

2019 NEHS Annual Meeting Abstract Submission

ABSTRACT TITLE *	A Novel Approach to Superficial Palmar Arch Reconstruction
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Name of who will present abstract at NEHS meeting on December 6, 2019 Please note that the same person cannot present more than one abstract at the meeting. *	Ian Powelson
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ABSTRACT – should include background information and a description of methods, programs, or practices. *

INTRODUCTION

Symptomatic ulnar artery thrombosis within Guyon’s canal is known as hypothenar hammer syndrome (HHS). Repetitive blunt trauma to the ulnar artery which runs superficially in this location leads to pseudoaneurysm formation, arterial thrombosis, and digital ischemia. Following excision of the thrombosed segment, gaps greater than 2cm have classically been managed with interposition vein grafting, and more recently with arterial grafts. Long-term follow-up of these patients suggests that outcomes are improved when the graft remains patent, and that patency rates are higher with arterial grafts compared to vein grafts. We report a patient with HSS resulting in ulnar artery thrombosis extending to multiple branches of the superficial palmar arch and a novel approach to revascularization of the ulnar digits.

MATERIALS & METHODS

Pre-operative CT angiography demonstrated occlusion of the ulnar artery at the hook of the hamate and diminutive flow to the ring and small fingers. Intra-operatively, the thrombosis was found to extend into the superficial palmar arch (SPA) and into the common digital artery to the 4th webspace. Revascularization of the small and ring fingers was achieved by mobilization and primary anastomosis of the 4th common digital artery stump to the distal continuation of the SPA using 9-0 nylon suture.

RESULTS

Robust perfusion of the ischemic digits was observed intra-operatively. At 2 weeks the patient reported complete resolution of his symptoms and flow could be detected in the proper digital arteries of the small finger using doppler ultrasound. CT angiography at 3 months demonstrated flow to the small and ring finger and reconstitution of the SPA via a large 2nd palmar metacarpal artery. We did not find any reports in the literature describing the operative approach undertaken in this case.

CONCLUSIONS

In cases of ulnar artery thrombosis extending into the SPA and common digital vessels, direct reconstruction of the arch by anastomosis to the distal SPA stump is possible in select patients. Suitable candidates must have a “complete” superficial arch which includes a large caliber anastomosis to the deep/radial arch. We believe that this approach is

likely to have long-term patency comparable or superior to arterial grafting while avoiding the morbidity of arterial graft harvest.
