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(CASE REPORT)

Humeral Exostosis Complicated by Pseudoaneurysm of the Brachial Artery: A Case Report

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Abstract

Vascular complications of humeral exostoses are rare but potentially serious [1]. We report the case of a 60-year-old patient with no significant medical history, admitted for a painful, pulsatile mass of the left arm. CT angiography revealed a pseudoaneurysm of the brachial artery secondary to an adjacent humeral exostosis. The patient underwent excision of the exostosis, evacuation of the pseudoaneurysm, and repair of the arterial defect. Postoperative recovery was uneventful. This case highlights the importance of early diagnosis and appropriate surgical management of vascular complications related to bone exostoses [2,3].

Keywords: Exostosis; Brachial artery; Pseudoaneurysm; Humerus; Vascular surgery

1. Introduction

Exostoses, or osteochondromas, are common benign bone tumors that typically arise from the metaphyseal regions of long bones [1].

Vascular complications are exceptional but may threaten the functional prognosis of the affected limb [2].

Among these, arterial pseudoaneurysm is a rare entity resulting from progressive erosion of the arterial wall caused by the protruding bony surface [3,4]. We report a case of humeral exostosis complicated by pseudoaneurysm of the brachial artery, along with a review of the literature.

2. Case Report

A 60-year-old patient with no prior medical or surgical history presented with a painful, pulsating mass of the right arm evolving over several weeks. The patient reported prolonged use of bilateral crutches. Clinical examination revealed a pulsatile swelling on the inner aspect of the arm, tender on palpation, with an audible bruit on auscultation. Peripheral pulses were present and symmetrical.

CT angiography of the upper limb demonstrated a 3 cm pseudoaneurysm of the brachial artery adjacent to a broad-based humeral exostosis. The artery exhibited a wall defect in direct contact with the exostosis [FIGURE 1].

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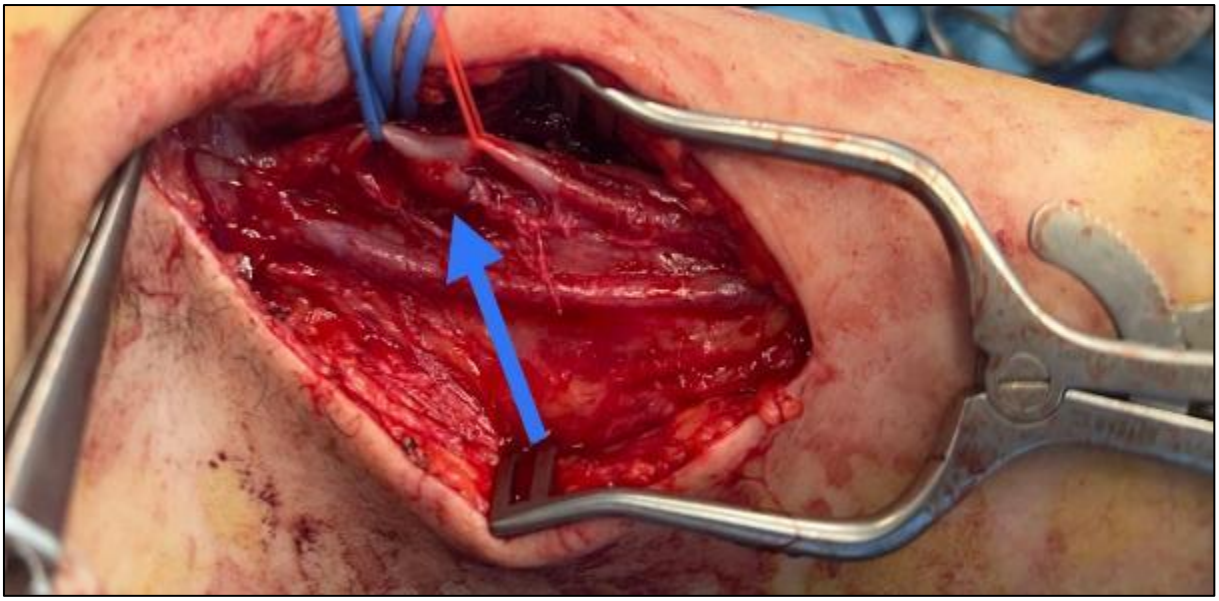

Figure 1 Intraoperative image of a humeral artery pseudoaneurysm

The patient underwent surgery under general anesthesia. An anteromedial approach to the arm exposed the pseudoaneurysm, which was opened and evacuated. The arterial defect was repaired by direct suture after resection of the responsible exostosis [FIGURE 2].

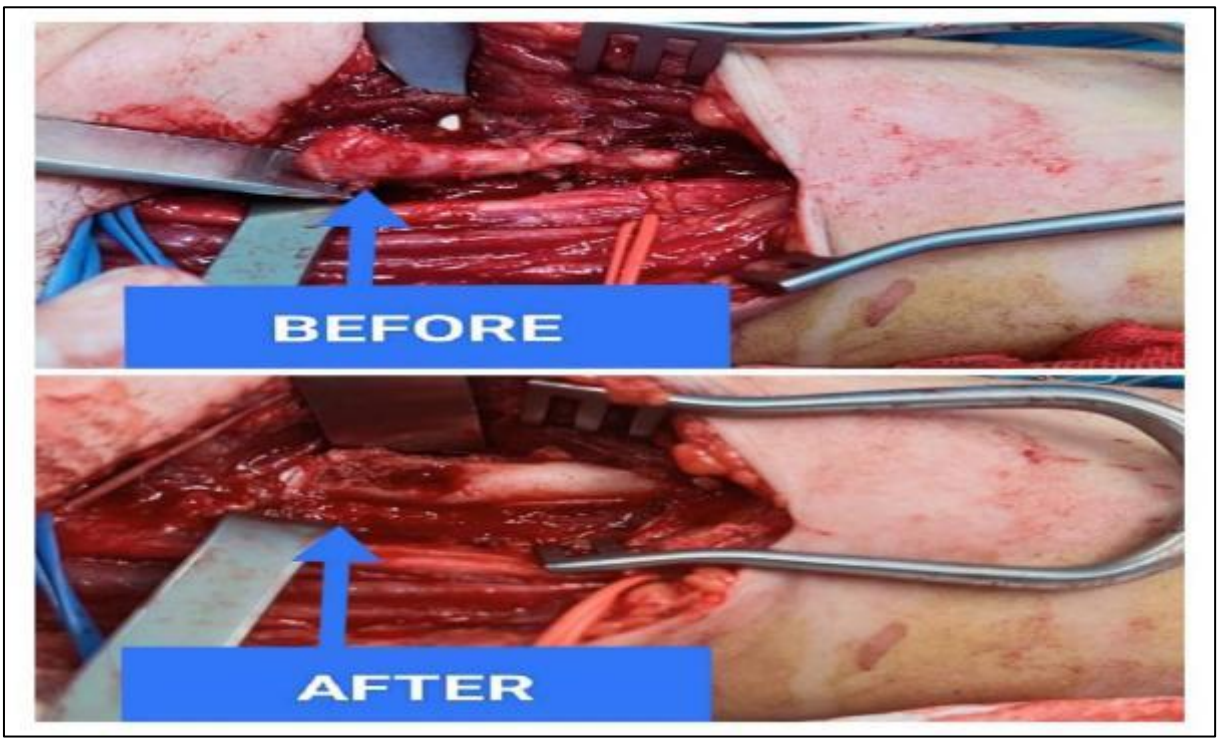

Figure 2 Intraoperative image before and after resection of the humeral exostosis

Postoperative evolution was uneventful, with disappearance of the pulsatile mass and full recovery of limb function. Ultrasound follow-up at three months showed a patent brachial artery without recurrence.

3. Discussion

Vascular complications of exostoses account for less than 1% of reported cases [1]. They occur predominantly in the distal femur and proximal humerus due to the proximity of major arterial trunks [2,3].

The main mechanism is chronic irritation of the arterial wall by the rough surface of the exostosis, leading to progressive erosion and partial rupture of the artery, resulting in a pseudoaneurysm [4].

Diagnosis relies on imaging, particularly CT angiography, which confirms the osseous nature of the lesion and delineates its vascular relationships [5].

Treatment is surgical and consists of excision of the exostosis combined with arterial repair—either by direct suture or with interposition of a venous graft depending on the size of the defect [6,7]. Prognosis is generally favorable after complete treatment [8].

4. Conclusion

Humeral exostosis complicated by pseudoaneurysm of the brachial artery is a rare but potentially serious condition. It should be suspected in any patient presenting with a painful pulsatile mass in contact with an exostosis, especially in those exposed to repeated microtrauma, such as prolonged crutch use. Prompt imaging diagnosis and surgical management ensure a favorable outcome and prevent ischemic complications.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of ethical approval

Ethical approval was obtained.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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