

Introduction

Extremity pain is a frequent complaint with a broad differential of diagnoses ranging from musculoskeletal to vascular. Peripheral vascular disease (PVD) affects over 10 million people in the United States, and there has been a significant increase in prevalence of peripheral vascular disease worldwide over the past several decades [1-2]. As a result, awareness of red flag symptoms and physical exam findings becomes essential for pain management physicians in the recognition and prompt evaluation of potential vascular compromise.

This case demonstrates a brachial artery occlusion presenting to an outpatient pain management clinic evaluation for evaluation of suspected "cervical radicular pain". Upon examination, there were findings consistent with vascular compromise, and after immediate referral to the emergency room, it was revealed patient's symptoms were due to an occlusion of the brachial artery.

Case Description

69-year-old female with a past medical history of hypertension, hyperlipidemia, and type 2 diabetes mellitus was referred to the outpatient pain management clinic for suspected "cervical radicular pain." The patient experienced persistent pain at rest, exacerbated by movement, that was worsening over the course of one week. In addition, she had intermittent coldness and discoloration of the left hand. She denied neck pain or radiating pain from the neck. Physical examination revealed decreased radial and ulnar pulses in the left wrist and reduced temperature in the left hand. She was promptly recommended to visit the emergency room for vascular evaluation. The patient was evaluated in the emergency department and admitted. A CT scan with IV contrast of the left upper extremity revealed a left brachial artery occlusion. An open thrombectomy with a Bovine patch was performed 24 hours later. The patient was discharged on rivaroxaban two days post-operatively, with an outpatient follow-up for a hematology hypercoagulable workup. Following treatment and discharge, the patient experienced significant symptom improvement with no complications reported.

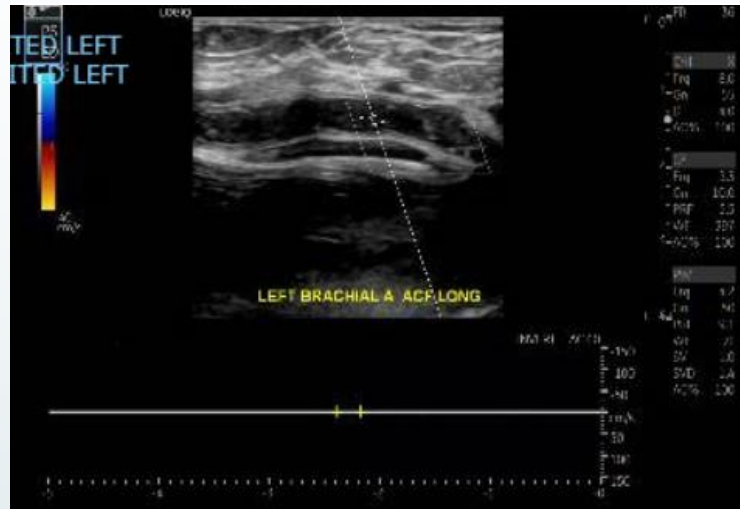


Figure 1. Ultrasound performed of the left brachial artery with no observable flow with use of Doppler



Figure 2. CT Angiography of Left Upper Extremity demonstrating filling defect of the distal brachial artery extending into bifurcation of radial and ulnar arteries

Discussion

As the population in the U.S. continues to age, acute and chronic pain continues to increase in prevalence alongside increasing PVD in the country. While arm pain is often considered musculoskeletal, vascular compromise must always be ruled out by assessing pulses and skin condition. Omitting these essential components during a clinic visit can delay the diagnosis of potentially limb- or life-threatening conditions. Despite advanced radiological techniques, history and physical examination remain critical in-patient evaluation. By consistently inquiring about "red flag" symptoms, such as limb temperature changes, hyperalgesia, edema, discoloration, and palpable pulses, clinicians can swiftly address and potentially prevent adverse outcomes. Once vascular compromise has been determined, immediate recommendation to report to the nearest emergency department becomes necessary to initiate anticoagulation and perform indicated interventions.

Conclusion

When evaluating patients for common complaints such as "radicular symptoms", physicians must maintain a broad differential in addition to thorough history taking followed by comprehensive physical examination. By doing so, pain management physicians can recognize the signs and symptoms of underlying vascular disease despite sharing symptoms with more common pathologies. This comprehensive evaluation leads to accurate diagnoses and minimizes ongoing complications by facilitating timely treatment and can prevent loss of life or limb.

References

1. Allison MA, Ho E, Denenberg JO, Langer RD, Newman AB, Fabsitz RR, Criqui MH. Ethnic-specific prevalence of peripheral arterial disease in the United States. *Am J Prev Med.* 2007 Apr;32(4):328-33. doi: 10.1016/j.amepre.2006.12.010. Erratum in: *Am J Prev Med.* 2014 Jul;47(1):103. PMID: 17383564.
2. Eid MA, Mehta K, Barnes JA, Wanken Z, Columbo JA, Stone DH, Goodney P, Mayo Smith M. The global burden of peripheral artery disease. *J Vasc Surg.* 2023 Apr;77(4):1119-1126.e1. doi: 10.1016/j.jvs.2022.12.015. Epub 2022 Dec 21. PMID: 36565779.