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CASE REPORT

Pseudoaneurysm of the profunda femoris artery following an inter-trochanteric fracture of the femur

J.P. Dillon*, G.C. O'Brien, A.J. Laing, T. Adelowokan, M. Dolan

Department of Orthopaedics, Cork University Hospital, Wilton, Cork, Ireland

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Case report

A 50-year-old gentleman was admitted under our services after a fall onto his right side. He sustained an inter-trochanteric fracture of his right femur with reverse obliquity pattern and a displaced fracture of the surgical neck of his right humerus. He had a history of alcohol abuse, but his past medical history was otherwise non-contributory. He underwent dynamic hip screw fixation of his right femur and Polarus nail insertion of his right humeral fracture. His post-operative stay was complicated by delirium tremens and a below knee DVT which required treatment with warfarin. Subsequent radiographs demonstrated stable medial displacement of the femoral shaft. Following stabilisation of his medical condition, he was discharged home on crutch walking.

He was re-admitted seven months later with severe pain in his right groin radiating to the anterior aspect of his right thigh and weakness of his right leg. On examination, he was found to have a large non-expansile pulsatile mass in his right groin. Arteriography was performed which confirmed the presence of a large pseudoaneurysm arising from the profunda femoris artery. He was also noted to have an ilio-femoral thrombosis and a Greenfield filter was therefore inserted. Attempted embolisation of his pseudoaneurysm failed. He then underwent surgical repair of his pseudoaneurysm.

Post-operatively he was unable to straight leg raise and EMG studies demonstrated a severe femoral neuropathy. He was discharged from hospital on crutch walking (Figs. 1–3).

Discussion

A false aneurysm or pseudoaneurysm is a pulsatile haematoma not contained by the vessel wall layers but contained by a fibrous capsule. All have in common a persistent communication between the originating artery and the terminating blood filled cavity. Pseudoaneurysm formation can result from a variety of mechanisms including penetrating trauma, infection, inflammation or following interventional diagnostic and therapeutic procedures that involve arterial puncture. They are seen more frequently in patients who are anti-coagulated or on anti-platelet medications. Nonetheless false aneurysm of the profunda femoris artery or its branches is not a common entity 2.

Patients with femoral artery pseudoaneurysm may present with local symptoms such as an enlarging groin mass. Some large pseudoaneurysms can compress the femoral vein, which can predispose to thrombosis. They generally tend to expand more rapidly than atherosclerotic aneurysms and can rupture into the surrounding tissues. Acute compartment syndrome of the thigh secondary to a pseudoaneurysm of the profunda femoris artery has been reported following internal fixation of an inter-trochanteric fracture 5. Diagnosis of a

*Corresponding author. Tel.: +353-86-8369978.

E-mail address: dillonjp@o2.ie (J.P. Dillon).



Figure 1 X-ray showing an inter-trochanteric fracture of the right femur.

pseudoaneurysm can be detected by physical examination. A more accurate and definitive diagnosis can be obtained by ultrasound imaging. The diagnostic accuracy of duplex sonography is above 90% for pseudoaneurysms 3. Angiography is then required when planning further treatment.

False aneurysms of the profunda femoris artery is an uncommon but recognised complication of fractures and orthopaedic procedures in the upper thigh. They have been described following fixation of inter-trochanteric, sub-trochanteric and intra-capsular fractures of the neck of femur and have also been described following total hip arthroplasty 4,6,7. However, a pseudoaneurysm giving rise to a

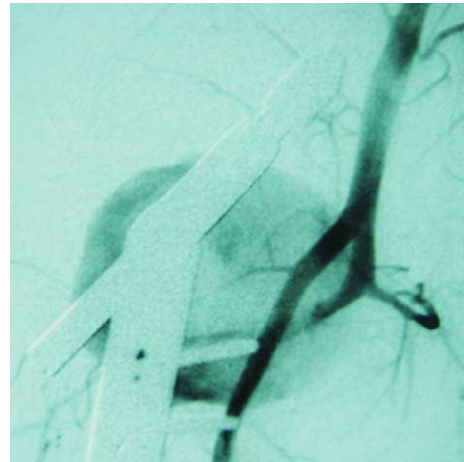


Figure 3 Angiogram demonstrating a pseudoaneurysm of the profunda femoris artery.

severe femoral neuropathy has not been described in this setting. Treatment of pseudoaneurysms generally requires surgical intervention but smaller pseudoaneurysms can be observed safely and may spontaneously thrombose. Larger pseudoaneurysms are at risk for further complications such as infection, distal embolisation and arteriovenous fistula formation and are usually treated by surgical means. Other treatment modalities include ultrasound-guided oblitative compression, direct thrombin injection or embolisation 1.

In conclusion, the potential diagnosis of a pseudoaneurysm should be considered in any patient presenting with unexplained pain or swelling following fixation of inter-trochanteric fractures, or indeed any surgical procedure or fracture of the proximal femur. This will help in establishing the diagnosis as early as possible, thereby reducing the possibility of a femoral neuropathy or further complication.

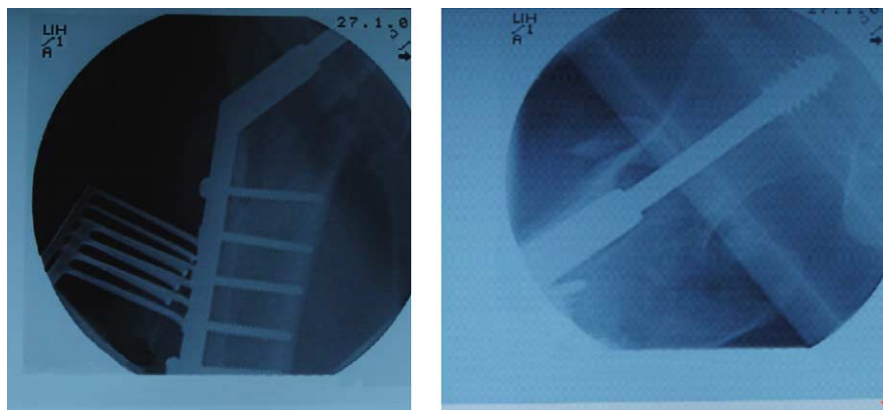


Figure 2 X rays demonstrating satisfactory position following dynamic hip screw insertion.

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