

Chief Complaint

Elbow Pain and Swelling

HPI

Approximately 30 y/o patient presented to the ED for evaluation of pain and swelling of their left elbow. Patient has a history of IVDU and states that they noticed swelling in their left elbow area and that it has worsened over the past 2 weeks. They state that they went to an outside hospital yesterday but left against medical advice before their workup was complete. They note that they have been having intermittent bleeding in this area and reports that the bleeding has been bright red and brisk. They deny any fevers, chills, pain with movement of the joint, or pus coming from the wound

Physical Examination

General: Well appearing, no acute distress

HENT: Moist mucous membranes

Cardiovascular: Normal rate and regular rhythm

Lungs: Normal breath sounds

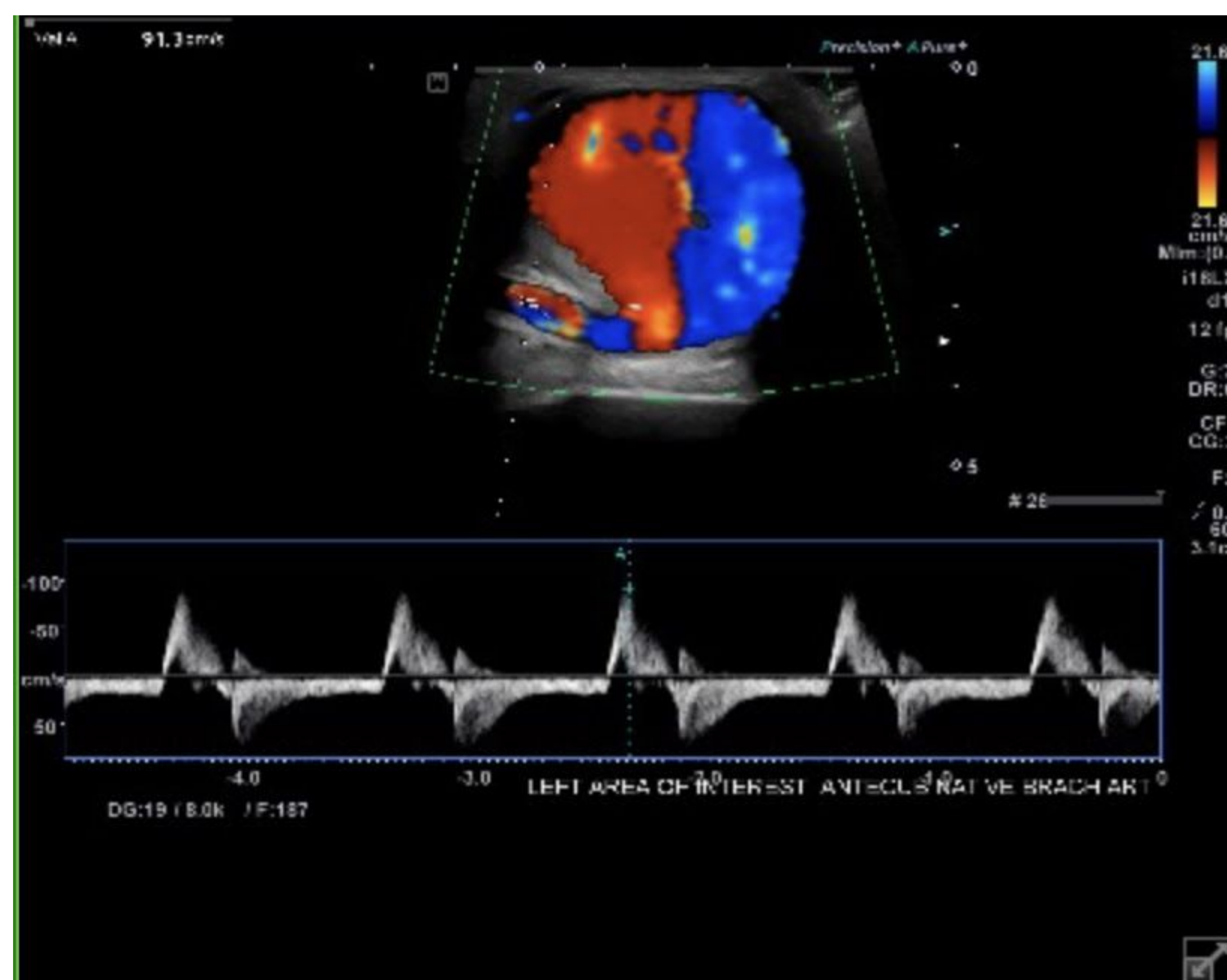
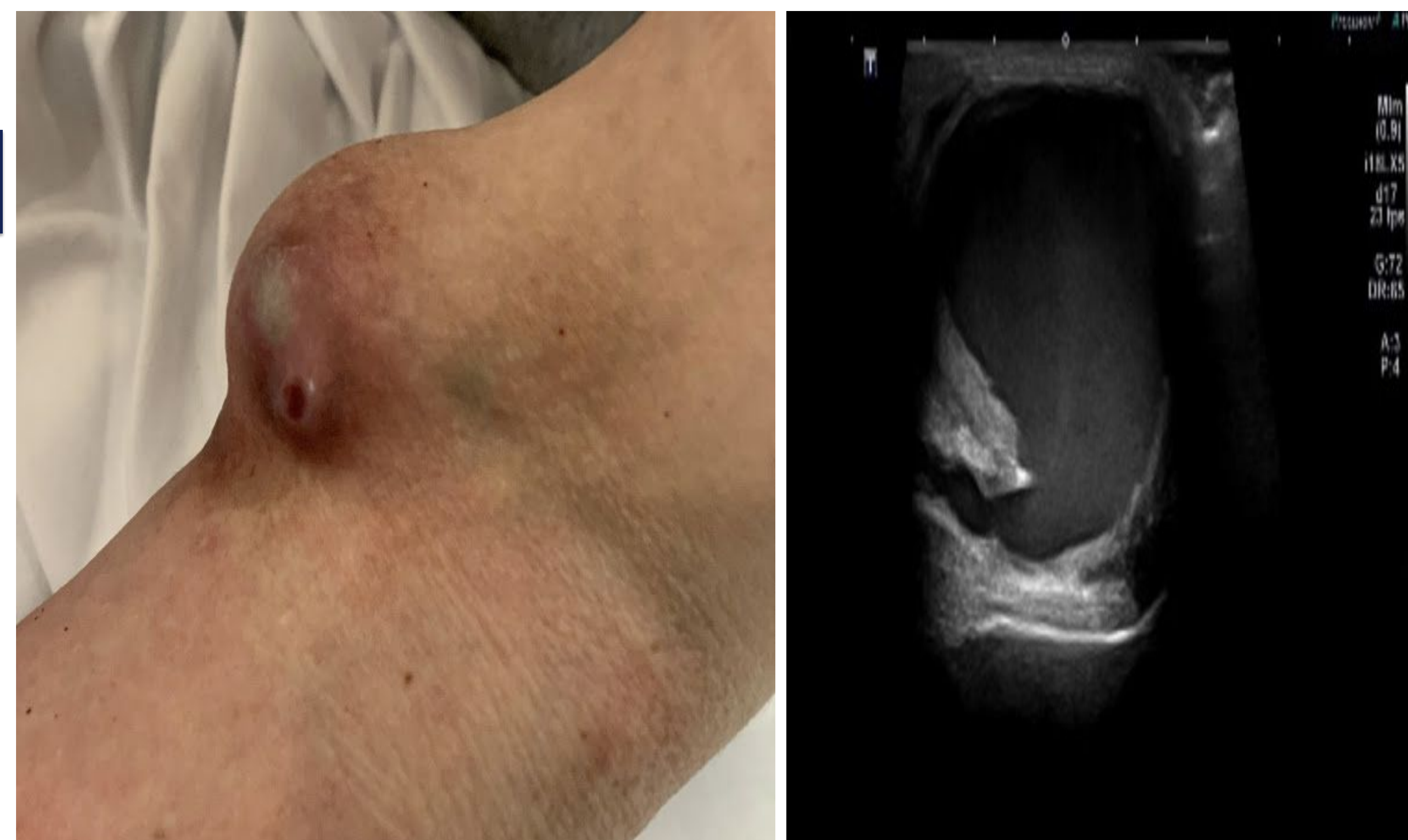
Abd: Soft, nontender to palpation

Musculoskeletal: Large pulsatile mass at left AC measuring about 4cm; small area of necrosis; no bleeding appreciated but palpable thrill noted

Skin: Mild erythema over left AC mass

Neurological: No focal deficit; alert and oriented x3

Pertinent Imaging



Clinical Pearls

- POCUS is a useful tool to evaluate a soft tissue mass and determine if it is vascular, or infectious in nature.
- Patients with a history of IVDU are at increased risk of pseudoaneurysm formation and can have life threatening complications if not properly treated.

Case Discussion

Patient was taken for Ultrasound which showed a 3.6 x 2.8 x 3.9 cm patent pseudoaneurysm arising from the brachial artery at the AC with a 5.1mm neck. It also showed a focal track from the anterior wall of the pseudoaneurysm extending nearly to the skin surface. The US color flow showed a “ying yang” sign of blood flow and the doppler study showed the “to and fro” sign. The patient did not have any additional bleeding and was transferred to a tertiary care hospital and was evaluated by vascular surgery in the ED and was taken emergently to the OR. While in the OR the patient had a left brachial artery excision and a right greater saphenous vein harvest. The GSV was then anastomosed with the two ends of the brachial artery. The patient tolerated the procedure well and was extubated in the PACU. Repeat ultrasound showed patent flow through the graft. Unfortunately, on POD #0 the patient left against medical advice as they were upset that security had searched their room.

Clinical Questions

What is a risk factor for this disease process?

Pseudoaneurysms differ from true aneurysms by the layers affected in the vessel. In a true aneurysm, all layers of the vessel are thinned but intact. In a pseudoaneurysm, there is a tear in the vessel wall which leads to periarterial hematoma formation. The majority of pseudoaneurysm formation is from iatrogenic injury. This patient is at increased risk of pseudoaneurysm formation from their history of IVDU.

What is the name of the finding seen on color ultrasound?

It is called the “Ying Yang” sign or sometimes referred to as the Pepsi sign. It shows that there is bidirectional flow due to the swirling of blood in the vessel.

What finding is seen on doppler?

The doppler study shows the “to and fro” sign. While the “Ying Yang” sign can be seen in both pseudo and true aneurysms, the “to and fro” sign is typically seen in pseudoaneurysms. The “to” motion is seen with blood entering the pseudoaneurysm in systole and the “fro” is the blood leaving in a diastole.