



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Laceration of a branch of the profunda femoris artery caused by a spike of the displaced lesser trochanter in an inter-trochanteric femoral fracture. A case report

Vito Potenza^a, Ubaldo Saputo^b, Francesco Catellani^{a,*}, Pasquale Farsetti^a, Roberto Caterini^a

^a Department of Orthopaedic Surgery, University of Tor Vergata, Viale Oxford 81, 00133 Rome, Italy

^b Department of Anesthesiology, San Giovanni Addolorata Hospital, Via dell'Amba Aradam 9, 00184 Rome, Italy

ARTICLE INFO

Article history:

Received 19 February 2016

Received in revised form 26 May 2016

Accepted 27 May 2016

Available online 31 May 2016

Keywords:

Inter-trochanteric femoral fractures complications

Profunda femoris artery lesion

Vascular complications in orthopaedic surgery

Case report

ABSTRACT

INTRODUCTION: Injury of femoral vessels is an extremely rare complication in intertrochanteric femoral fractures. In most cases reported, the vascular lesion involves the superficial femoral artery, whereas in very few cases does it involve the profunda femoris artery.

Presentation of case: We report a case of acute bleeding due to laceration of a perforating branch of the profunda femoris artery caused by a sharp fragment of the displaced lesser trochanter in an intertrochanteric femoral fracture; the lesion was treated by transcatheter embolization.

DISCUSSION: The arterial injury may be iatrogenic, occurring during intramedullary internal fixation, or less frequently, the injury may be due to the fracture itself, caused by a sharp bone fragment that damages the profunda femoris artery or one of its perforating branches.

CONCLUSION: We believe that intertrochanteric femoral fractures with avulsed lesser trochanter are at risk for femoral vessel injuries caused by the displaced bone spike, and we advise meticulous clinical and laboratory monitoring pre- and post-operatively to prevent serious complications.

© 2016 The Authors. Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Injury of femoral vessels is an extremely rare complication in intertrochanteric femoral fractures (0.2% incidence) [1–3]. In most cases reported, the vascular lesion involves the superficial femoral artery, whereas in very few cases does the vascular lesion involve the profunda femoris artery or one of its perforating branches.

The arterial injury may be iatrogenic, occurring during intramedullary internal fixation of an intertrochanteric fracture, caused by either the drill or the distal locking screw protruding beyond the medial border of the femur [1,2,4,5–7]. Less frequently, the injury may be due to the fracture itself, caused by a sharp bone fragment that damages the profunda femoris artery or one of its perforating branches [2,3,8,9–11].

The lesion of the artery may be acute with immediate bleeding or, more frequently, chronic, in which case a gradual erosion of the vessel involved causes the progressive formation of a false aneurysm, that may be diagnosed only later on [2,4,5,6,9,11,12]. In the rare cases in which a laceration of a femoral artery causes acute

bleeding, general signs of anemia such as tachycardia, hypotension, swelling of the thigh and a rapid decrease in the haemoglobin value are present [3,7,8,10].

We report a well documented case of acute bleeding due to laceration of a perforating branch of the profunda femoris artery caused by a sharp fragment of the displaced lesser trochanter in an intertrochanteric femoral fracture; the lesion was treated by transcatheter embolization.

2. Presentation of case

An 81 year-old man in good health was admitted to our hospital for a severe pain in the right hip associated with functional impairment after a fall at home. The X-rays of the painful hip showed an intertrochanteric fracture with medial dislocation of a sharp lesser trochanter fragment (Fig. 1). At admission, laboratory tests showed a haemoglobin value of 9.4 g/dl and normal values for the patient's age of the other laboratory parameters. The patient reported that one month before the trauma, laboratory tests showed that the haemoglobin was 12.4 g/dl. Preoperatively, the patient received daily antithromboembolic prophylactic therapy. Ten hours after admission, the hip fracture was surgically treated by closed reduction and internal fixation with a standard Gamma 3 nail locked distally. The surgical procedure was performed without

* Corresponding author.

E-mail addresses: vipotenza2@virgilio.it (V. Potenza), fra.catellani@gmail.com (F. Catellani).

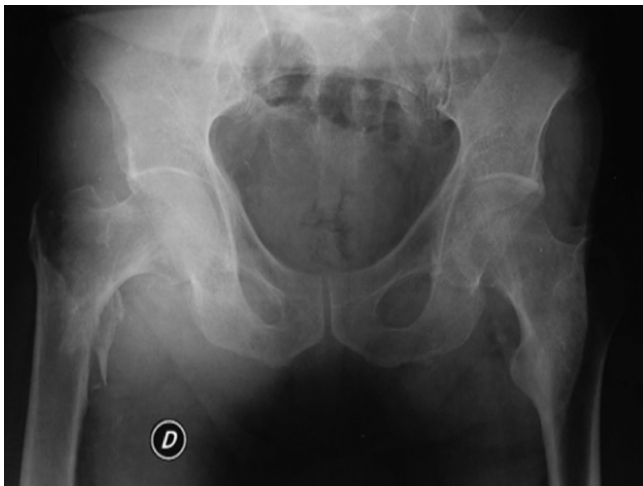


Fig. 1. Displaced intertrochanteric femoral fractures on the right side with medial dislocation of a sharp lesser trochanter fragment in an 81 year-old man.



Fig. 2. The intraoperative X-ray of the hip showed a stable fixation of the fracture.

intraoperative complications and without further displacement of the lesser trochanter that remained in the same position (Fig. 2). During the operation, the haemoglobin value showed a significant reduction (Hb 7.4 g/dl) and an intraoperative transfusion of one unit of packed red cells was performed. Postoperatively, the patient was well and he did not report any significant clinical problems. Six hours after surgery, the haemoglobin was 7.2 and a second blood transfusion was done. Twenty-four hours postoperatively, the patient presented typical clinical signs of bleeding with tachycardia, hypotension, and generalized weakness; we observed a noticeable swelling of the thigh and scrotal region associated with a large ecchymotic effusion which extended to the right hemipelvic and hemithoracic areas, although the distal pulses were present and similar to the contralateral side. The Hb value dropped to



Fig. 3. The angio-CT with 3D reconstruction of the operated thigh, performed 42 h after surgery for persistent signs of acute bleeding, showed an active extravasation from a complete rupture of a branch of the profunda femoris artery adjacent to the spike of the displaced lesser trochanter.

6.4 g/dl, and two units of packed red cells were transfused. Six hours later, the Hb value had increased to 8.6 g/dl but after another 12 h the value had decreased to 6.8 g/dl. Therefore, we stopped the antithrombotic therapy and the patient had an angio-CT with 3D reconstruction that showed an active extravasation from a complete rupture of a branch of the profunda femoris artery adjacent to the spike of the displaced lesser trochanter (Fig. 3). The vascular lesion was immediately treated in the interventional radiology room by transcatheter embolization. The endovascular procedure blocked the bleeding completely (Fig. 4A and B) and the patient had rapid clinical improvement, with a stable value of haemoglobin that rose to normal values in a few weeks. The patient was followed up regularly for 6 months until complete clinical and radiographic healing of the fracture (Fig. 5).

3. Discussion

Femoral vessel injuries in hip fractures are uncommon [4,7,9,12]. In most cases reported, these vascular injuries are iatrogenic, involve the superficial femoral artery and are caused by a protruding screw of an intra- or extramedullary implant used to treat intertrochanteric fractures [1,2,5,7,13,14]. The tip of the screw protruding beyond the medial border of the femur generally causes chronic bleeding due to a gradual erosion of the vessels, with the development of a pseudoaneurysm that may be discovered several weeks or even years after the operation [5,7]. Less frequently, the vascular injury is caused by the fracture itself. In this case, a bone spike from a displaced lesser trochanteric fragment generally damages the profunda femoris artery or one of its perforating branches, causing in some cases acute bleeding owing to complete

Download English Version:

<https://daneshyari.com/en/article/4288281>

Download Persian Version:

<https://daneshyari.com/article/4288281>

[Daneshyari.com](https://daneshyari.com)