Department of Surgery
2026 Research Day
6th May 2026 (Wednesday) | 7 am – Noon | MART Auditorium

Title: Hybrid Approach to Peripheral Thrombectomy Utilizing Flow Restriction in an Elderly Patient with Bilateral Acute Limb Ischemia

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Background:
Mechanical thrombectomy for acute limb ischemia often results in a major, invasive operation, presenting challenges in an older, frail patient. While thrombectomy is traditionally performed through an open approach requiring incisions, advances in endovascular devices have led to minimally invasive techniques and hybrid approaches being described. One main complication regardless of technique is distal embolization. This case report highlights the advantages of new flow restriction technology in expanding our options in the treatment of acute limb ischemia.

Methods:
The patient is a 93-year-old female who presented with bilateral acute limb ischemia in the setting of disruption of anticoagulation for a dental procedure. She was found to have occlusions of her right common femoral artery, left deep femoral artery, and left superficial femoral/popliteal artery. With her advanced age and multilevel, multi-limb occlusion, a hybrid approach using both a Fogarty balloon and a flow-restricting thrombectomy device was chosen.

Results:
After exposure of the right common femoral artery, open mechanical thrombectomy was performed using a Fogarty catheter allowing for quick restoration of flow to the right side. We then proceeded endovascularly to address the multilevel occlusion in the left lower extremity. The Inari Artix flow-restricting catheter was advanced into the left superficial femoral artery and thrombectomy was performed of the SFA and popliteal artery. Once flow was restored, the flow-restricting catheter and sheath were withdrawn into the left common femoral artery and additional thrombectomy was performed to clear the deep femoral artery. Completion angiography demonstrated complete resolution of her occlusions and exam found that palpable pulses were restored to the left foot. The patient ambulated on postoperative day one, was discharged soon after, and made a full recovery within two weeks.

Conclusions:
Hybrid approach to acute limb ischemia is an essential technique especially in elderly patients where efficiency is critical. New flow-restrictive thrombectomy catheters are an important tool to incorporate as they protect against distal embolization during the procedure with reduced operative time, morbidity, and length of stay. Additional studies are needed to compare outcomes of this technique with traditional suction thrombectomy catheters and open thrombectomy alone.