



Case Report

Total hip revision arthroplasty of high-risk pelvic vascular injury associated with an endovascular approach: a case report[☆]



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ABSTRACT

Vascular injury during a revision total hip revision arthroplasty surgery is an uncommon event; nonetheless, it is recognized as an intraoperative complication. Preoperative planning becomes imperative in such cases, especially when there is a conflict between the implanted material and the iliac vessels. Usually an ilioinguinal approach is used to identify the vascular structures at risk and isolate them from the prosthetic components, which increases the duration and morbidity of the procedure for the patient. The article describes a less invasive alternative approach to prevent intraoperative arterial injury. The patient was informed that the data related to her case would be submitted for publication and signed an informed consent form.

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Revisão de prótese total do quadril com alto risco de lesão vascular pélvica associada a abordagem endovascular: relato de caso

RESUMO

A lesão vascular durante cirurgia de revisão da artroplastia do quadril é um evento incomum, porém reconhecido como complicação perioperatória. O planejamento pré-operatório torna-se imperativo nesses casos, especialmente quando há conflito entre o material implantado e os vasos ilíacos. Usualmente faz-se uma abordagem com via de acesso ilioinguinal para identificar as estruturas vasculares em risco e isolá-las dos componentes protéticos, o que aumenta o tempo de duração e a morbidade do procedimento para o paciente. O artigo descreve uma abordagem opcional menos invasiva para prevenção de lesão arterial intraoperatória. A paciente foi informada

Palavras-chave:

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de que os dados relativos ao seu caso seriam submetidos a publicação e assinou um termo de consentimento livre e esclarecido.

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Introduction

Arterial and venous injuries are uncommon but devastating complications during orthopedic surgeries; not only do they lead to high morbidity and mortality in patients, but there is also a high index of lawsuits associated with these injuries.¹

The usual treatment of previously identified vascular injuries involves an extraperitoneal anterior pelvic approach or a large-vessels approach through laparotomy,² which adds a higher rate of postoperative complications and greater morbidity to the revision procedure.

Case report

A 79-year-old female patient was seen at this hip surgery facility in July 2016 due to severe pain in the right inguinal region and antalgic gait. She was diagnosed with osteonecrosis of the femoral head. In 1989, she had undergone decompression of the femoral head at another medical service and in 1997 she underwent total left hip arthroplasty for the same reason. In 2003, she underwent left total hip revision arthroplasty due to the early release of the femoral component with impacted graft, and in 2004 she underwent right total hip arthroplasty, also due to coxarthrosis secondary to avascular necrosis of the femoral head. All procedures were performed by the same surgeon.

At the time of the medical appointment, the imaging exams showed the presence of hybrid total hip arthroplasty on the right with femoral component loosening (which had receded and was in varus), acetabular component secured with three acetabular screws (two intrapelvic), and volumetric wear of

the polyethylene. The authors did not have access to the radiographs taken in the immediate postoperative period and outpatient follow-up, as the patient had been referred from another medical service. The contralateral revision arthroplasty presented a normal radiological aspect, with no signs of loosening (Fig. 1).

For preoperative planning, routine radiological and laboratory exams were requested, as well as pelvic angiotomography; the patient was also seen by a vascular surgeon, who performed an arterial and venous Doppler ultrasonography of the iliac vessels (Fig. 2A and B). Imaging showed an intimate relationship between one of the intrapelvic screws and the right external iliac artery, but no signs of vascular injury or extrinsic compression were observed in the pelvic vessels studied. The patient underwent an endovascular procedure (Fig. 2C and D) for introduction of a 9 mm × 100 mm Gore Viabhan endoprosthesis with heparin in the right distal external iliac artery through a right femoral puncture. After the procedure, double antiaggregation therapy (aspirin and clopidogrel) was maintained for four weeks. The antiplatelet agents were discontinued shortly after this period, followed by total right hip revision arthroplasty using the Kocher-Langenbeck approach. The acetabular component and acetabular screws were removed without any incidence; an acetabular revision was performed with the uncemented Zimmer Trilogy acetabular system. An extended femoral osteotomy was performed for removal of bone cement and revision, using the Zimmer ZMR distal fixation modular cone body (Fig. 3).

The patient was discharged two days after the surgical procedure; two months post-revision, she presented radiological consolidation of the osteotomy and partial weight-bearing on the lower limbs was authorized.

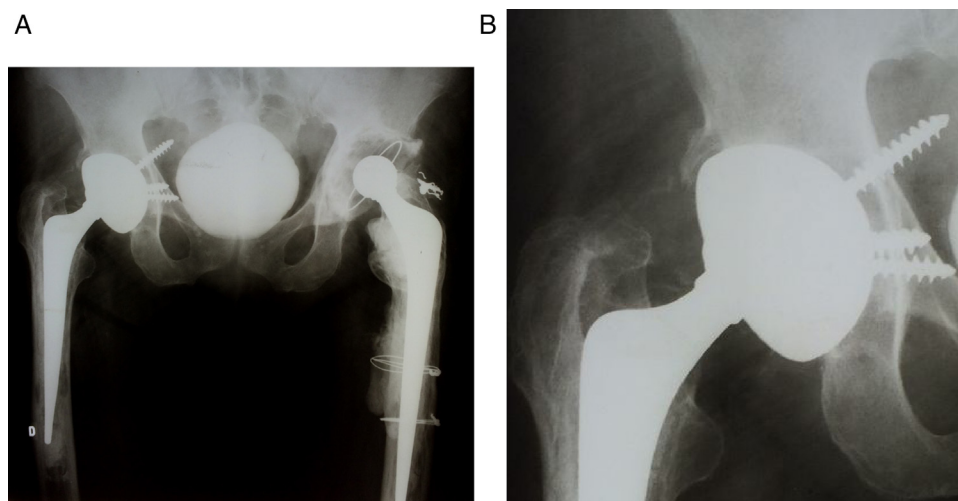


Fig. 1 – The patient's preoperative images. (A) Anteroposterior radiograph of the hip; (B) detail of the acetabulum.

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