

# A UNIQUE CASE OF RUPTURED POPLITEAL ARTERY ANEURYSM

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## Learning Objectives

- Ruptured PAA (rPAA) should be considered in setting of leg swelling, pain, and anemia particularly in a patient on anticoagulation.
- Duplex ultrasound or CTA are effective modalities for diagnosis of Ruptured popliteal artery aneurysm
- Early open operative intervention should be undertaken with the goal of restoring distal limb perfusion and preserving the limb.

## Case Report

**History of Present Illness:** A 72-year-old male with a history of smoking and COPD on 4L home O2. Presented to an outside hospital with 2 weeks of swelling and 3 days of mild pain in the posterior left knee. He denies any anticoagulation use at the time of presentation.

**Physical Exam:** Tachycardic. Swelling in left popliteal fossa with fluctuant induration and erythema. No evidence of expanding hematoma. Left femoral and DP pulses were palpable. Left PT with monophasic signals.

**Labs:** Hemoglobin of 9.5g/dL, INR 1.1, PT 13.9sec, PTT 35.6 sec

**Imaging:** CT showed 11.0 cm x 9.6 cm hematoma in the distal left thigh extending to the level of the popliteal fossa with a foci of contrast extravasation

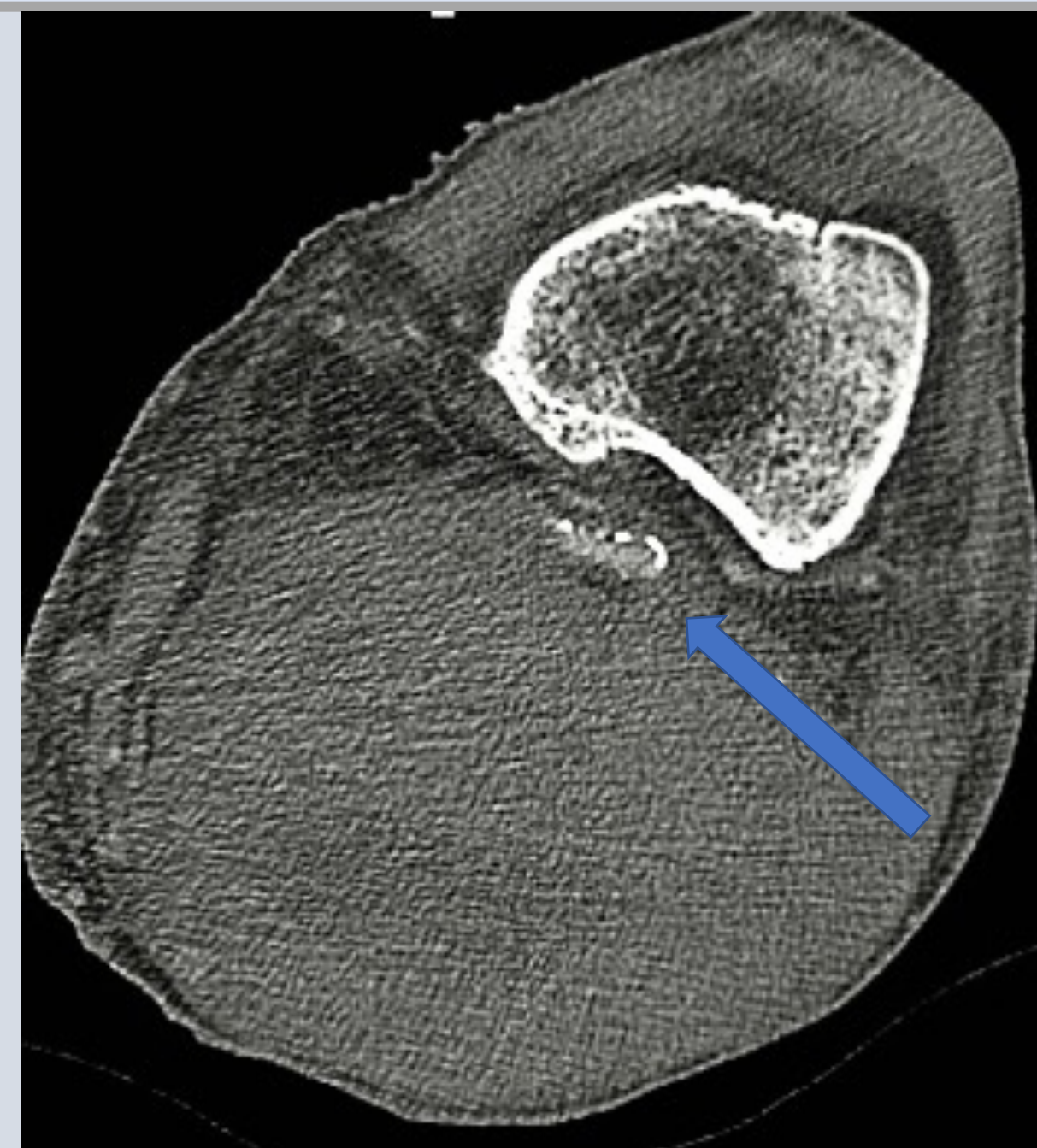
### Results:

Patient was taken to the OR and aneurysm was repaired with an end-to-end bovine graft from the above-knee to below-knee popliteal artery, incorporating the takeoff of the anterior tibial artery.

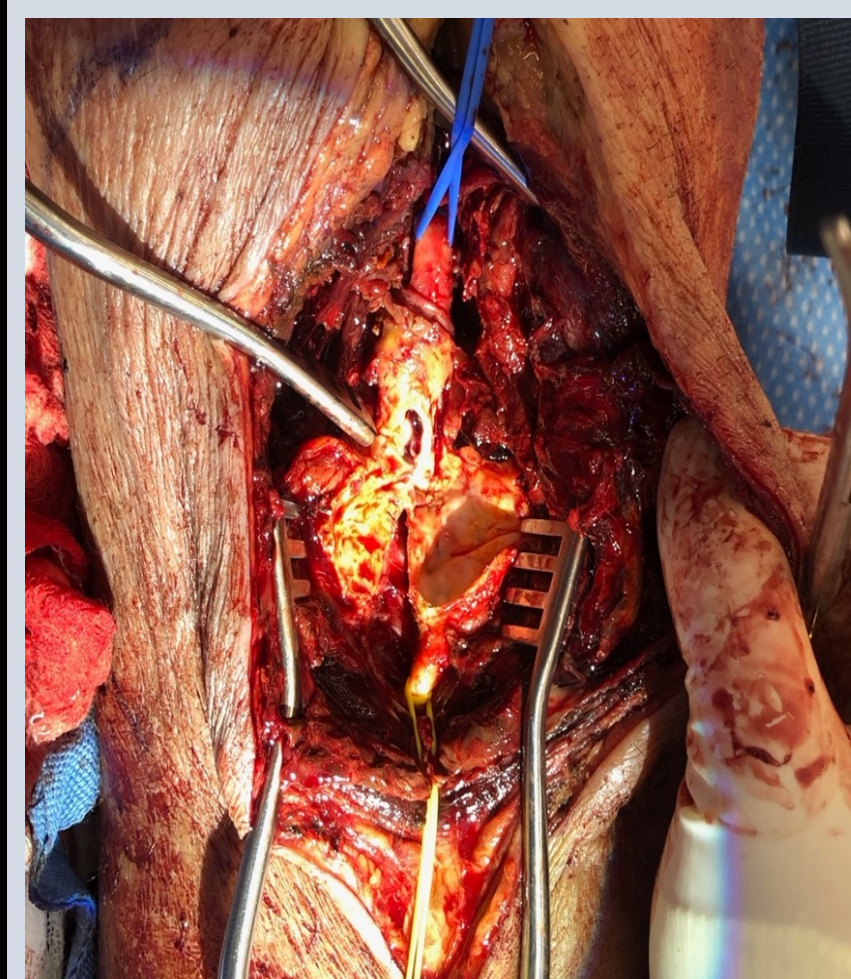
Post operatively: palpable left DP and PT pulses.

Graft was noted to be patent at 7 weeks post-op.

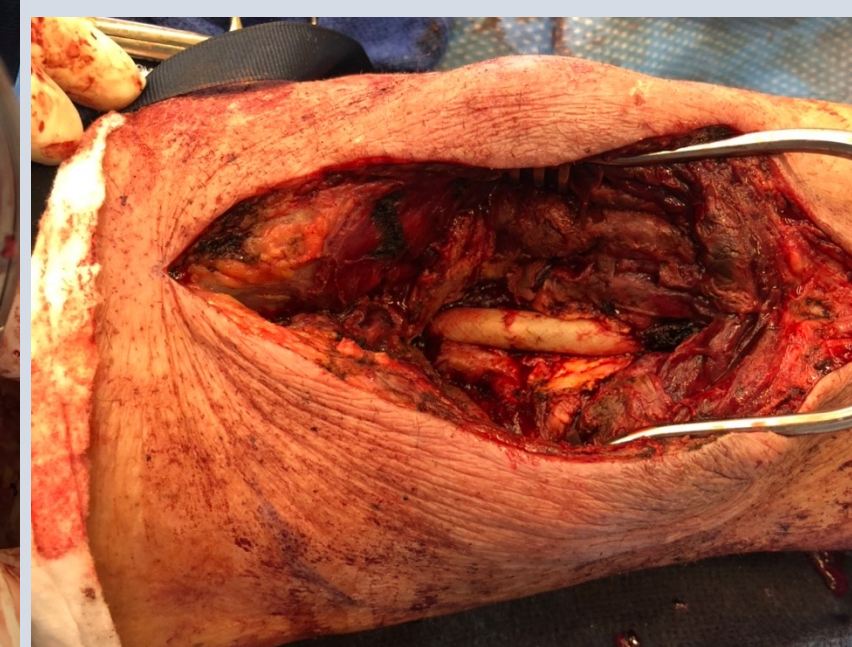
The patient passed away three months following his index procedure due to respiratory complications



CT showing left lower extremity large hematoma of the distal thigh extending to the level of the popliteal fossa approximately 11.0 cm x 9.6 cm. The distal SFA appears compressed by mass effect (blue arrow). Adjacent areas of acute hemorrhage within the hematoma are seen. A wisp of contrast appears contiguous with the popliteal artery.



Photos showing ruptured popliteal artery aneurysm following hematoma evacuation



Photos showing repair of popliteal artery with interposition bovine graft

## Discussion

- Popliteal artery aneurysms (PAAs) are rare, yet they account for 70% of peripheral arterial aneurysms<sup>2</sup>.
- Current guidelines recommend endovascular or open intervention for size >20mm or mural thrombus with the goal of preventing thromboembolic complications and limb loss<sup>1</sup>.
- Limited studies have found that of PAAs requiring intervention, only 2.3% are due to rupture<sup>3</sup>.
- Most frequent symptoms of rPAAs are leg swelling and pain which can lead to misdiagnosis of DVT, Bakers cyst, or abscess<sup>3</sup>.
- Cervin et al noted anticoagulation use in almost half of the patients with ruptured PAAs.
- Symptoms usually include leg swelling, pain, and anemia particularly in a patient on anticoagulation.
- Duplex ultrasound or CTA can be used to confirm suspected diagnoses.
- When a ruptured PAA is identified operative intervention should be undertaken to control bleeding, re-establish distal flow, and evacuate the resultant hematoma<sup>3,4</sup>.
- Circumferential control and dissection of the artery can often be avoided, reducing the risk of damage to surrounding structures<sup>4</sup>.
- Studies have shown 1-year survival rate of 57.8% for those with repaired ruptured PAAs, of those, graft patency was seen in 90.9%.<sup>3</sup>

### References

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