Unusual presentation of pseudoaneurysm of the anterior tibial artery

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Accepted 11 May 2022

DESCRIPTION

A male patient in his late 30s presented to the outpatient department with reports of pain and swelling around the knee with blood stained discharge since 2 weeks. On eliciting history, it was noted that the patient had sustained a closed fracture of the right proximal tibia (Schatzker type V) following a road traffic accident. Subsequently, the patient underwent open reduction and internal fixation, the intraoperative and postoperative period were uneventful and he was subsequently mobilised.

The patient, however, started to develop pain and swelling around the knee approximately 2 months after the procedure. He then noticed a sinus with bloody discharge. General physical examination was unremarkable. On local examination, a 15 cm surgical scar healed by primary intention was noted on the anterolateral aspect of the proximal tibia. A diffuse non-pulsatile swelling measuring 8*5 cm was present over the lateral aspect of the proximal tibia with a wound of 1*0.5 cm with bloody discharge (figure 1). Mild local rise of temperature was noted in the vicinity. The range of movement at the knee was restricted and painful. Distal pulses were palpable but feeble. There were no distal neurological deficits.

Initially it was suspected to be a case of osteomyelitis and the patient was planned for surgical management. However, a preoperative arterial Doppler done in view of feeble distal pulses showed monophasic flow in the dorsalis pedis and the anterior tibial artery. A subsequent CT-angio showed a saccular outpouching arising from the anterior tibial artery suggestive of a pseudoaneurysm (figure 2). Patient was then taken up for excision of pseudoaneurysm. Postoperatively the peripheral pulses returned to normal and arterial Doppler showed triphasic flow distally.

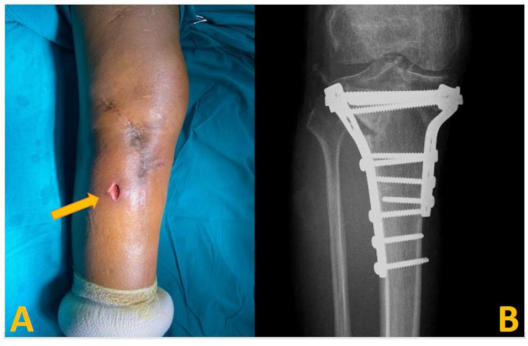

Figure 1 (A) Clinical image showed discharging sinus adjacent to healed surgical scar over proximal Tibia. (B) Radiograph showing operated fracture with implant in situ.

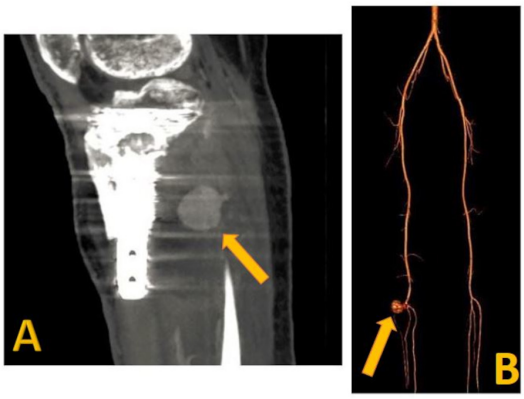

Figure 2 (A) Sagittal section of CT scan showing pseudoaneurysm. (B) CT angiogram showing a saccular outpouching measuring 2.2 × 3.7 cm × 3.4 cm (anteroposterior × transverse × craniocaudal) with short neck of 3 mm arising from the anterior tibial artery.

There have been numerous reports of pseudoaneuryms encountered in orthopaedics.[1] They are most often seen as a complication of the placement of an implant or following trauma by displaced fracture fragments.[1 2] Occasionally their appearance may mimic soft tissue tumours.[3] Patients usually present with a progressive pulsatile swelling and profuse bleeding from the wound site.[1] Distal pulses are usually normal. The mechanism of injury usually dictates progression of symptoms.[4] Fracture fragments often cause an acute presentation of a pseudoaneurysm, whereas a chronic presentation is often associated with prolonged impingement or erosion of the artery by protruding fixation that results in loss of integrity of the arterial wall. In this case, it was noted that the pseudoaneurysm was caused by the fracture as the CT image showed that the hardware was not directly in contact with the vessel.

It is vital to elicit a detailed history of mode of injury, site of injury and previous operative procedures. Such patients must be approached with a high index of suspicion and imaging techniques such as the arterial Doppler and CT angiography must be employed prior to any operative procedures.

Contributors NH was involved in designing, conducting and reporting of the case, and writing the original draft of the manuscript. SM was involved in conceptualisation, planning, writing the review and editing the manuscript. SDM contributed to acquisition of data and project administration. VP did review, editing and interpretation of the case.

To cite: Pandey V, Madi S, Hegde N, *et al*. *BMJ Case Rep* 2022;**15**:e249035. doi:10.1136/bcr-2022-249035

Patient's perspective

I had visited the orthopaedic surgeon with a discharging sinus from my knee. However, during my course of stay in the hospital, I was noted to have a pseudoaneurysm of the anterior tibial artery, for which I underwent surgery. Now I am better. I understand that this manuscript will make the readers aware of this rare clinical presentation and thereby provide better patient care.

Learning points

- Patients presenting postoperatively with bloody discharge from a sinus must be evaluated for pseudoaneurysm.
- Caution to be exercised when one is approaching lateral Tibial plateau for internal fixation to avoid inadvertent injury to the anterior tibial artery.
- Assess vascularity for all proximal tibial fractures—fresh or old.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Consent obtained directly from patient(s).

Provenance and peer review Not commissioned; externally peer reviewed.

Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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