



Post Traumatic Pseudo-aneurysm of Deep Palmar Arch: A Case Report

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Abstract

Introduction: Pseudoaneurysm of the deep palmar arch is a rare entity, with only few cases described in the literature. A high index of suspicion is necessary for the diagnosis and treatment. Below we present a case of a pseudoaneurysm of the deep palmar arch in an 18-year-old man following a sharp cut injury over the dorsum which was treated surgically in our department.

Case Report: An 18-year-old man, right-handed, reported to our department with a swelling over the dorsum of left hand, following accidental trauma to the dorsum with a knife that was sutured locally one month ago. Swelling was insidious in onset, gradually progressed to the present size. On clinical examination, a scar visible over the dorsum, non-tender, pulsatile swelling of 3 cms x 5 cms x 4 cms under the scar, overlying skin freely mobile, radial and ulnar pulses were well felt, no signs of distal ischemia in the fingers, no sensory changes present. Plain radiograph of the left hand was normal. MRI revealed a 2.2 x 4.6 x 3.2 cms pseudoaneurysm deep to extensor tendons, third and fourth metacarpal bones with branch of radial artery in close proximity. Digital subtraction angiography did not show any blush or filling up of the pseudoaneurysm. On Surgical exploration the Pseudoaneurysm was found to be thrombosed and excised in toto. The scar healed well and patient had no complications.

Conclusion: Pseudoaneurysm of the palmar arch after local penetrating trauma is an important differential for patients presenting with palmar or dorsal masses. Pseudoaneurysm can be effectively diagnosed and treated surgically with excellent results.

Keywords: Pseudoaneurysm, deep palmar arch, Digital subtraction angiography.

Introduction

The term aneurysm is derived from the Greek word, meaning, "a widening". By current reporting standard, an aneurysm is defined as a permanent localized dilatation of artery having at least 50% increases in diameter compared with the expected normal diameter¹. Pseudoaneurysms are distinguished from true aneurysms, which involve

the entire arterial wall. False aneurysm, also known as pseudoaneurysm (PA), occurs when a damaging force is applied to the arterial wall, allowing persistent extravasations of blood into the surrounding connective tissues that communicate with the arterial lumen². Currently, surgery or endovascular intervention is the only accepted definitive therapy for these³.

Case Report

An 18-year-old boy, right-handed, reported to our department with a swelling over the dorsum of left hand, following accidental trauma to the dorsum of the hand with a knife that was sutured locally one month ago. The incised wound was approximately 2 x 1 cm. Post operatively after 2 weeks patient noticed a swelling which gradually progressed and increased to the present size. There was no history of pain, fever or any other surgical procedure done for the same. Patient did not have any history of wound infection or any other complication till the time of suture removal. On clinical examination, a scar visible over the dorsum, non-tender, pulsatile swelling of 3cms x 5 cms x 4cms under the scar, overlying skin freely mobile, radial and ulnar pulses were well felt, no signs of distal ischemia in the fingers, no sensory changes present. There was restriction of flexion of the MCP joints of the index, middle, ring and little fingers. Plain radiograph of the left hand was normal. MRI revealed a 2.2 x 4.6 x 3.2 cms pseudoaneurysm deep to extensor tendons, third and fourth metacarpal bones with branch of radial artery in close proximity. DSA did not show any blush or filling up of the pseudoaneurysm. On Surgical exploration the Pseudoaneurysm was found to be thrombosed and excised in toto. The scar healed well and patient had no complications at 6 months follow up. He is able to completely flex his MCP joints and is able to do all his daily activities.

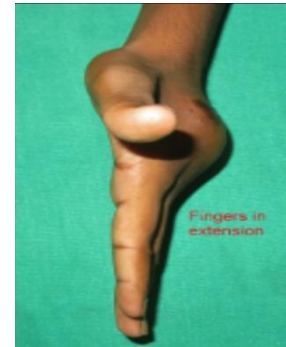


Figure 1 Pre-operative photo of the swelling



Figure 2 Intra-op picture of the swelling communicating with the vessel



Figure 3 After excision of pseudoaneurysm





Figure 4 Post operative photos

Discussion

Arterial aneurysms have been recognized since ancient times. One of the earliest texts known, the Ebers Papyrus (2000 B.C.), contains a description of traumatic aneurysms of the peripheral arteries. Pseudoaneurysms (false aneurysms) are localized arterial disruptions or pulsatile hematoma that communicates with an artery through a disruption in the arterial wall. Pseudoaneurysms are caused by trauma, iatrogenic vascular interventions, anastomotic disruption and in intravenous drug abusers. Pseudoaneurysms are associated with the characteristic findings of a pulsatile mass, a palpable thrill, and an audible to-and-fro murmur. The diagnosis is confirmed by various imaging techniques^{3,4,5}. Traumatic pseudoaneurysms have become more commonplace because of increasing civilian violence in society. Pseudoaneurysms occurring as a result of immediate or occult trauma have been reported in virtually every artery. Other false aneurysms of arteries can occur with blunt injury in the form of fracture and dislocation of joints. Their presentation varies with anatomical location. They are also found in intravenous drug abusers^{6,7,8,9,10,11,12}.

Pseudoaneurysms of the deep palmar arch are rare entities and only a few cases have been described in the literature. The majority develop secondary to trauma, interventional procedures and infections, and may occur within hours or months. Symptoms may be either due to mass effect, digital ischemia by thromboembolism or arterial occlusion, neurological deficits, venous compression, rupture or abscess formation. Ultrasonography can diagnose a pseudoaneurysm with the classical Ying yang sign and further an MRI and a digital subtraction angiography can be done to note the arterial feeder. Even with multiple treatment modalities like USG guided compression, injection of thrombin or glue into the pseudoaneurysm, surgical resection has been described the best in literature.

Conclusion

Pseudoaneurysms should always be kept in the differential diagnosis of any swelling especially with a history of trauma. Once diagnosed surgery is a good treatment modality for such lesions.

Conflict of interest: The authors have no conflict of interest to report

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