Case Report

Hypothenar Hammer Syndrome: A Rare Presentation

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Abstract

Early diagnosis and treatment of hypothenar hammer syndrome are important to prevent thrombosis, distal embolization, or hand claudication. We report a case of rare presentation of misdiagnosed ulnar artery aneurysm, which was inadvertently incised as an infected hematoma.

Key Words: Hamate bone, true aneurysm, ulnar artery aneurysm

Introduction

Hypothenar hammer syndrome (HHS) is a rare vascular disease usually caused by repetitive occupational trauma to the ulnar artery due to its peculiar anatomic location. We report the case of a middle-aged man who presented with a right hypothenar swelling after blunt trauma, which was misdiagnosed and inadvertently incised. He was diagnosed as a case of ulnar artery aneurysm with thrombus, for which he underwent an emergent surgical excision of aneurysm.

Case Report

A 41-year-old man, working as a manual laborer, and a chronic smoker, sustained trivial trauma to his right hand after falling off his bicycle. He was treated at a local health center with analgesics for pain. Two weeks later, he noticed a swelling over his right hand, which was thought to be an infected hematoma, and incision and drainage was attempted. He was referred to our institute after suspecting a vascular malformation, which was inadvertently incised. On examination, he had no distal neurovascular deficits. Both radial and ulnar arteries were well palpable with a capillary filling time of <3 s. Emergency computed tomography (CT) angiography showed a right ulnar artery aneurysm with thrombus. The superficial palmar arch was incomplete, and the deep palmar arch was intact. He underwent emergency excision of the aneurysm after obtaining proximal radial and ulnar artery control. The aneurysm was around 7 × 4 cm in size with a thrombus, the wall of which was breached [Figures 1 and 2]. Histopathology of the lesion revealed a true aneurysm with thrombus. There were no postoperative neurovascular complications. Postoperative CT angiogram revealed that the ulnar artery distal to the pyriform bone was not opacified, the digital artery of the fifth finger showing faint opacification. The other digital arteries were normal.

Discussion

The term HHS was first described by Von Rosen in 1934 and was coined by Conn et al. in 1970.[1,2] This condition most commonly occurs among manual laborers such as carpenters or mechanics. HHS is a rare condition with a...
prevalence rate of around 14%, but the incidence of patients presenting with vascular complaints is around 1.1–1.6% due to low early suspicion of the diagnosis. HHS should be considered in the differential diagnosis in a patient presenting with digital ischemia or hand claudication. The patients with the HHS usually, but not always, present with classical symptoms and signs of digital ischemia. The dominant hand is involved in more than 90% of cases. In our case, the dominant hand was affected, but the patient presented after sustaining blunt trauma. The possibility of in situ thrombosis of the aneurysm could have led to the misdiagnosis of an infected hematoma. The diagnosis was incidentally made after an inadvertent incision. Repetitive trauma to the hypothenar eminence can lead to compression of the ulnar artery against the uncinate process of the hamate bone. The distal part of the ulnar artery is somewhat fixed after emerging from the Guyon’s canal, and the hook of the hamate serves like an anvil, thus predisposing to ulnar artery trauma.

In the initial description by Conn, the pathogenesis of this condition was attributed to intimal or medial injury causing thrombosis or aneurysm formation, respectively. However, Ferris et al. demonstrated the association of this condition with underlying fibromuscular dysplasia, even in the nontraumatized extremity. Surgical options for management of this condition include resection of the thrombosed or aneurysmal segment with end-to-end anastomosis or graft reconstruction. We have performed an aneurysm excision without reconstruction of the ulnar artery due to the radial artery and deep arch being intact.

Conclusion

Although a rare condition, a high index of suspicion should be maintained to diagnose HHS, especially in patients with a history of repetitive hand trauma and hypothenar swelling. Clinical misdiagnosis of the lesion is common due to its location and its variable presentations. Early diagnosis and treatment can prevent complications such as thrombosis and distal embolization.

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Conflicts of interest

There are no conflicts of interest.

References

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