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LETTER TO THE EDITOR

Post-Traumatic Pseudoaneurysm of the Common Digital Artery in a Child

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Dear Sir,

Pseudoaneurysm of the digital artery in the hand rarely occurs following hand injury. Since first described by Heuston in 1973, less than 25 cases have been described in the literature. Owing to the small caliber of digital artery, complete disruption of the digital artery is more common [1]. Hence, it is rarely suspected and misdiagnosis is common.

A 15-year-old left hand dominant male was referred with increasing swelling and pain in the right palm for 3 days duration. Two weeks prior to this, he sustained a penetrating injury with a chisel in the school while doing woodwork. He attended his general practitioner on the day of injury and received wound care. He represented 2 weeks later with increasing pain and swelling, which restricted movement in the right hand. A 3 cm x 3 cm soft non-pulsatile discrete mass with surrounding ecchymosis on his right palm was identified. Mild altered sensation over the radial side of the right ring finger was elicited with palpation over the mass. Radiograph of the right hand was unremarkable. Wound exploration under general anaesthesia was performed via a limited Brunner's incision. The swelling was identified at the level of the common digital artery supplying the third web space (ulnar and radial borders of the middle and ring fingers, respectively). The corresponding digital nerves and flexor tendon sheath were intact. A traumatic arteriotomy identified on the common digital artery was identified. The pseudoaneurysm and the traumatized vessel were isolated and excised under microscopic vision. End-to-end anastomosis of the common digital artery was performed with 9/0 Ethilon. The postoperative recovery was uneventful.

Pseudoaneurysms are usually due to penetrating trauma that results in a traumatic arteriotomy. The formation of hematoma is followed by organization and subsequent recanalisation of the hematoma surrounding the injured vessel. The hematoma is eventually replaced by fibrous and scar tissue, and a false aneurysm remains. Signs of digital ischaemia may not occur in digital artery pseudoaneurysm as collateral circulation is usually sufficient. However, sensory disturbance may be present if the pseudoaneurysm is compressing the digital nerve, as presented in this case. Although one will expect to find a pulsatile mass, this does not always hold true as few cases involving non-pulsatile pseudoaneurysm has been reported in the literature [2]. Cases of pseudoaneurysm following repetitive blunt injury have also been reported, such as in baseball and softball players [1, 2].

The management of a pseudoaneurysm varied in the literature. Some authors performed ultrasonographic, CT angiography or MR angiography evaluation to define the lesion preoperatively. Excision of the pseudoaneurysm is always recommended and ligation of the affected artery is most commonly performed. When perfusion is not compromised, concern regarding long term digital cold intolerance is a motivating factor to reconstruct the digital artery. As microvascular techniques are becoming commonplace, microvascular reconstruction with end-to-end anastomosis [1], or reconstruction using a reversed interpositional vein [3] or arterial graft [4] had been described.

Although pseudoaneurysm of the digital artery is rare, it should be suspected when a seemingly trivial hand injury represents with a new swelling days after the initial trauma. The pseudoanerysm must be isolated and excised, and where possible, reconstruction of the digital artery with microvascular technique is encouraged (Fig. 1).

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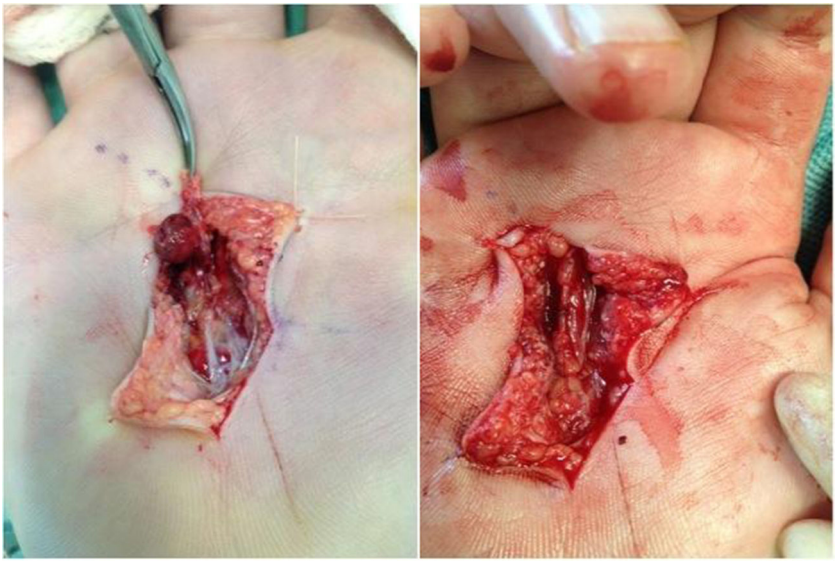

Fig. 1 Organised hematoma overlying the injured common digital artery and end-to-end anastomosis of the common digital artery following excision of the damaged segment

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