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A 88 years old gentlemen with history of smoking and hypertension, presented to emergency department for sudden onset right lower limb pain, paresthesia and feeling of coldness. Initial doppler ultrasound show bilateral popliteal artery aneurysm while the right side was occluded with thrombus. No doppler signal can be detected below the knee. Patient was send to cath lab for emergency revascularization. Angiogram showed filling defect from distal SFA and complete no flow distally.

Procedure start with aspiration thrombectomy, however impossible to remove large amount of thrombus. Antegrade wiring was difficult as hard plaque and not knowing the vessel course. Traditional way of retrograde puncture was limited as distal vessel collapsed with no flow. Hence venous IVUS was utilized to guide both distal puncture and intra vascular wiring. Sheath inserted to CFV with wire and IVUS down to below knee vein. Eventually peroneal artery was punctured , retrograde wire with micro-catheter up to distal popliteal artery. With venous IVUS guide, hard distal cap can be puncture safely with high penetration wire. Successful wire rendezvous and externalized. Popliteal artery aneurysm was treated with complete coverage of stent graft and achieving excellent angiographical result.

Keypoints to highlight:

Wiring inside aneurysm can be extremely difficult due to its size and torturousity.

Venous placed IVUS provide and alternative option when traditional intra arterial IVUS is not possible.

IVUS guided distal extremity puncture / tip detection reentry can be done even when IVUS is placed in vein next to the artery.

Stent graft is a reliable treatment option for thrombotic occlusion / aneurysm and to prevent future recurrence.