Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pathology

Pseudoaneurysm of Ulnar Artery – A Case Report

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DOI: 10.36347/sjmcr.2023.v11i05.067 | **Received:** 12.04.2023 | **Accepted:** 25.05.2023 | **Published:** 30.05.2023

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Abstract **Case Report**

Digital artery pseudoaneurysms are rare lesions that usually result from a blunt or penetrating injury. The thrombus that can develop within the pseudoaneurysm can be a potential source for embolisation, putting the distal tissue at risk for ischemia/necrosis. So it is important to identify these lesions at the earliest and repair surgically. Here we present a case of 39 year old male, who presented to our hospital with a pulsatile, painful swelling on left palm. There was no history of any trauma in this case, but the ulnar vessel was in close proximity to the hook of hamate bone (carpal bone), which was found to be the precipitating factor. It was diagnosed as a case of pseudoaneurysm of distal ulnar artery and segmental resection was done with end to end anastomosis of ulnar artery. Post anastomotic vascularity of the digits was reassured.

Keywords: Pseudoaneurysm, False aneurysm, Ulnar Artery pseudoaneurysm.

INTRODUCTION

Ulnar artery pseudoaneurysm is an extremely rare condition that usually presents as a painful pulsatile mass in the palmar region. Usually there will a previous history of trauma, and very very rarely it occurs due to close contact with the bony processes of carpal bones. History, clinical examination and radiological imaging, predominantly selective CT/MR arteriography helps to arrive at a definitive diagnosis. But histopathological examination is necessary to confirm the diagnosis of pseudoaneurysm. It is extremely important to identify the lesion at the earliest and get it excised inorder to prevent thromboembolic complications and distal ischemia.

CASE REPORT

A 39 year old male patient presented with complaints of swelling in the hypothenar region of left palm since 8 months. There was no history of any trauma. He complaints of pain since 8 months with progressive increase in size. On examination, there is a soft swelling of size about 1.5 x 1.5cm in the hypothenar region, which is compressible and pulsatile with hyperaemia. There is no tenderness or local rise in temperature. His radial pulse was normal and he had a normal capillary refill of his ulnar and radial sided digits. Allens test was negative and there was no evidence of digital ischemia. USG left hand revealed a pseudoaneurysm measuring 1.9x1cm from the ulnar artery. CT upper limb angiogram showed a saccular contrast filled outpouching arising from terminal left ulnar artery in the palm in the fourth metacarpal space measuring 2.2x1.9cm with a mural thrombus 3.2mm thick. No active contrast leakage with normally opacified radial artery and palmar arches. The impression was Pseudoaneurysm Left ulnar artery and it was in close proximity to the hook of hamate bone (3.6mm) from the neck of aneurysmal dilatation. Segmental resection of aneurysm and end to end anastomosis of ulnar artery done. Post anastomotic vascularity of the digits was reassured post surgically.

Fig 1: CT upper limb angiogram

Fig 2: Resected specimen of pseudoaneurysm

Fig 3: 4X view of ulnar artery with true lumen and hemorrhage between tunica media and adventitia

Fig 4: 4x view of hemorrhage between tunica media and adventitia

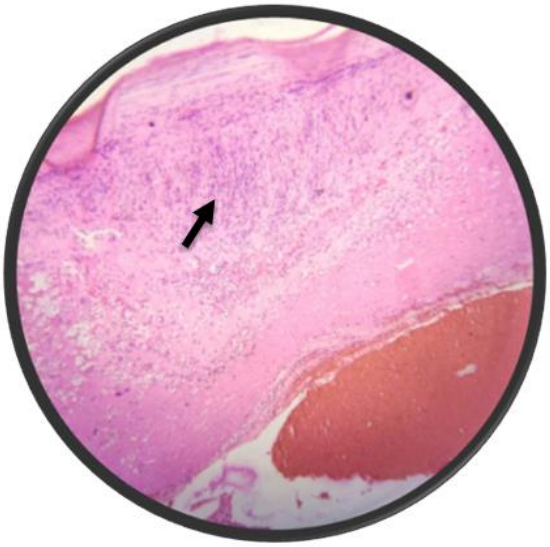

Fig 5: 10x view Acute inflammation in wall of artery corresponding to pseudoaneurysm

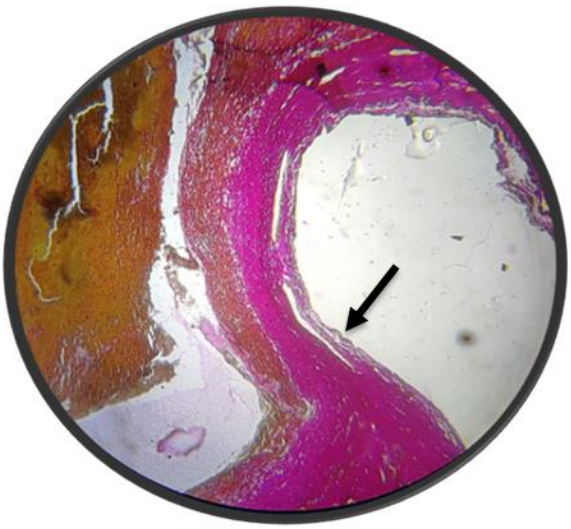

Fig 6: Elastic van Gieson stain demonstrating internal elastic lamina only in true lumen

Grossly a single nodular dark brown cystic mass measuring 2x1.3x0.5cm was received, which on cut section showed dark brown fluid(?hemorrhage). On microscopical examination, section showed a thick walled vessel showing dissection of the wall with hemorrhage between tunica media and tunica adventitia. Focal atheromatous change and acute inflammation seen in the wall of vessel corresponding to the portion of pseudoaneurysm. No thrombus seen. Correlating with history, clinical examination findings, radiographic studies and histopathological findings, diagnosis of Pesudoaneurysm of ulnar artery was made.

DISCUSSION

An aneurysm is a localized abnormal dilation of a blood vessel or heart that may be congenital or acquired. When an aneurysm involves an attenuated but intact arterial wall, it is a true aneurysm whereas a false aneurysm (also called pseudoaneurysm) is a defect in the vascular wall leading to an extravascular hematoma that freely communicates with the intravascular space ("pulsatile hematoma"). Psuedoaneurysm of ulnar artery is an extremely rare condition. Usually it is seen secondary to either blunt or penetrating trauma with subsequent extravascular hematoma formation, reorganization of the clot and recanalization of the vasculature through a newly formed false lumen. In histopathological examination, there is absence of internal elastic lamina with hemorrhage in between tunica media and adventitia of the artery. Ulnar artery pseudoaneurysm can be complicated by development of thrombosis, distal emboli, rupture and neurovascular compromise secondary to compression of nearby structures. Investigations aiding for diagnosis are ultrasonography, CT and MR angiography. In USG, it can be visualised as a saccular cystic formation arising directly from the adjacent ulnar artery with internal turbulent flow. The management of pseudoaneurysms can be surgical or non-surgical. Surgery remains the mainstay which include excision of the pseudoaneurysm with ligation of the ulnar artery and microsurgical reconstruction of ulnar artery by reanastomosis.

CONCLUSION

Ulnar artery aneurysm is a rare condition which occur usually secondary to trauma, but in this case vascular injury caused by the close proximity of ulnar artery to the hook of hamate bone may be the predisposing factor that led to pseudoaneurysm formation. Early diagnosis is essential in preventing long term morbidity and surgery is the mainstay of treatment. Clinical and radiological diagnosis is confirmed only by histopathological examination of the resected specimen. On follow up, the patient is asymptomatic now and thriving well.

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