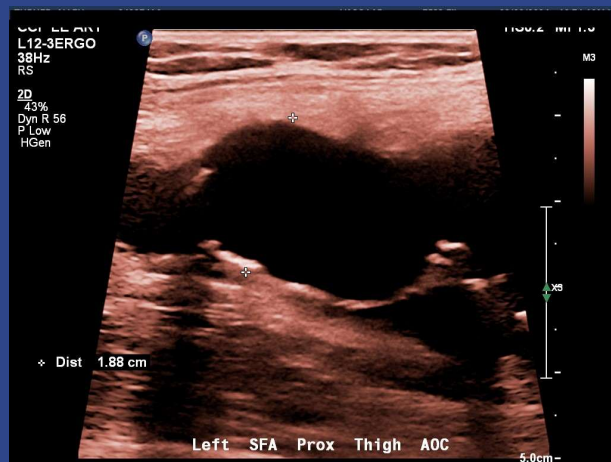
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Pseudo study for pulsatile mass in groin

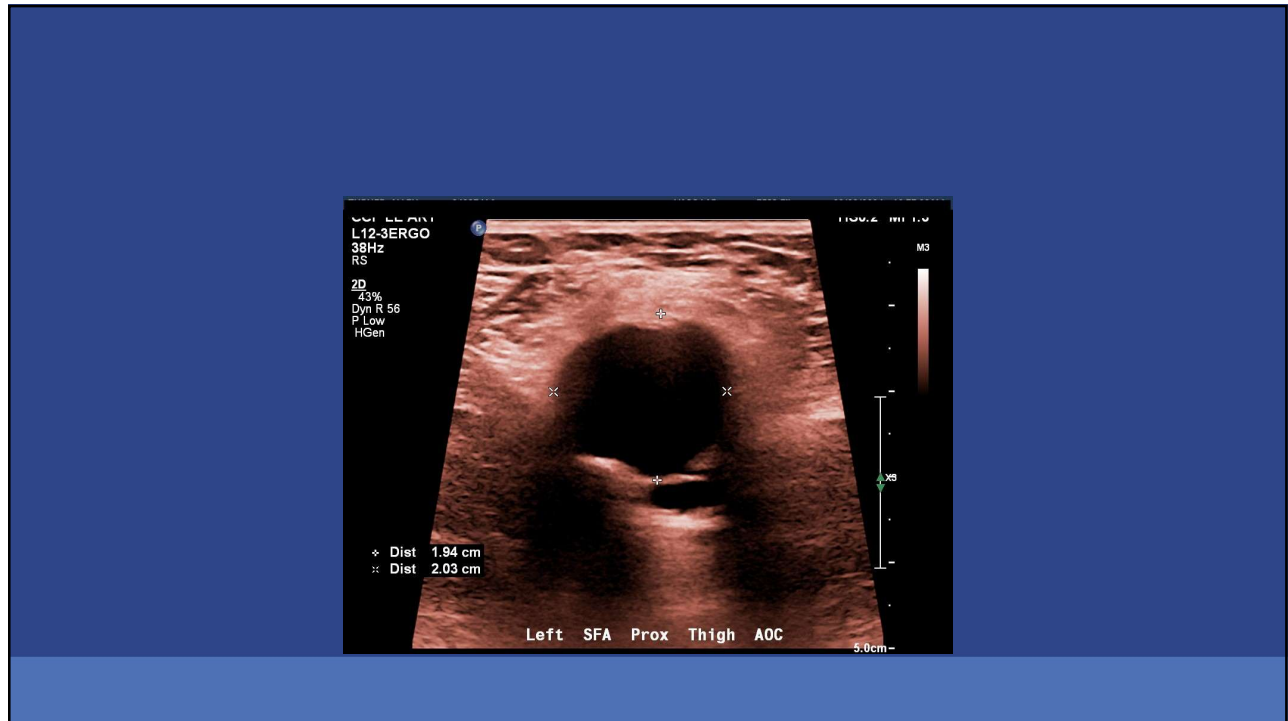


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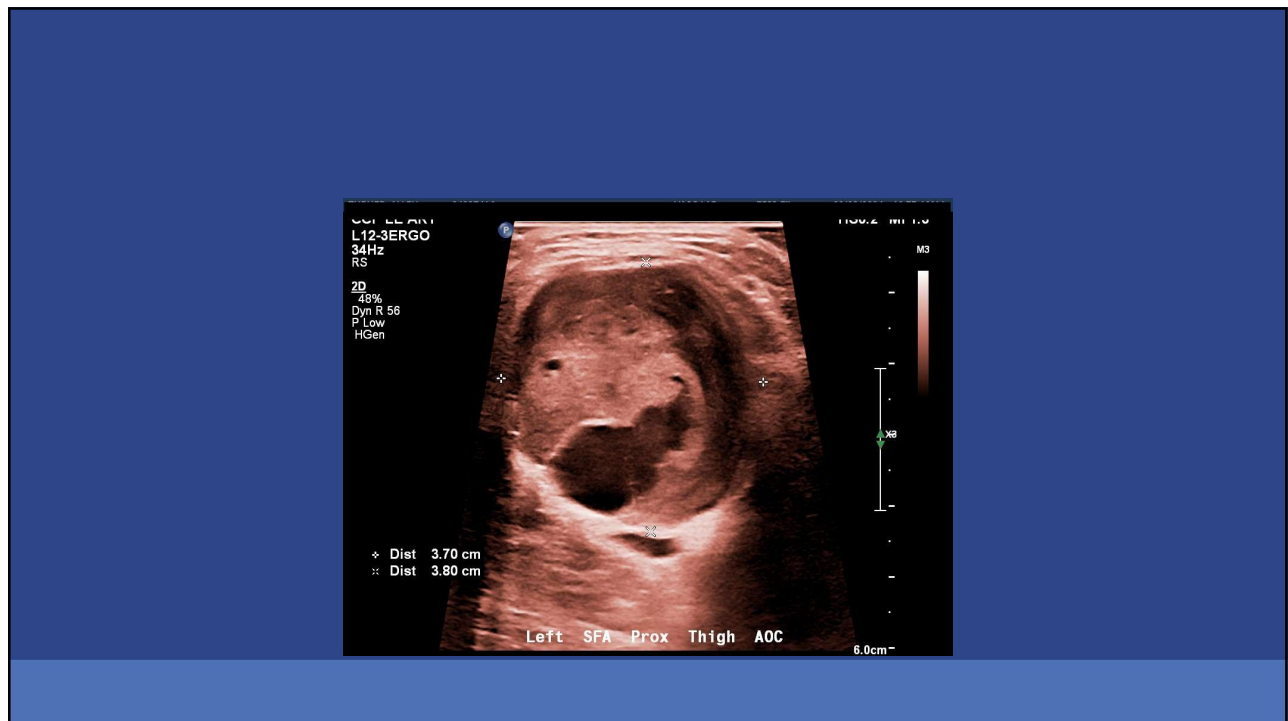


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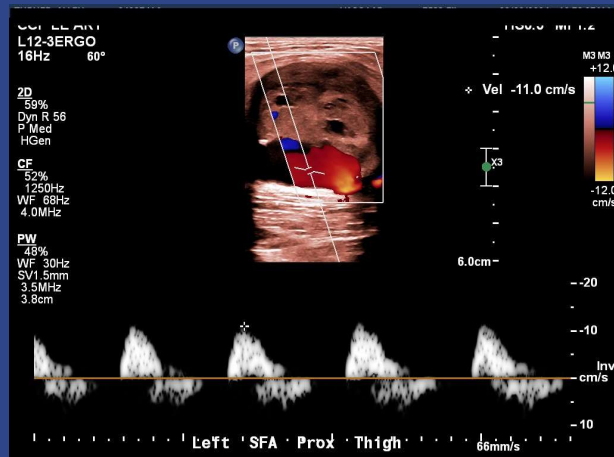


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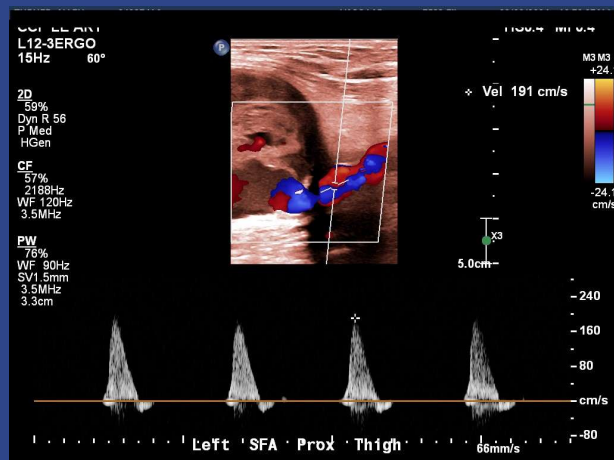


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- Ruptured femoral artery due to nick in vessel because of a gunshot wound

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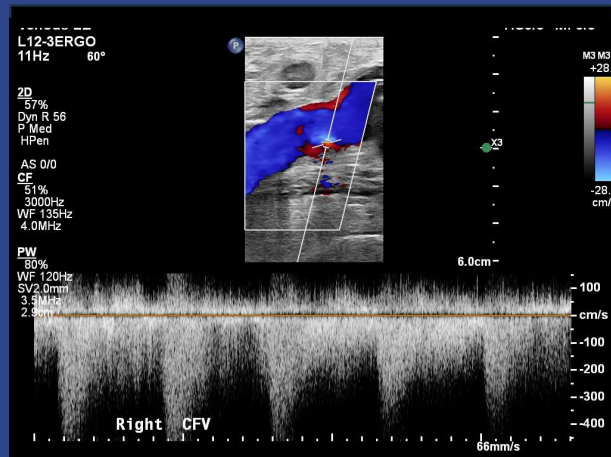
Arteriovenous fistula

An arteriovenous fistula (AVF) is an abnormal connection between an artery and a vein. Normally, blood flows from arteries to capillaries and then into veins. With an AVF, blood bypasses the capillaries and flows directly from the artery into the vein. This abnormal connection can be congenital, caused by injury, or intentionally created for dialysis access.

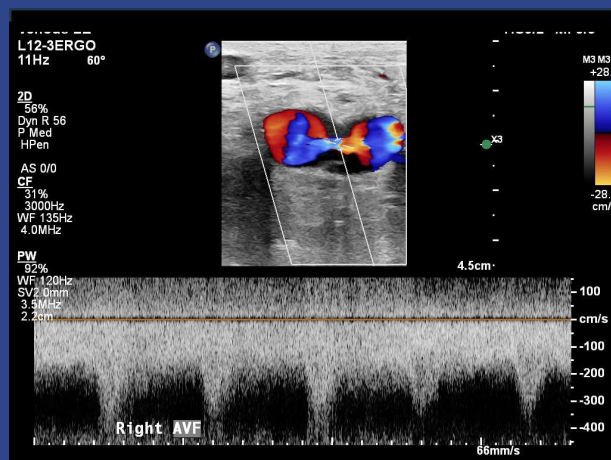
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AVF CFA-CFV

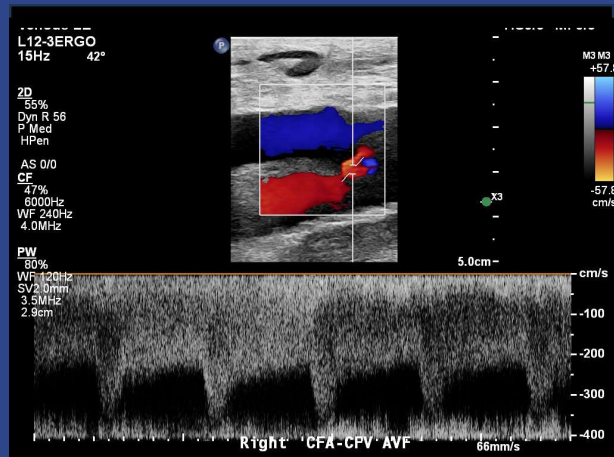


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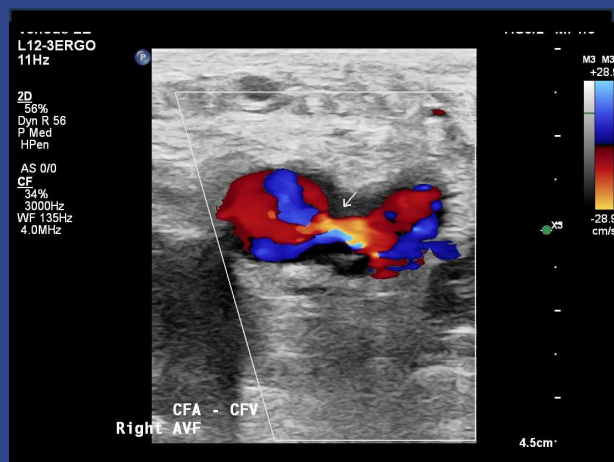


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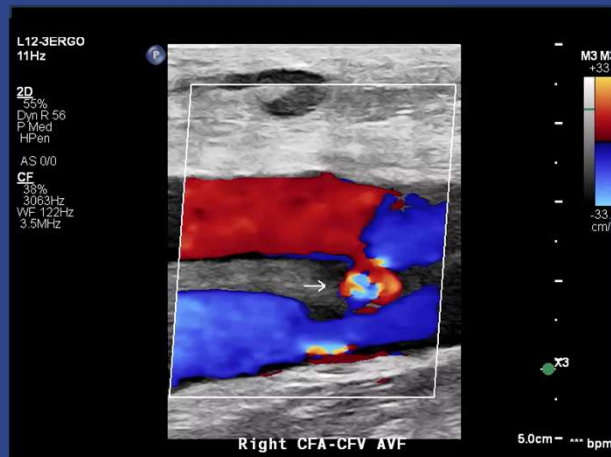


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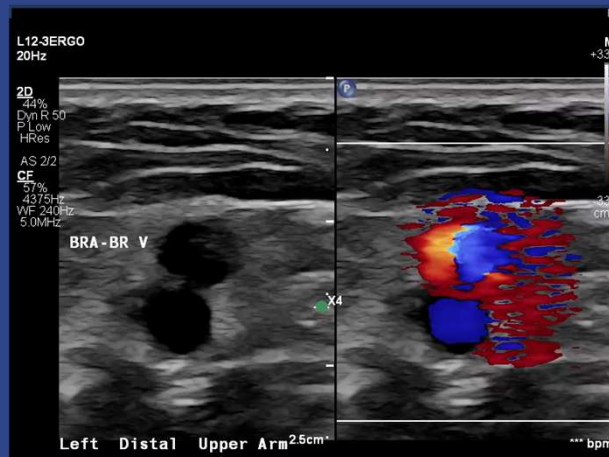
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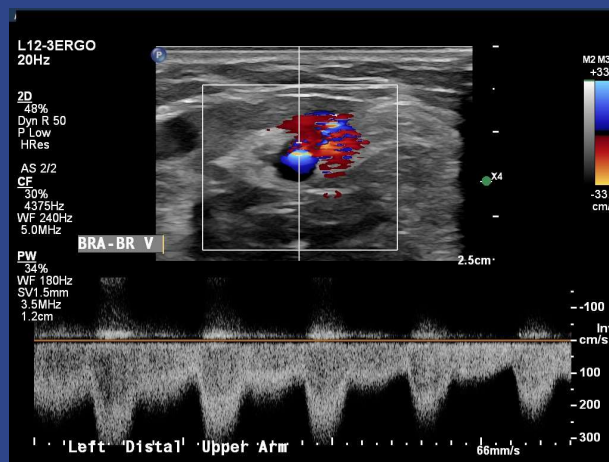
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Upper extremity venous study- AVF



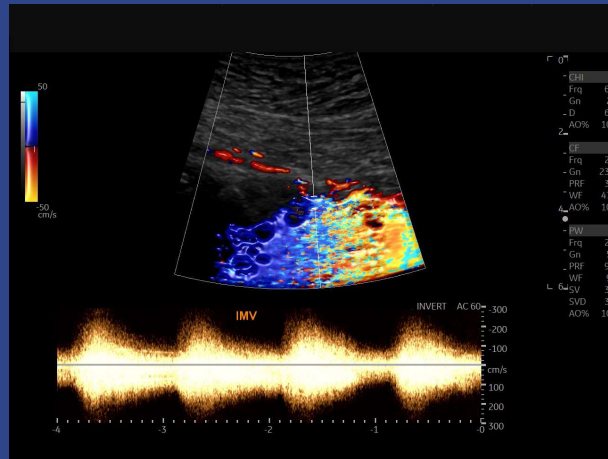
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IMV-IMA AVF



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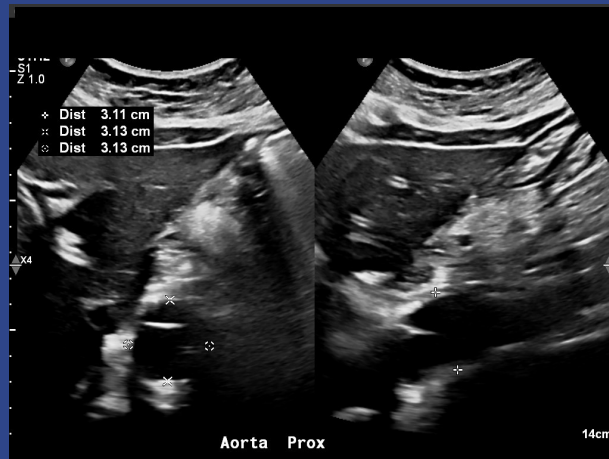
Dissection section

- An arterial dissection is a tear in the wall of an artery that allows blood to enter and separate the layers of the artery wall. This separation creates a false lumen, a space filled with blood, that can narrow or block the true lumen (the normal artery channel).

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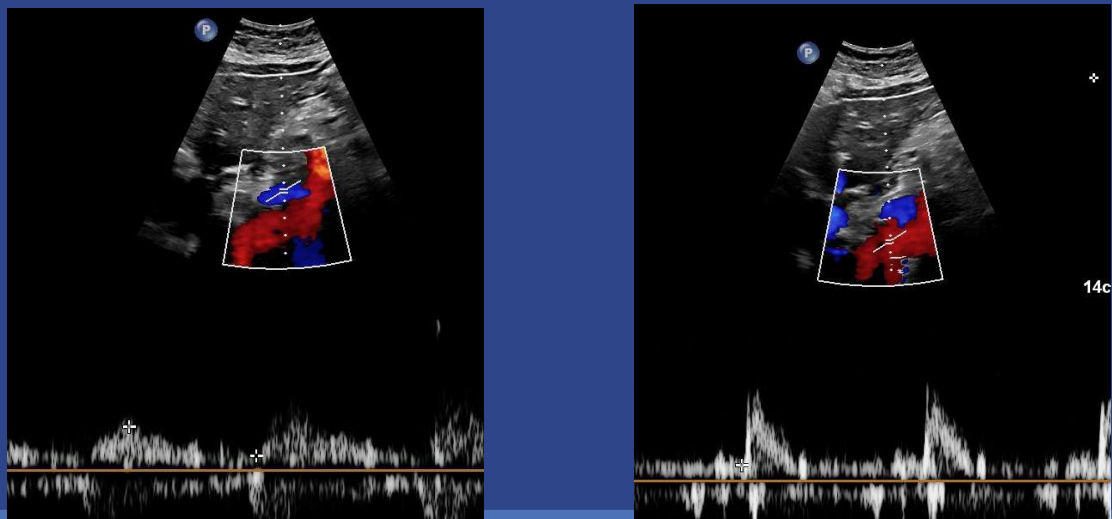
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Aortic dissection - example



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Aortic dissection - example



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Aortic dissection - example

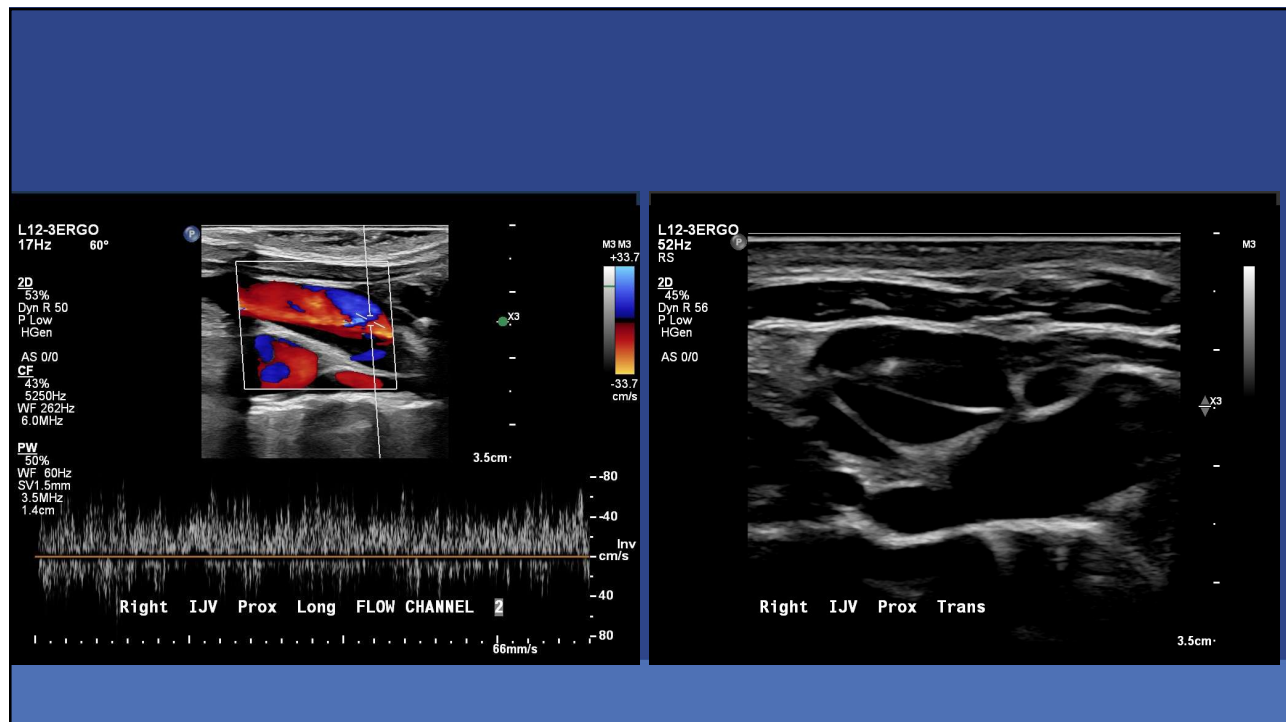


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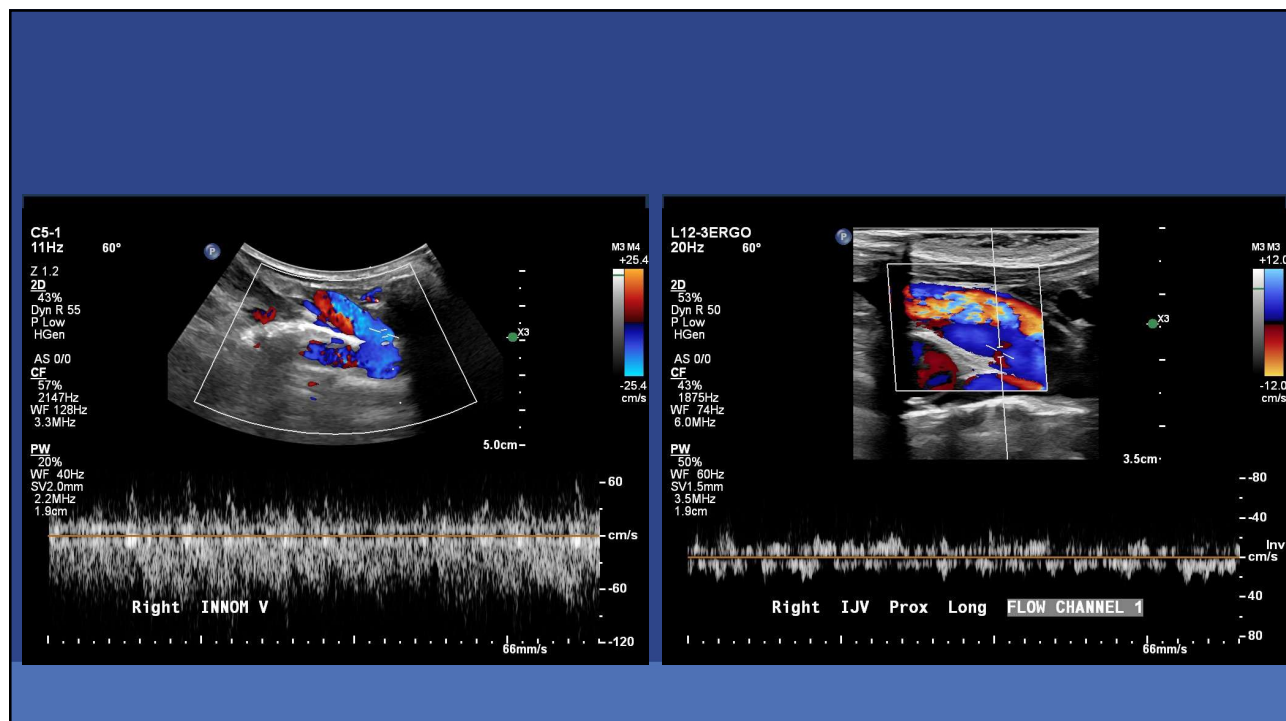
Is it Live or is it Memorex?

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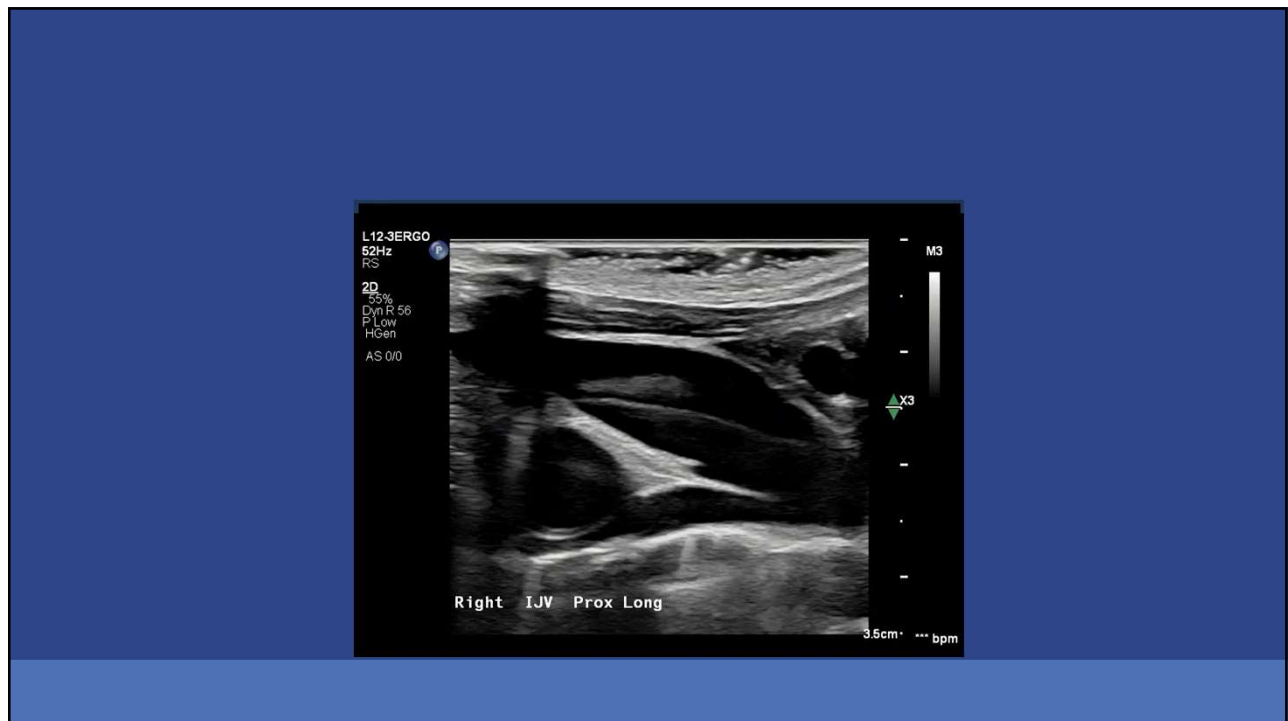


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IJV dissection flap vs prominent valve cusp



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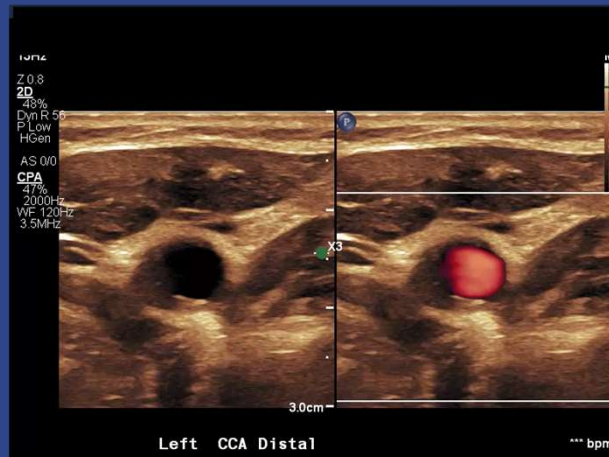
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IJ Dissection flap vs. Prominent
Valve Cusp?

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Carotid artery dissection



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Carotid artery dissection



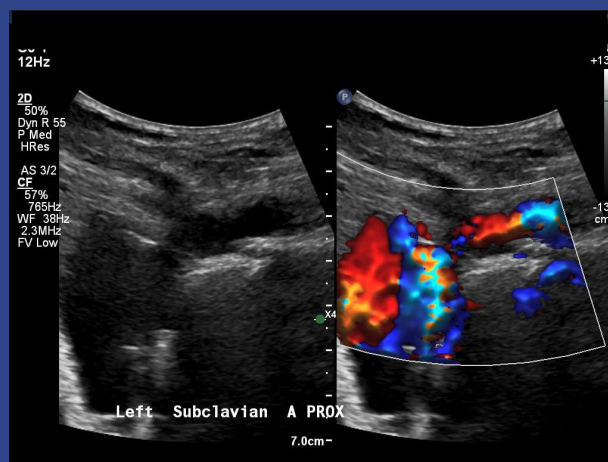
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SCA aneurysm found on a venous study

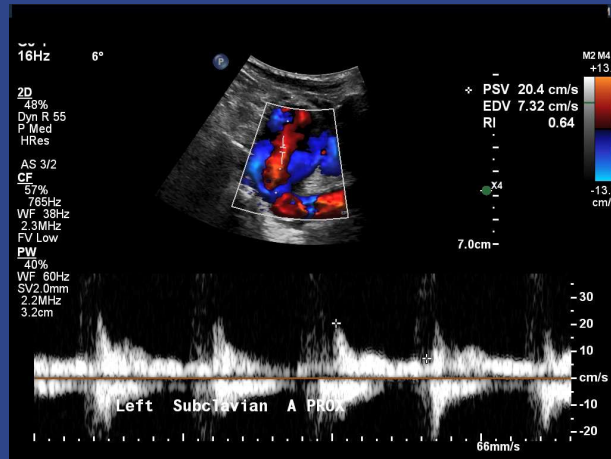


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Extrinsic compression

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Extrinsic compression of IJV



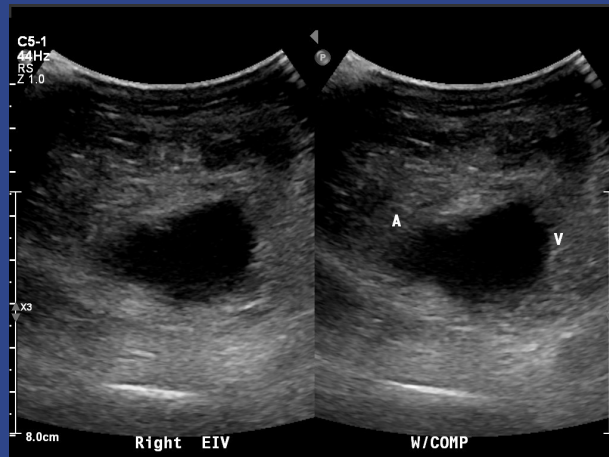
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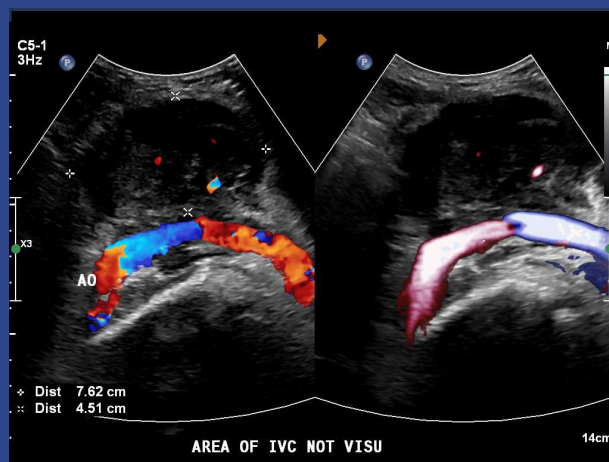
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Extrinsic compression causing distal DVT



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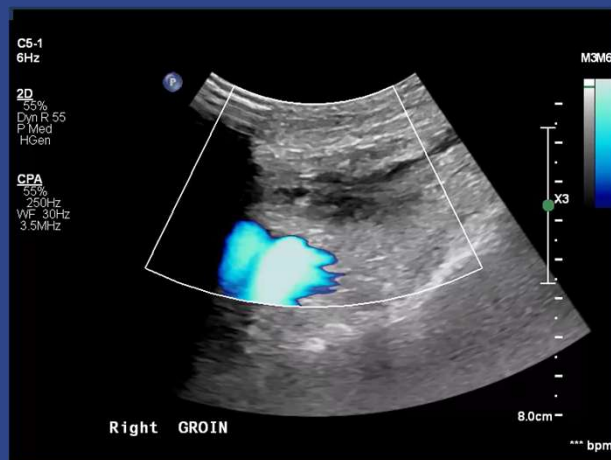
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6 months later - rescan



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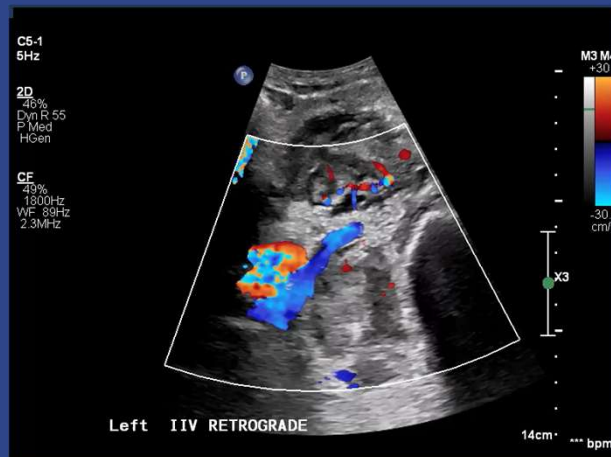


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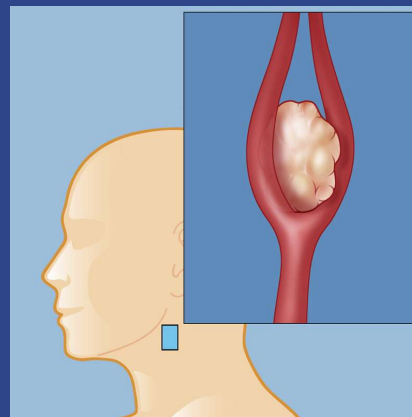
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Carotid body tumor

- A carotid body tumor (CBT) is a slow-growing, often benign (noncancerous) tumor located at the carotid bifurcation, where the common carotid artery splits into the internal and external carotid arteries in the neck. These tumors are also known as paragangliomas or chemodectomas.

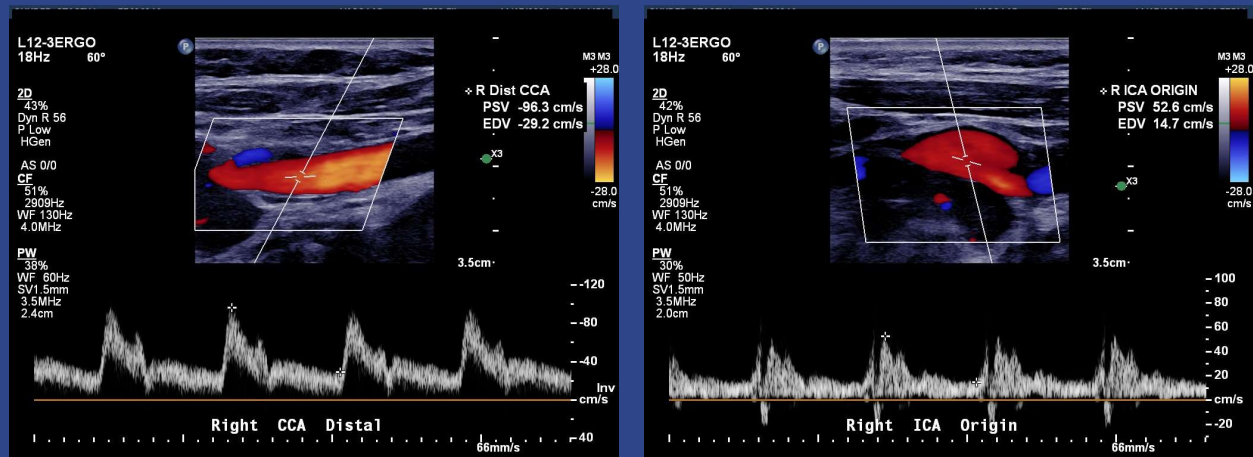


<https://neurosurgery.weillcornell.org/condition/carotid-body-tumors>

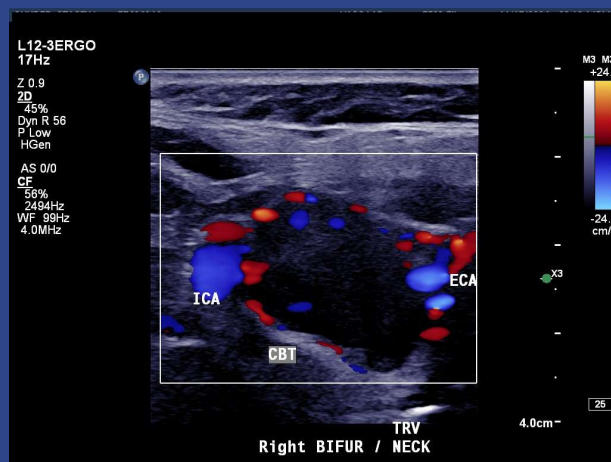
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Carotid body tumor

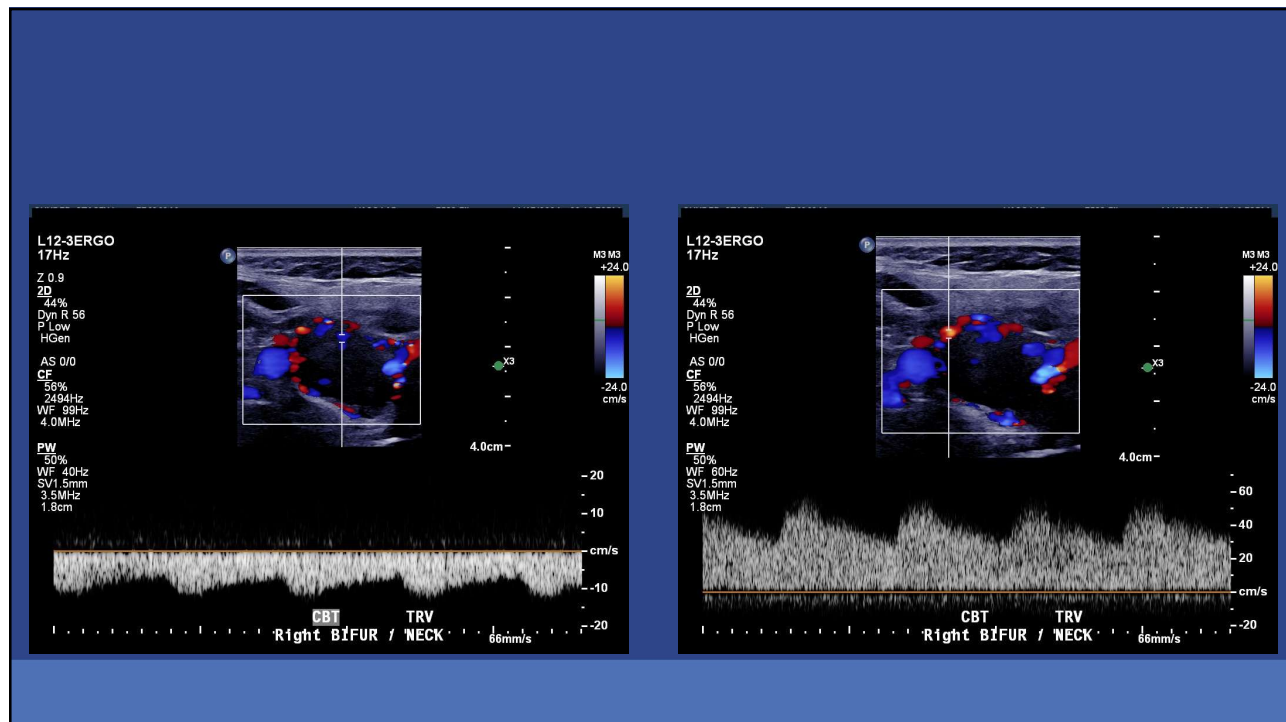


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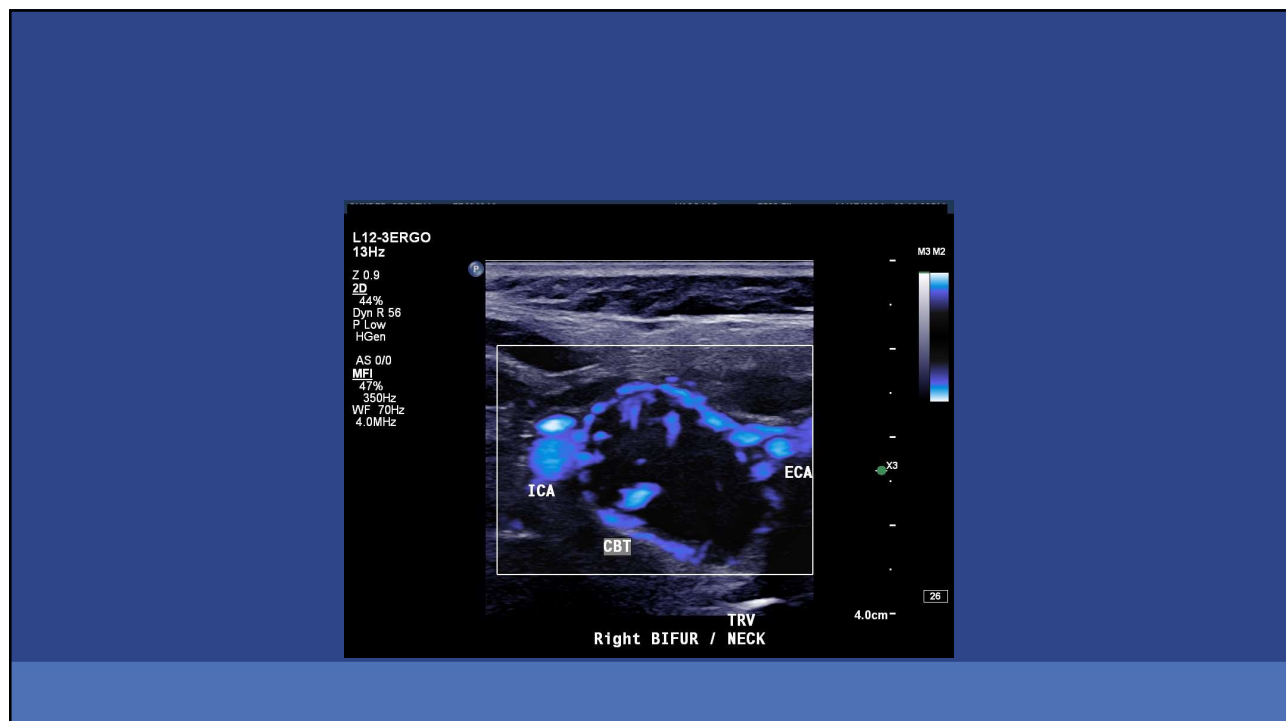


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When is a lymph node more
than a lymph node?

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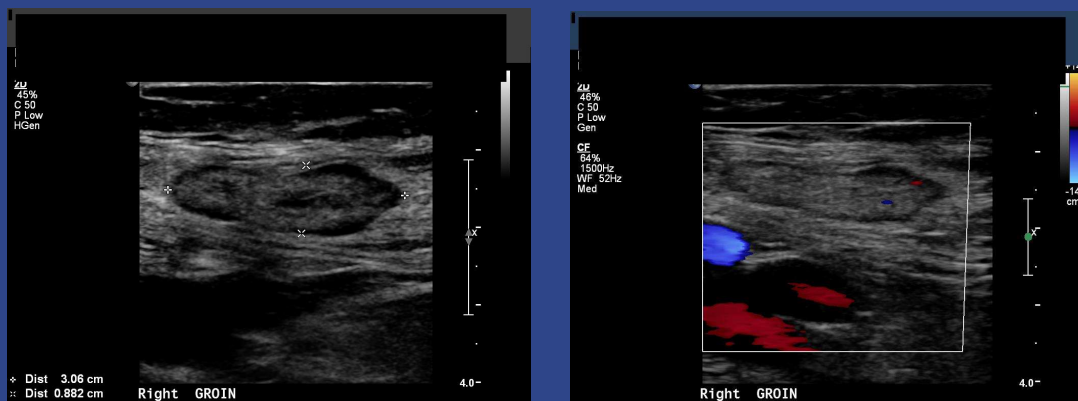
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Normal lymph node



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Enlarged lymph node



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Right groin – transverse view



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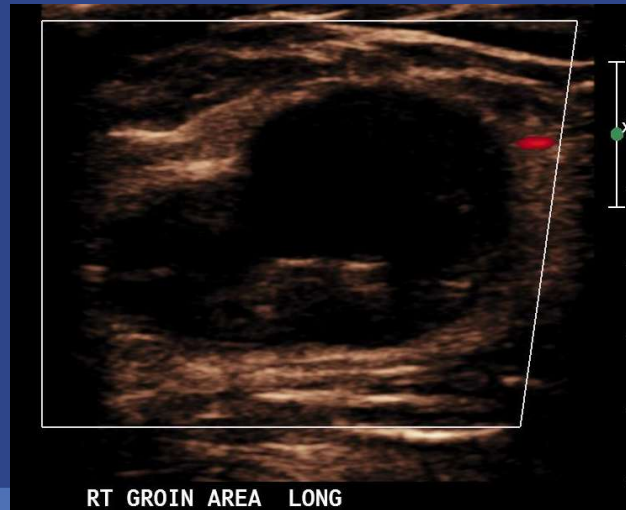
Right groin – transverse view



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Right groin – sagittal view



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Right groin – sagittal view



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CT ordered



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CT – performed

Scans through the pelvis show a right inguinal soft tissue nodule of 3.0 x 2.4 x 2.6 cm. Central low density suggests necrosis.

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Biopsy performed

- GROSS DESCRIPTION

Received fresh is a single ovoid tan-pink soft segment of tissue resembling a lymph node and measuring 2.0 x 1.9 x 1.5 cm. The specimen is sectioned to reveal multiple irregular white caseous areas and a 1.3 cm hollow area.

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Biopsy results

- Lymph node, right groin, excision - Metastatic squamous cell carcinoma (1.9cm) involving one lymph node

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Two days later

- Discovered that this was a malignant neoplasm that had metastasized from the anal canal
 - Stage IIIB anal canal cancer
 - Involving lymph nodes
 - 80% of necrotic lymph nodes are caused by cancerous processes.

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Significant to note

- Patient had a colonoscopy with the last three years
- No GI symptoms
- No change to bowel habits

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Swollen Groin Lymph Node - Causes

- Cancers and Tumors
 - Leukemia
 - Lymphoma
 - Pelvic malignancy
 - From anus or vulva
 - Melanoma

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Swollen Groin Lymph Node - Causes

- Viral infections
- Bacterial infections
- STD's
- Toxoplasmosis
- Bubonic plague
- Systemic diseases
 - Sarcoidosis
 - Lupus
 - Rheumatoid arthritis
- Side effect from medications/vaccinations

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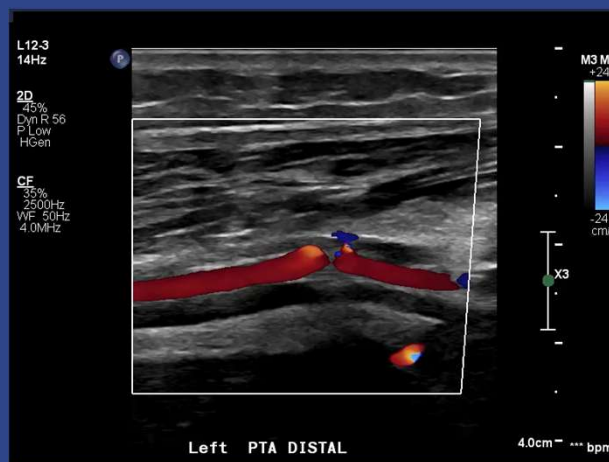
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Arteriovenous malformation

- An arteriovenous malformation (AVM) in an extremity is a tangle of abnormal blood vessels that connects arteries and veins, bypassing the normal capillary system. In an AVM, the tiny vessels that typically connect arteries and veins are missing, causing high-pressure arterial blood to flow directly into veins. These malformations can occur anywhere in the body, including the extremities, and may be present at birth or develop later in life.

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AVM lower leg



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AVM lower leg



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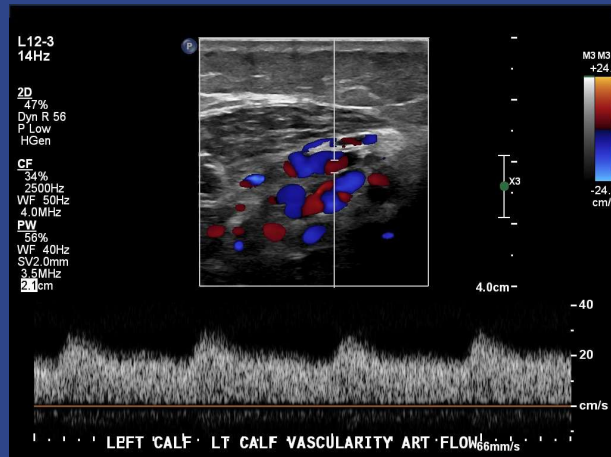
AVM lower leg



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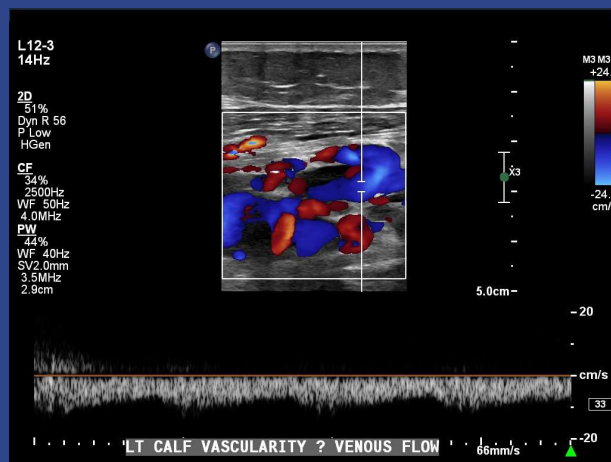
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AVM lower leg



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AVM lower leg



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Is there an AVF to add to the AVM?



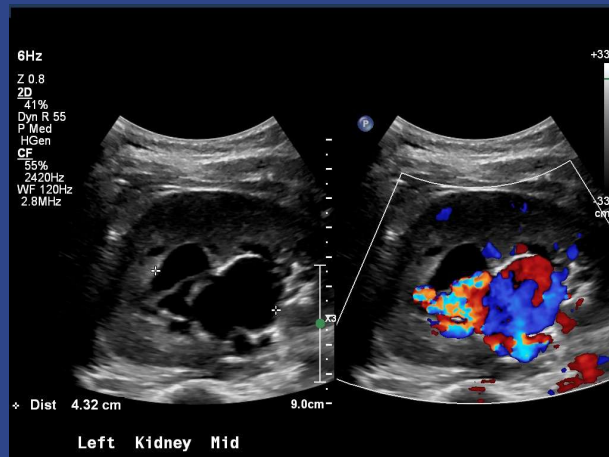
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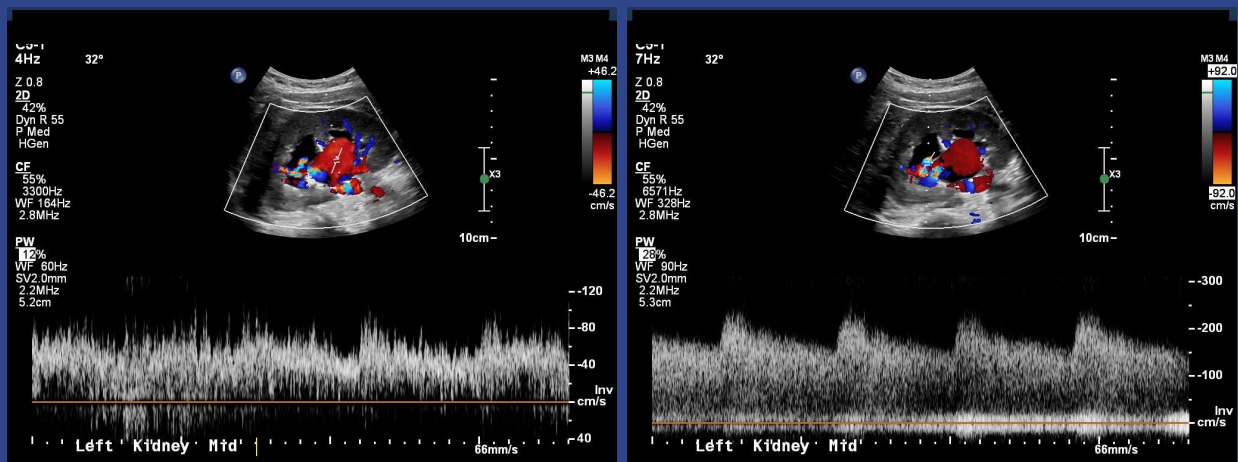
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AVM left kidney



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AVM left kidney



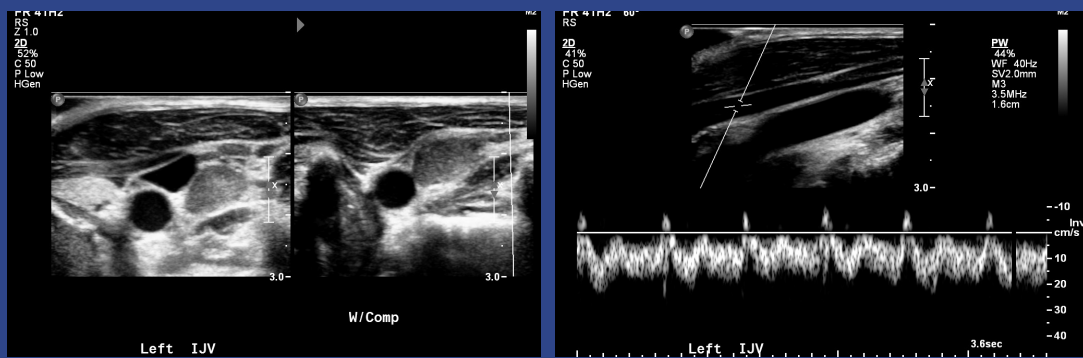
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Kaposi's sarcoma

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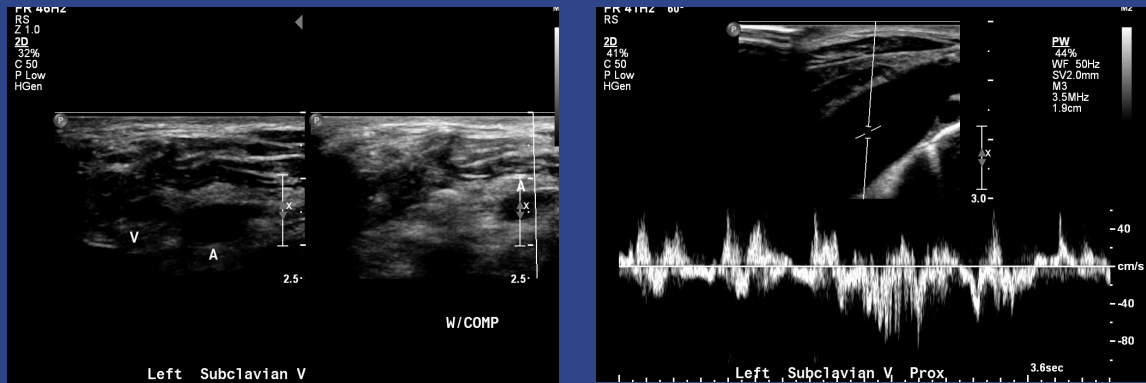
Ultrasound Findings – Normal IJV



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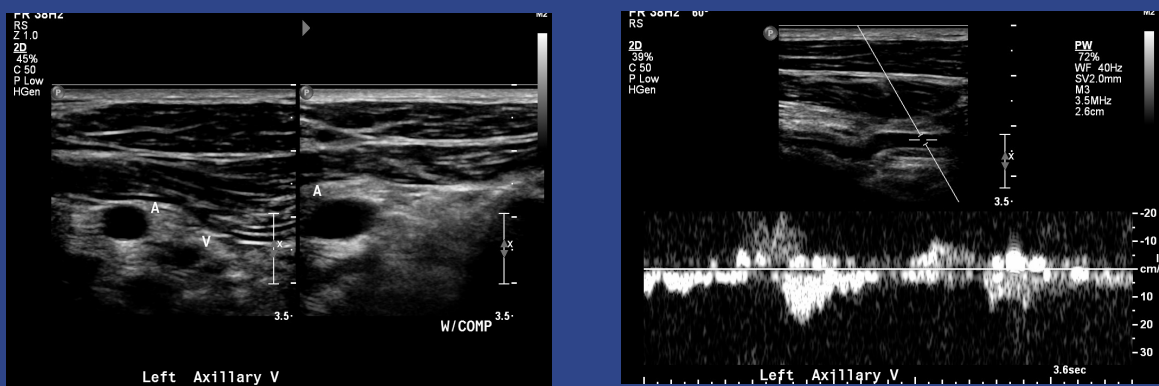
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Ultrasound Findings- Unremarkable Subclavian Vein



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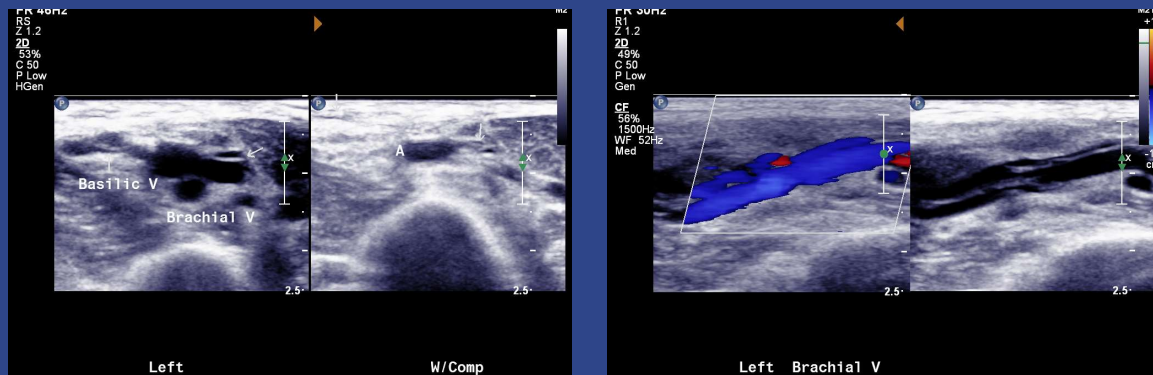
Ultrasound Findings- Patent Axillary Vein



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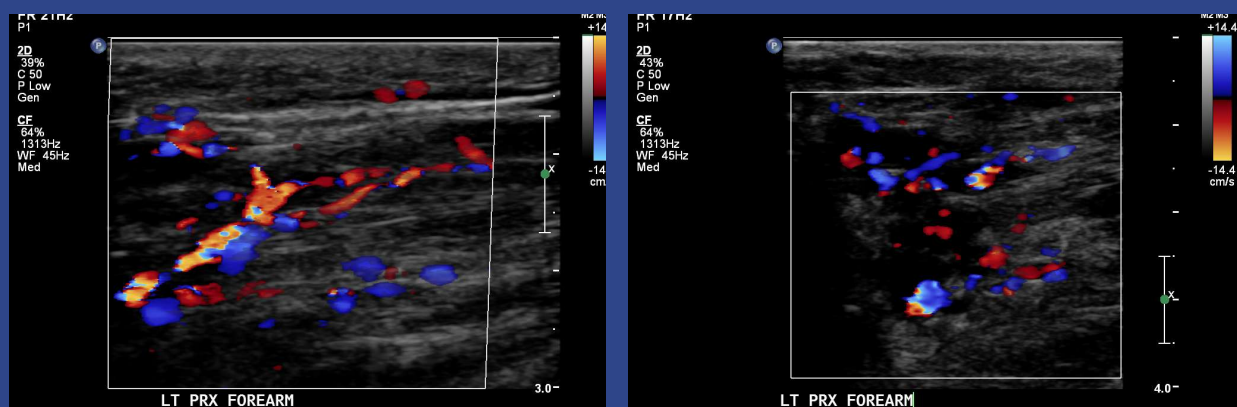
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Ultrasound Findings- Brachial Vein has remote deep venous thrombosis



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Ultrasound Findings – Hypervascularization in left proximal forearm



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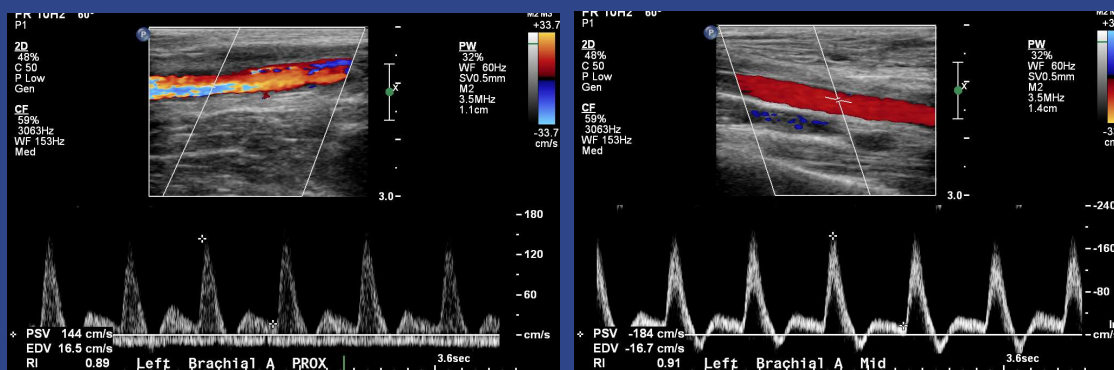
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Ultrasound Findings – Left antecubital fossa to proximal forearm



129

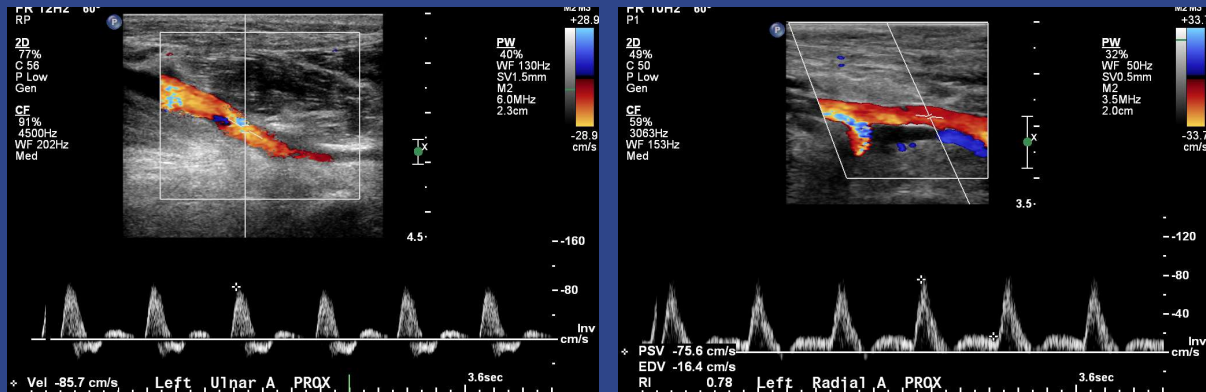
Ultrasound Findings – Normal Brachial Artery



130

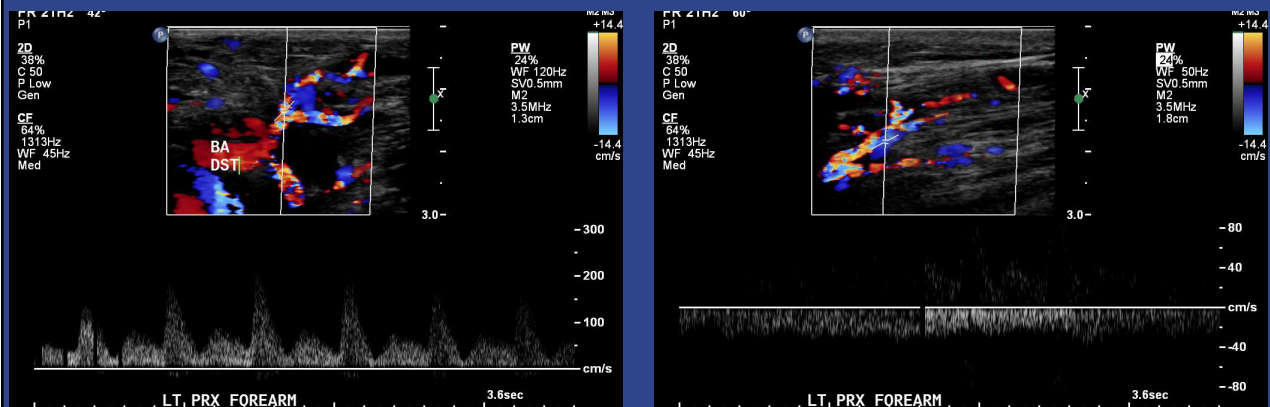
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Ultrasound Findings – Normal Radial and Ulnar Arteries



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Ultrasound Findings – Proximal Forearm - Both arterial and venous flow noted



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Differential dx for the vascular lab

- Arteriovenous malformation
- Pseudoaneurysm
- Neoplasm or sarcoma
- Complex Hematoma

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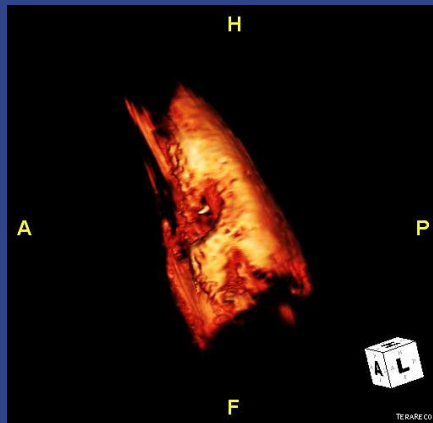
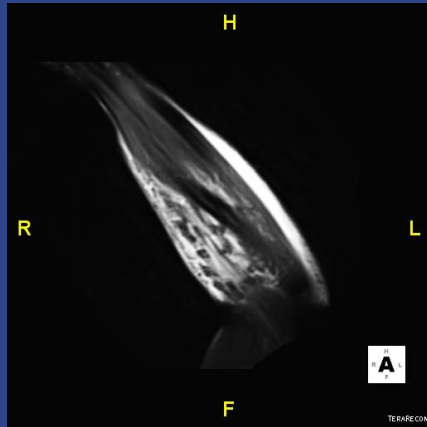
Follow-up testing

- Based on these findings an MRI of the left forearm was performed

134

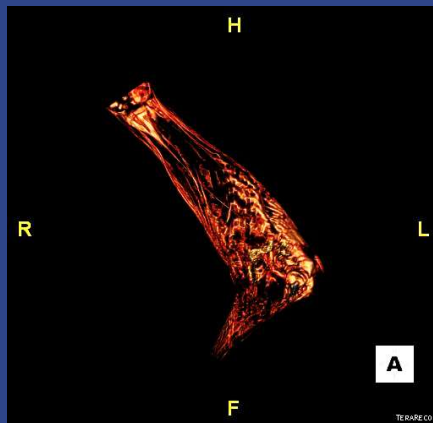
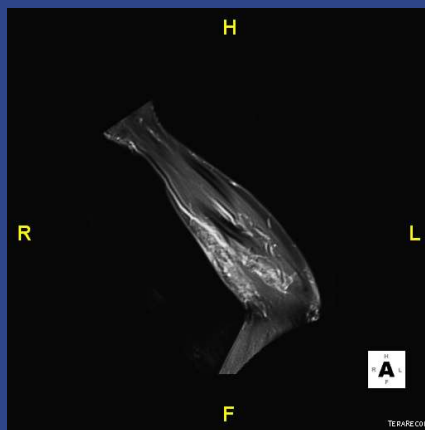
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MRI of left forearm and elbow



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MRI of left forearm and elbow



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MRI Findings

- Diffuse thickening and edema in the sq tissues
- Abnl fluid-like signal extending into muscles
- No focal fluid-collection or abscess
- Normal bone marrow signal
 - No acute fracture
 - No marrow replacing lesion

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So, What is the diagnosis?

- Kaposi's Sarcoma
 - Lt arm
 - Lt auricular LN
 - Diagnosed from excisional bx of enlarged lymph node
 - Lt upper lung
 - Discovered on bronch one month later

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Kaposi sarcoma - Definition

- Described in 1872 by Dr. Moritz Kaposi
- Felt to be rare form of relatively benign cancer
 - Usually occurred in men of Mediterranean lineage
 - Later found in cancer or transplant patients undergoing immunosuppressive therapy

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Kaposi sarcoma – AIDS Related or Epidemic – Modern times

- Develop in association with HIV and AIDS
 - especially among homosexual men
- Called AIDS-related Kaposi sarcoma
- Develops from cells that line lymph or blood vessels
- Typically causes tumors in the sq tissues or in the mucous membranes of the mouth, nose, or anus
- Can be deadly for a patient with AIDS, specifically if the lesions are in the lungs, liver, or digestive tract

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Kaposi sarcoma – signs/sxs

- Appear as blush-red, brown, purple blotches on the skin
- Lesions are rich in blood vessels, cancer cells, and WBCs
- Can appear on any part of the body
 - Either internal or external
 - Can appear at more than one place in the body at the same time
 - Only type of cancer this can happen
- Bloody sputum
- Shortness of breath
- Swelling in legs, groin area, or skin around eyes
- Fever, weight loss, or diarrhea

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Kaposi sarcoma – typical appearance on skin



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Example of keloid



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Carotid artery exam on 17 yo pt with Loeys-Dietz syndrome

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Aneurysmal Right Vertebral Artery



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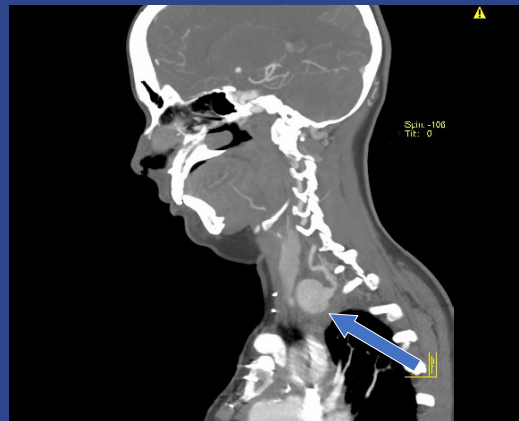
Aneurysmal Left Vertebral artery



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CTA showing aneurysmal left vertebral artery origin



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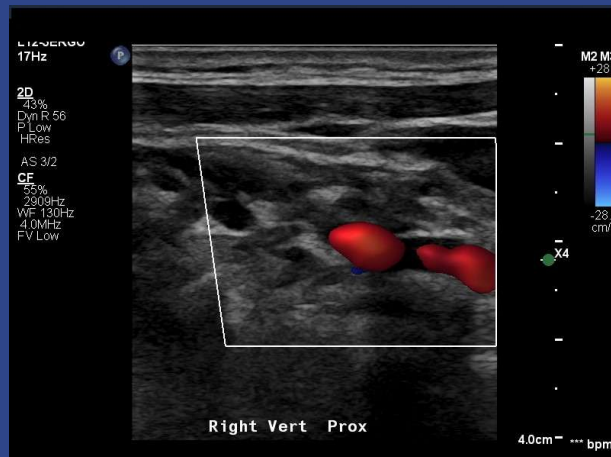
Left vertebral artery - retrograde



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Vertebral FMD



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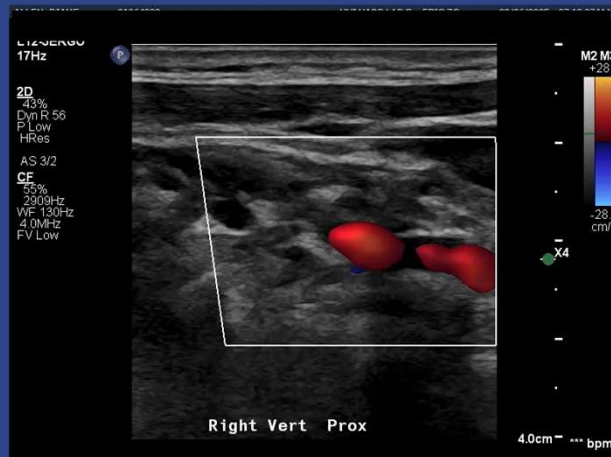
Vertebral FMD



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Vertebral FMD



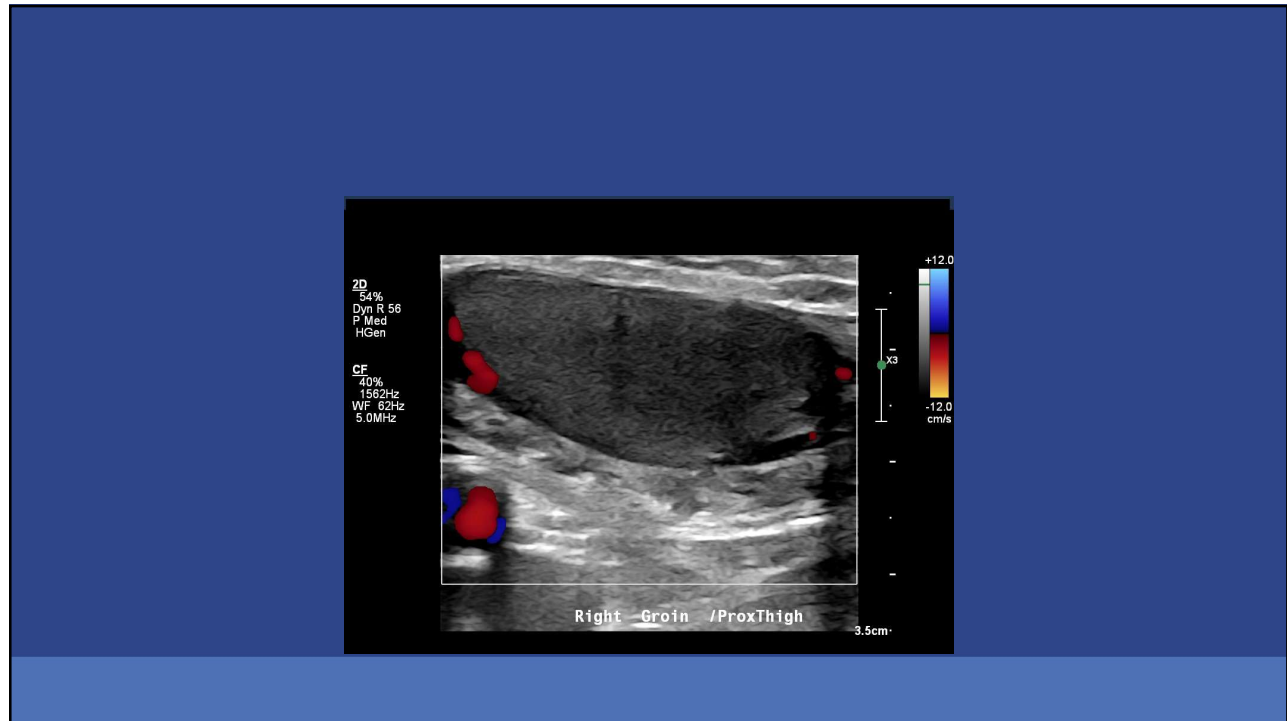
151

Bonus Round

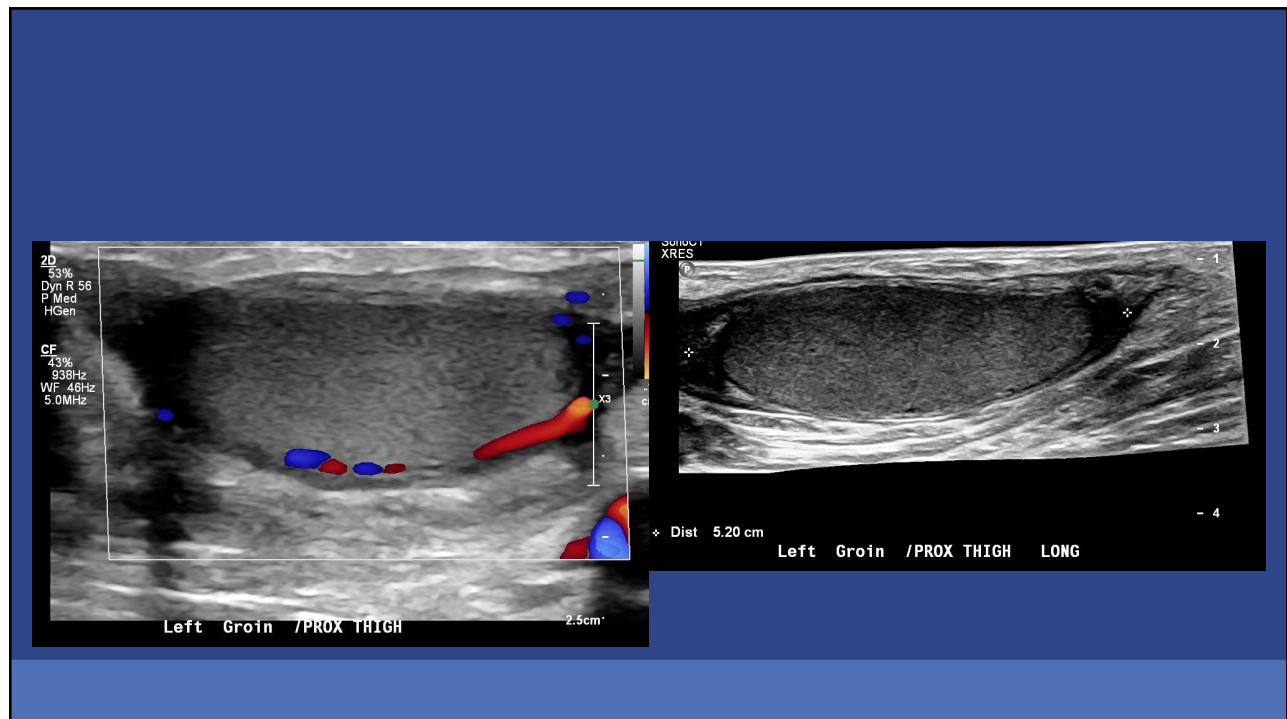


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Thank you!

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Thank You

- SDMS
- Cleveland Clinic Vascular Lab for all the ultrasound images
- Cleveland Clinic Imaging Institute for the CT images

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Reference

- Anton G, Burket K, Digiannantonio A, et al. *Cleveland Clinic Foundation Non-invasive Vascular Laboratory Protocols and Procedures Manual*. Cleveland, OH; Cleveland Clinic Foundation; 2013.