

2022 NEHS Annual Meeting Abstract Submission

COMPLETE

NEHS Vice President, Daniel Mastella, M.D., is currently accepting abstract submissions for presentation at our Annual Meeting on December 2, 2022.

This meeting will be held at the Sturbridge Host Hotel in Sturbridge, MA.

Therapists, NPs, and PAs are also encouraged to submit.

THE DEADLINE FOR SUBMISSION IS OCTOBER 15, 2022

RESIDENTS AND FELLOWS ONLY. Please indicate if you want your paper to be considered for the prestigious H.Kirk Watson, M.D. Founder's Award. The abstracts for award consideration will be presented in the morning and the award will be presented in the afternoon.

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* ABSTRACT TITLE

Ulnar Artery Aneurysm without Occupational Exposure: A Case Series

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Maya Petashnick

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* Name of who will present abstract at NEHS meeting on December 2, 2022 Please note that the same person cannot present more than one abstract at the meeting.

Monica Maloney

* Please indicate if the presenter is:

Resident, Fellow

* List full names of abstract authors

Maya Michelle Petashnick MD, Ammr Al-Houssan MB BCH BAO, Monica Maloney MD, Steven Smith MD, Alan Babigian MD

*** ABSTRACT - should include background information and a description of methods, programs, or practices.**

Background

Hypothenar Hammer Syndrome (HHS) is a condition that results from repetitive blunt microtrauma to the ulnar artery at the level of Guyon's canal as the artery passes over the hamate bone. This can lead to thrombosis and aneurysm.¹ HHS typically presents in patients with occupations or avocations that require habitual trauma or vibration-type work. Studies have shown the incidence can be up to 14% in hammer-workers, 7% of vibration-exposed workers² and can be present as unilateral (38%) or bilateral (62%) disease.³ Pathological entities can be categorized into thrombotic type, aneurysmal type,⁴ or mixed. Signs and symptoms include digital ischemia (claudication vs critical ischemia) or mass effect from the aneurysm, such as a pulsatile hypothenar mass or adjacent nerve compression. Occasionally, ulnar artery aneurysm can occur without repetitive trauma. We present our experience with four patients with ulnar artery aneurysm causing HHS symptoms without history of repetitive trauma prior to presentation.

Methods

We present four cases of ulnar artery aneurysm causing symptoms consistent with HHS without history of repetitive trauma. All four cases included physical exam findings of palmar swelling/mass, hypothenar anesthesia, and decreased filling time on Allen's test. Xray's and CTA or MRA were used in diagnostic workup. Given the history, physical examination, and imaging findings, all four patients underwent resection of the ulnar artery aneurysm with primary end-to-end repair of the ulnar artery.

Discussion

Repetitive trauma is a known cause of ulnar artery aneurysm. Less common etiologies include connective tissue disorders, vasculitis, iatrogenic or even idiopathic causes.⁵ As untreated aneurysm can lead to significant complications, it is important to diagnose and treat this disease in a timely manner.

Though angiogram is the gold standard for diagnosis, CTA and MRI/MRA are less invasive and suitable for workup and diagnosis.⁶ CTA involves radiation and iodine dosing but provides better flow data than MRI/MRA as well as better assessment of fracture.⁶ Different approaches to surgery such as simple resection, reconstruction, endovascular repair with stent graft or vein graft have been described.⁵ In our four cases, patients underwent ulnar artery reconstruction with end-to-end anastomosis with excellent outcomes.

Conclusion

Our patients' symptoms and physical exam findings were highly suggestive of Hypothenar Hammer Syndrome caused by ulnar artery aneurysm despite lack of significant antecedent trauma. A high index of suspicion and timely surgical intervention is necessary when symptoms and physical exam are indicative of this syndrome, even in the absence of significant occupational exposure.

Reference List:

1 Kumar Y, Hooda K, Lo L, Karol I. Ulnar artery aneurysm and hypothenar hammer syndrome. *BMJ Case Rep.* 2015 Nov 24;2015:bcr2015211444. doi: 10.1136/bcr-2015-211444. PMID: 26604228; PMCID: PMC4680255.

2 Little JM, Ferguson DA. The Incidence of the Hypothenar Hammer Syndrome. *Arch Surg.* 1972;105(5):684-685. doi:10.1001/archsurg.1972.04180110009004

3 Ferris BL, Taylor LM Jr, Oyama K, McLafferty RB, Edwards JM, Moneta GL, Porter JM. Hypothenar hammer syndrome: proposed etiology. *J Vasc Surg.* 2000 Jan;31(1 Pt 1):104-13. doi: 10.1016/s0741-5214(00)70072-3. PMID: 10642713.

4 Nitecki S, Anekstein Y, Karram T, Peer A, Bass A. Hypothenar hammer syndrome: apropos of six cases and review of the literature. *Vascular.* 2008 Sep-Oct;16(5):279-82. doi: 10.2310/6670.2008.00002. PMID: 19238870.

5 Khaled Y, Abdulla A, Kamal DM, Mathew KP. Idiopathic true ulnar artery aneurysm. *International Journal of Surgery Case Reports.* Volume 81. 2021. <https://doi.org/10.1016/j.ijscr.2021.105821>

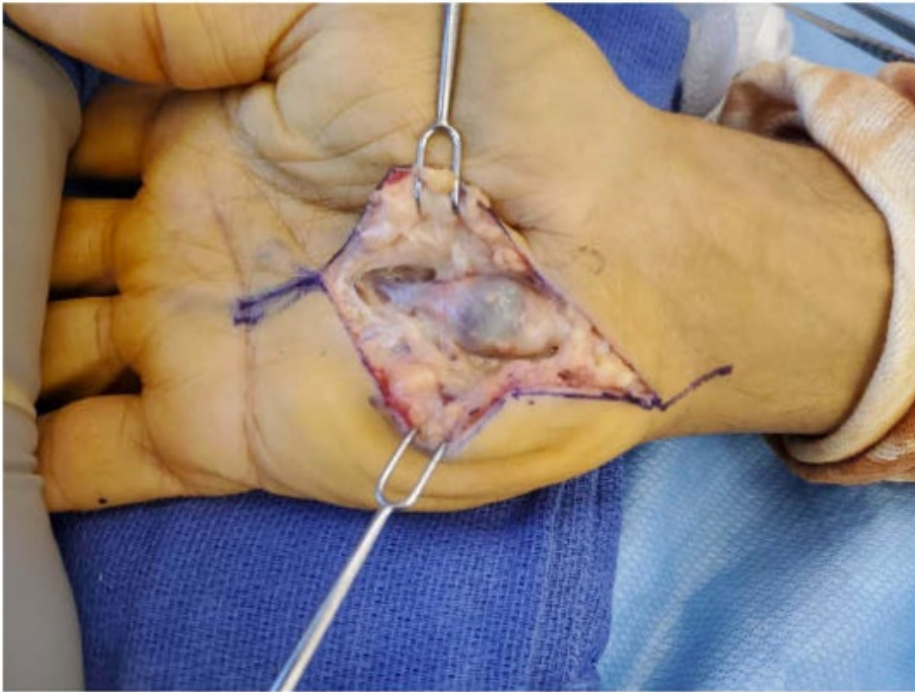
6 Blum AG, Zabel JP, Kohlmann R, et al. Pathologic conditions of the hypothenar eminence: evaluation with multidetector CT and MR imaging. *Radiographics* 2006; 26:1021-1044

Please attach files with diagrams and/or photos to support your abstract (10 MB limit)

ulnar_artery_images.docx

*** Please attach the abstract presenter's CV**

maloney_cv_10.10.pdf



Intraoperative - Ulnar Artery Aneurysm



Intraoperative – Resected Ulnar Artery Aneurysm



Intraoperative – Ulnar Artery with Primary Anastomosis