

Surgical Treatment of Chronic Upper Extremity Ischemia

Mary C Ghere, MD, Michelle Buckius MD, Marc Mitchell MD, FACS, John G. Winscott MD, Ben McIntyre, MD, FACS

Objective

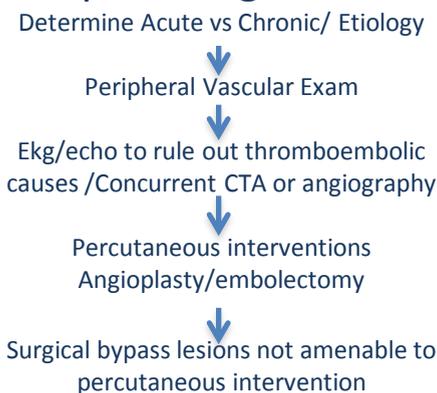
Demonstrate the utility of surgical revascularization in select patients with chronic upper extremity ischemia.

Introduction

Vaso-occlusive disease of the upper extremity is a rare condition. Etiologies are multifactorial, and include atherosclerotic changes, systemic disease like Raynaud's, thromboembolic phenomenon, and trauma. Like lower extremity ischemia, treatment depends on the severity, acuity, and extent of disease.

Work

up/Management



Case Description

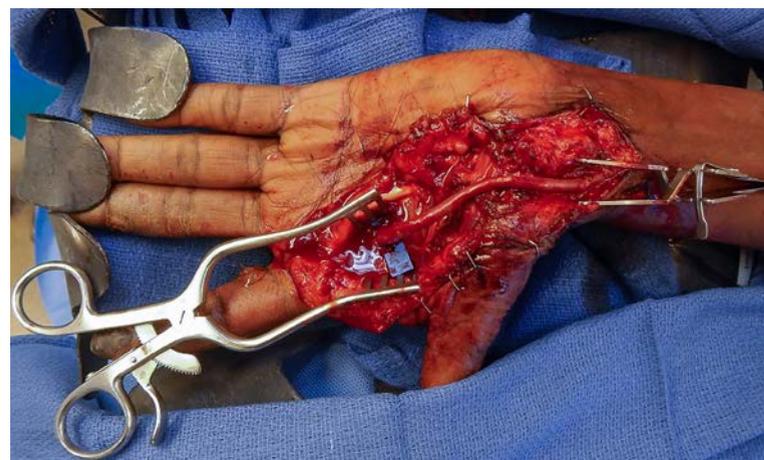
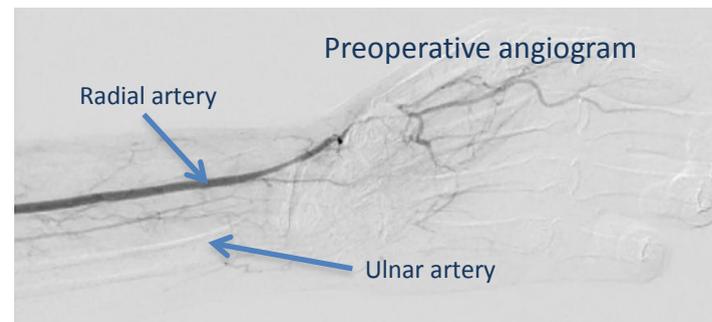
58 yo RHD woman with chronic left index finger pain presents with new color changes to the index finger and ulceration of the adjacent long finger. She underwent angiography that demonstrated segmental occlusion of the radial artery as it transitioned to the deep palmar arch. The ulnar artery was extremely small in caliber with little contribution to the palmar arch. Thromboembolectomy was attempted with a Fogarty catheter but was not successful. A surgical vascular bypass was then performed using a reverse cephalic vein graft from the radial artery to the deep palmar arch.

Operative Details

The brachial artery was exposed in the antecubital fossa to the level of the trifurcation. A segment of cephalic vein was mobilized. The radial artery was then exposed through a volar wrist incision. The caliber and quality of the radial artery appeared normal at this level. The incision was carried down the hand distally toward the index finger. The common digital artery to the index/middle finger web space was identified and traced retrograde to the deep palmar arch. The size of the graft was determined and cephalic vein was harvested. The vein graft was reversed and the proximal and distal anastomoses were completed in an end to side fashion using 8-0 nylon. Skin was closed primarily.



Preoperative photo demonstrating gangrene of the left index finger with adjacent ulceration of the long finger



Intra-operative photo demonstrating bypass of the occluded radial artery segment using reversed cephalic vein graft

Results

She had successful resolution of her rest pain and healing of her ischemic ulcerations. There was no further necrosis of the index finger, and she went on to have an amputation of the distal phalanx, which healed.

Conclusion

Our case highlights the potential for vascular bypass to targets as distal as the digital arteries and the palmar arch. These patients benefit from a multidisciplinary team: including interventional radiologists, vascular surgeons, and experienced microsurgeons to successfully revascularize an occlusion deep within the palm. Despite the surgical challenges of operating in this patient population, it is important to note that there are treatments that can avoid amputation, heal ulcerations, control rest pain, and provide the patient with a return of function to the hand.

Contacts

Mary Ghere, MD

mghere@umc.edu

Ben McIntyre, MD, FACS

bmcintyre@umc.edu