

# Axillary to Profunda Femoris Artery Bypass for Lower Extremity Ischemic Ulceration

Emily Rey, DO; Edwin Acosta, MD; Rople Risam, MD; Kristian Hochberg, MD

ArnotHealth

Arnot Ogden Medical Center, Diagnostic Radiology Department, Elmira, NY

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## BACKGROUND

A 73 year old male presented to the vascular clinic with ischemic ulceration of his left sided Above Knee Amputation (AKA) stump. His symptoms were sequelae of failed axillary-bifemoral and left axillary-femoral grafts. On Computed Tomography (CT) angiogram, with runoff to the lower extremities, much of the blood supply to the left lower extremity appeared supplied by collaterals from the left profunda femoris artery. Given his non healing stump ulceration and failure of frontline bypass surgeries, a left axillary to profunda femoris artery bypass with ring PTFE was performed. At follow up after his operation, his symptoms improved and he denied tenderness of his AKA stump. However, given the length of graft material and increased risk of graft failure in the setting of extensive vascular disease, it later required thrombectomy and revision with muscle flap to maintain patency.

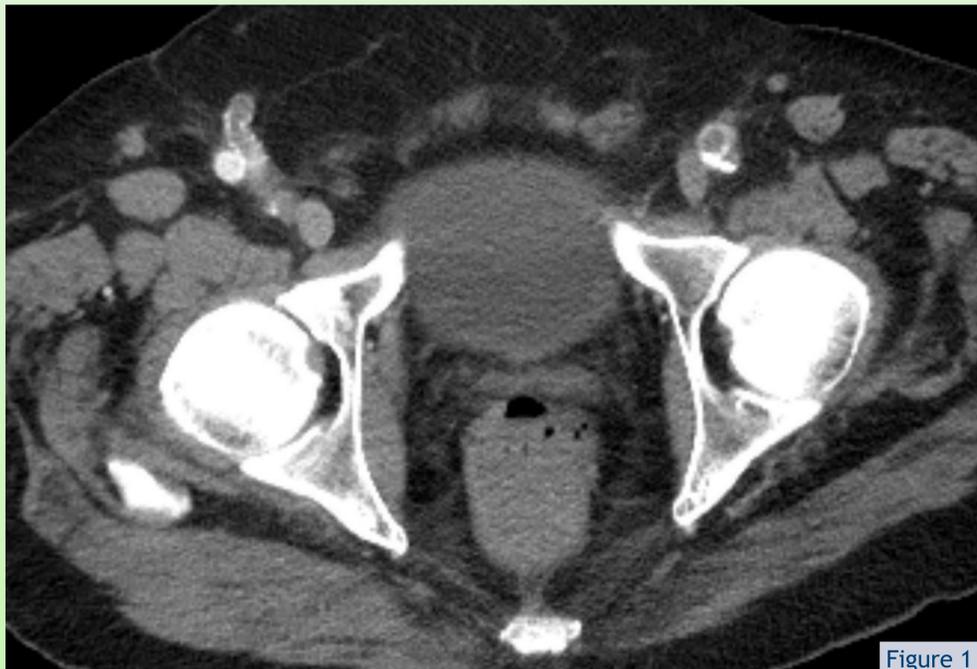


Figure 1

## IMAGING

CT angiogram with runoff to bilateral lower extremities showed patency of the axillobifemoral bypass graft to the right femoral artery, with occlusion of the left femoral artery limb (Figure 1). Aortofemoral bypass graft limb to the left lower extremity was also occluded. The left profunda femoris artery appeared patent and supplied collaterals to the left lower extremity stump.

On-table angiography of axillary fem-bypass graft during thromboembolectomy showed a patent proximal portion of the bypass graft (Figure 2). The distal portion of the graft subsequently required revision.

## DISCUSSION

Axillo-profunda bypass is an uncommon solution for distal revascularization in patients with contraindications to more frontline revascularization operations such as aorto-femoral or fem-fem bypasses. It is superior compared to an axillo-popliteal graft due to its reduced length, which decreases the incidence of infection or graft occlusion. However, the procedure itself is technically challenging and is typically performed on patients with advanced vasculopathies, which tends to include occluded Superficial Femoral Arteries (SFAs) and history of graft failure due to occlusion or infection. Moreover, the profunda femoris artery is typically diminutive in caliber, making its identification and use difficult if the patient has not developed associated collaterals.

In essence, the technique of an axillo-profunda bypass is a modified form of an axillofemoral graft, with attention turned to the location of the profunda in the thigh. Care is taken during dissection of the thigh to mobilize branches of the femoral nerve with muscle and to then accurately locate the profunda artery adjacent to the femur. The axillary artery is then found beneath the fascia between the clavicle and the pectoralis major after the brachial plexus is identified and avoided.

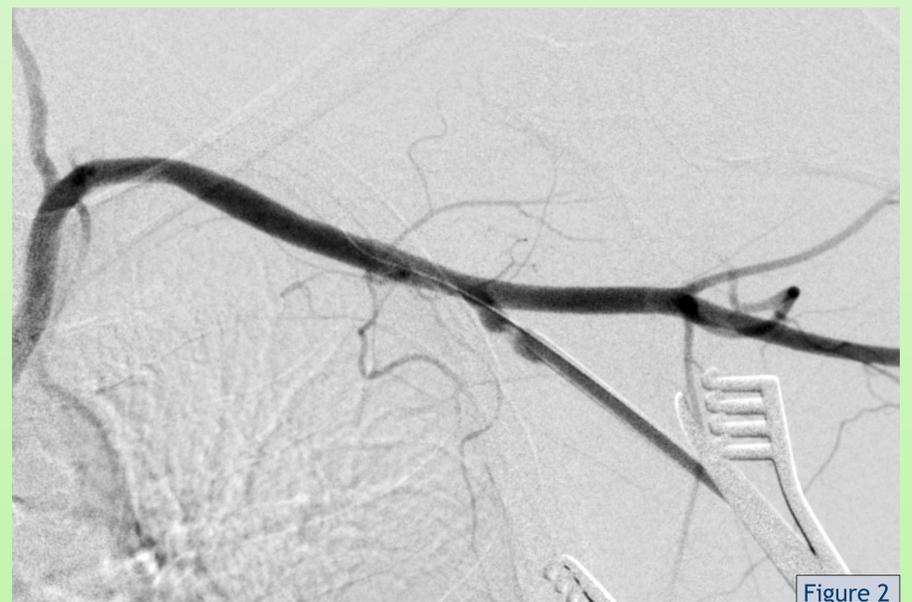


Figure 2

## REFERENCES

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## CONTACT

Emily Rey, DO: [erey@arnothealth.org](mailto:erey@arnothealth.org)  
Rople Risam, MD: [rople.risam@arnothealth.org](mailto:rople.risam@arnothealth.org)