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Kombate Noufanangue Kanfitine
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

James E
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

Atana Joel
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

Bignandi V
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

Kouleke
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

Walla A
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

Corresponding Author:
Kombate Noufanangue Kanfitine
Department of Orthopaedic and Traumatology Surgery, CHU-Campus, Lomé, Togo

False aneurysm of the posterior circumflex artery, complicating septic dislocation after total hip arthroplasty: A case report

Kombate Noufanangue Kanfitine, James E, Atana Joel, Bignandi V Kouleke and Walla A

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Abstract
False aneurysm of the posterior circumflex femoral artery is a rare and serious vascular complication.
We report a rare case of false aneurysm of the posterior circumflex artery complicating a septic dislocation of a total hip arthroplasty. The diagnosis was confirmed by arteriography three months post-operatively in the presence of episodes of moderate haemorrhage against a background of anterior dislocation of an infected total hip arthroplasty. The predisposing factors found in the literature were: infection, repeated contact between the implants and the arterial wall, excessive medialisation of the acetabulum during drilling, and the effect of retractors.
Treatment consisted of arterial embolisation of the internal branches of the hypogastric and circumflex arteries after a failed attempt at surgical repair via the anterior approach.
The aim of this study was to present the value of interventional radiography in the rapid management of this serious complication.

Keywords: False aneurysm, posterior circumflex artery, embolisation, total hip arthroplasty

Introduction
False aneurysm of the posterior circumflex femoral artery is a rare and serious vascular complication [1]. It corresponds to a collection of blood or a secondary clot surrounding one of the branches of the deep femoral artery, escaping through a breach in its wall. There are multiple aetiologies, most often iatrogenic, particularly after invasive hip surgery: excessive medialisation of the acetabulum during drilling, positioning of Hohman retractors and prosthetic infections may be predisposing factors [2]. Diagnosis is often delayed in our working environment. For a long time, treatment consisted of exploration and vascular repair. Interventional radiography using arterial embolisation has improved management by preserving the vital prognosis thanks to its efficiency. The aim of this study was to clarify the value of imaging in manageme

Observation
A 32-year-old man with no particular medical history was admitted to our hospital for septic dislocation of a total left hip arthroplasty. He had been involved in a road traffic accident 13 months earlier, resulting in a fracture of the left femoral neck. The patient underwent a cemented total hip arthroplasty (cemented polyethylene cup) via Moore's posterolateral approach on 16 May 2025 in a clinic. The immediate postoperative period was uneventful. He was readmitted to the same clinic five weeks after surgery, on 2 July 2025, for an infected haematoma at the surgical site with active bleeding associated with prosthetic dislocation complicated by haemorrhagic shock.
Reanimation measures were undertaken to stabilise his haemodynamic status with a haemoglobin level of 6.2 g/dl. He was transfused with four units of packed red blood cells and two bags of fresh frozen plasma. An angioscan performed on 3 July 2025 was normal. The subsequent clinical examination revealed a haematoma at the surgical site and high anterior dislocation of the left hip arthroplasty two months post-operatively (Figs. 1, 2).

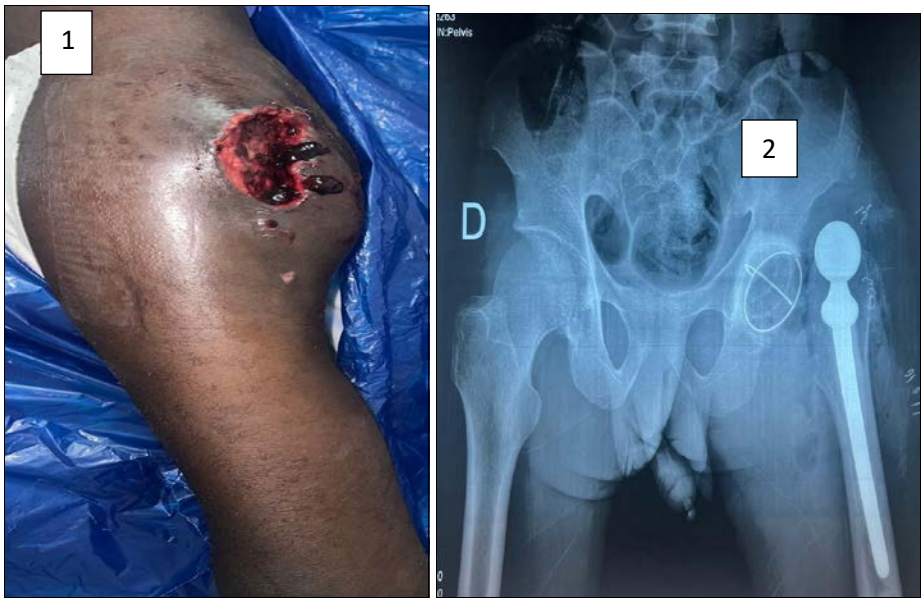

Fig (1 and 2): Haematoma through the scar tissue and anterior hip prosthetic dislocation

Surgical exploration was indicated by reopening the posterolateral scar, which revealed a large haematoma with active bleeding from the deep femoral artery. The haematoma was drained and the dislocation reduced. In view of the episodes of active bleeding (Fig. 3), vascular exploration was performed via the anterior approach. The exploration revealed bleeding from the back of the polyethylene cup. It also revealed a breach in the common femoral artery, which was repaired.

Fig 3: Episode of bleeding through the surgical scar

Seven days later, he was admitted to our hospital with the same symptoms. A blood count was performed and his vital signs were normal. During his hospitalisation, we observed four episodes of renewed bleeding accompanied by haemorrhagic shock and a haemoglobin level of 3 g/dl. Arterial embolization was indicated. It was performed on 4 August 2025 in an imaging centre (Fig: 4, 5).

Fig 4 and 5: Arteriography image showing a rounded addition image gradually opacifying from the posterior circumflex artery.

Fig 6 and 7: Arteriography image showing embolisation of the internal branches of the hypogastric and circumflex arteries and the post-operative dressing.

The results of interventional radiology were straightforward: blood pressure was 91/55 mmHg, pulse rate was 103 beats per minute, and SaO2 in ambient air was 100%, with a haemoglobin level of 6.2 g/dl, following resuscitation measures. The bleeding had stopped (Fig. 7).

Discussion

False aneurysms of the deep femoral artery and its branches are rarely reported in the literature [1, 3]. They are one of the most serious complications of orthopaedic surgery, compromising the patient's prognosis. The aetiologies are varied, most often iatrogenic, resulting from a breach following arterial catheterisation, either during the implementation of drills or the placement of cemented hip arthroplasty [4, 5]. The deleterious effect of retractors has been identified in certain studies. In our case, the false aneurysm was revealed by an infected haematoma during cemented total hip arthroplasty with episodes of haemorrhage. The presumed cause had not been clearly identified. The diagnosis of false aneurysm in countries with limited resources such as ours remains difficult due to the underdeveloped technical facilities.

Arteriography is the preferred examination, but it is not available. However, CT angiography, thanks to its accessibility and reduced artefacts, offers good vascular enhancement. This examination proved negative for our patient. It enabled a diagnosis to be made in 85% of cases [6]. False negatives are statistically due to haematomas or obliterating intraluminal clots, as reported. Their analysis gives a sensitivity/specificity of 96%/90% in diagnostic accuracy [7]. Furthermore, arteriography is a benchmark diagnostic tool that confirms the diagnosis of false aneurysm [7, 8]. It allows the branches of the vascular networks to be identified, specifying their location. Our patient presented with a breach in the deep femoral artery discovered during surgical exploration and also in the posterior circumflex artery, which was probably iatrogenic. Treatment is bimodal depending on the cause and type of lesion. Endovascular embolisation is a recommended technique for the management of smaller false aneurysms by injection of glue or thrombin, and surgical repair in the case of significant lesions [9]. It was used successfully in sequence due to the limited technical facilities available for our patient. Embolisation has been used in most series.

Conclusion

False aneurysms are rare vascular lesions, often of iatrogenic or traumatic origin. The condition is serious and life-threatening for the patient. Diagnosis must be made early, based on medical imaging, particularly CT scans and arteriography, which have high sensitivity and specificity. Management is multidisciplinary. The choice of treatment, whether surgical or embolisation, depends on the size and location of the aneurysm, which is sometimes bimodal. Monitoring remains essential to prevent recurrence and morbidity and mortality.

Conflict of Interest

Not available

Financial Support

Not available

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