

Case report

Avascular necrosis of the femoral head at 2 years after pertrochanteric fracture surgery: Case report



Bogdan Deleanu ^{a, b}, Radu Prejbeanu ^{a, b}, Dinu Vermesan ^{a, b}, Lucian Honcea ^{a, *},
Mihail Lazar Mioc ^a, Eleftherios Tsiridis ^c, Vlad Predescu ^d

^a 1st Orthopedics and Traumatology Clinic, Emergency Clinical County Hospital Timisoara, Romania

^b "Victor Babes" University of Medicine and Pharmacy Timisoara, Romania

^c Aristotle University of Thessaloniki, Greece

^d St. Pantelimon Emergency Hospital, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania

H I G H L I G H T S

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A B S T R A C T

Introduction: The avascular necrosis of the femoral head represents the death of bone tissue due to the lack of blood supply. The disease has a progressive evolution and left untreated leads to femoral head collapse and severe arthritis.

Case presentation: We present a case of a pertrochanteric fracture which has been successfully operated with a dynamic interlocking trochanteric gamma nail on the right hip. At 2 years after surgery the patient developed an incipient avascular necrosis of the femoral head. Despite the good positioning of the implant, we considered that the source of the pain was an intolerance of the implant, and thus we removed it. After implant removal, the patient was kept under observation and conservative treatment, to prevent further damage to the right hip and allow the healing to occur. At 6 months after the gamma nail was removed the X-rays revealed advanced avascular necrosis of the femoral head and secondary osteoarthritis on the right hip. The patient underwent surgery with an uncemented total hip arthroplasty.

Discussion: There are a few discussions regarding the avascular necrosis of the femoral head. These discussions may include the predisposing risk factors, the treatment of choice and the postoperative complications.

Conclusion: The avascular necrosis of the femoral head is a complication of pertrochanteric fractures that can not be foreseen or avoided. The optimal treatment in these cases is uncemented total hip arthroplasty.

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1. Introduction

The avascular necrosis of the femoral head represents the death of bone tissue due to the lack of blood supply. There are two main

groups of vessels which supplies the periphery of the femoral head: the inferior metaphysical and the lateral epiphysial vessels. The damage of the lateral epiphysial vessels is the most important cause of avascular necrosis of the femoral head. This complication occurs more often in intracapsular hip fractures then in extracapsular fractures. The disease has a progressive evolution and untreated leads to femoral head collapse and severe arthritis. In the young

* Corresponding author.

E-mail address: lucianhoncea@gmail.com (L. Honcea).

population, avascular necrosis can be caused by non-traumatic events such as steroid medication, alcohol excess, blood clotting disorders and any other affection that may cause bad blood-flow at the femoral head.

In our study, we present a patient with a pertrochanteric fracture that developed avascular necrosis of the femoral head, 2 years after surgery. We used the Ficat classification system for avascular necrosis, because it is a common system based on clinical examination and standard radiographs [1]. There are only a few similar cases described in the published literature because this complication does not occur very often.

2. Case presentation

We present the case of a 67 year old man, with previous medical history of Grade I hypertension and current smoking history (a pack of cigarettes a day), who presented into the Emergency Department with severe pain in the right hip and inability to walk caused by an accidental fall from the same level. A standard emergency antero-posterior radiograph showed an Evans type II [2] pertrochanteric fracture of the right hip (Fig. 1). The patient was operated with a dynamic interlocking trochanteric gamma nail (Fig. 2). There were no intraoperative or postoperative complications. The recovery plan began in the second postoperative day, with partial weight bearing on the right lower limb, and 3 months after the surgery, the patient could walk unassisted. At 6 months the radiographs showed union of the right hip fracture (Fig. 3). 2 years after the operation, the patient presented moderate pain on the right hip and limited joint mobility with no history of recent trauma. The antero-posterior radiograph revealed incipient avascular necrosis of the femoral head, Ficat stage 2 [2] (Fig. 4). Despite that the gamma nail was in a good position we considered that the source of the pain was the intolerance to the implant. The patient was operated again and the



Fig. 1. Preoperative antero-posterior radiograph.

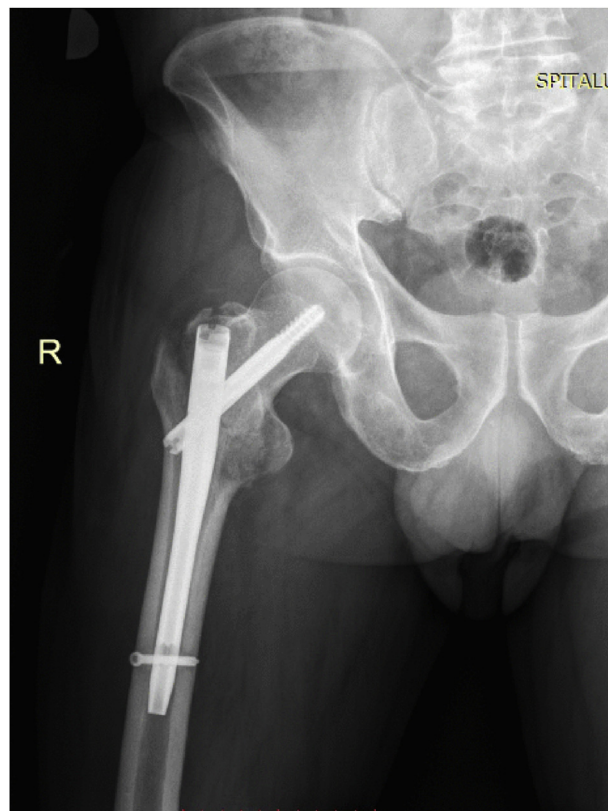


Fig. 2. Postoperative antero-posterior radiograph.

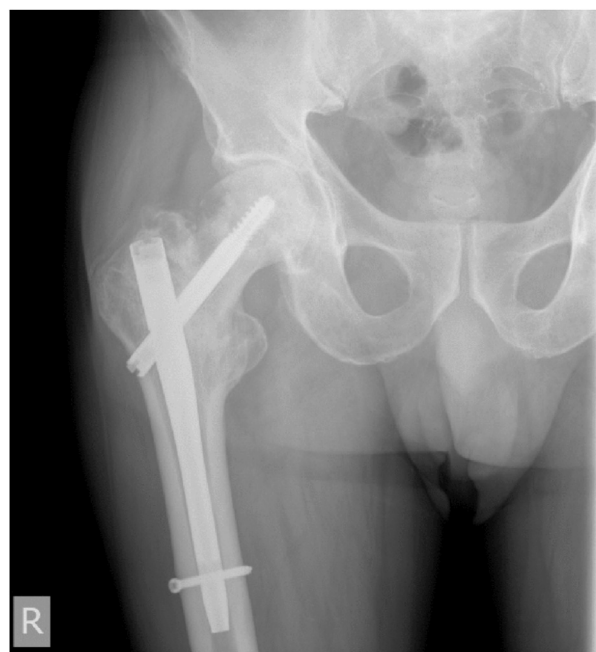


Fig. 3. Antero-posterior radiograph at 6 months.

gamma nail on the right hip was removed (Fig. 5). Postoperative the evolution was satisfactory, with small limitation of the hip mobility and a decrease in the level of local pain. After the implant removal, the patient was kept under observation and conservative treatment, to prevent further damage to the right hip and allow the healing to

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