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CASE REPORT

An unreported cause of early postoperative dislocation following total hip revision: Massive intra-capsular oedema related to inferior vena cava filter thrombosis[☆]

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KEYWORDS

Total hip replacement;
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Summary Inferior vena cava (IVC) filters are widely used to prevent pulmonary embolism (PE) in patients with an absolute or relative contraindication for anticoagulants, during the peri-operative period of trauma or total joint replacement. No complication specific to the orthopaedic's aspect of this practice has been described. We report the case of a patient who had major femoral head/cup separation mimicking dislocation following revision total hip arthroplasty related to massive intra-capsular oedema produced by IVC filter thrombosis. The patient could be successfully treated non-operatively. Orthopaedic surgeons should identify and refer patients with a complicated IVC filter, to identify any migration or occlusion, and also be aware that removable filters must not be kept in situ, once the high-risk phase of developing PE is past.

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Introduction

Venous thromboembolism (VTE) remains a major complication following total hip arthroplasty (THA), with a risk for fatal pulmonary embolism (PE) ranging up to 5%, in the absence of mechanical or pharmacologic prophylaxis [1]. Therefore, it is well admitted that patients undergoing THA require prophylaxis, while the ideal mode is still debated. In the presence of proven VTE but contraindication for anticoagulation, or recurrent VTE despite adequate anticoagulation treatment, guidelines [2,3] recommend the use of an inferior vena cava (IVC) filter. Several studies

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[4–6] have indicated that IVC filter was an effective way of preventing fatal PE in patients undergoing THA. However, complications of IVC filters have been also extensively described in the vascular surgery and radiology literature such as air embolism, arrhythmias, filter misplacement, fracture, premature deployment, tilting, angulation, migration and embolization or even erosion into pericaval structures [7,8]. Although orthopaedic surgeons are faced with an increasing number of patients requiring filter placement prior to surgery, no peri-operative specific recommendations exist in the orthopaedic literature.

We report the case of a patient who had an original incident related to his IVC filter thrombosis mimicking an early postoperative dislocation following revision THA. Dislocation occurs in 60% of cases within the first 5 weeks postoperatively. Excluding abductor muscle weakness due to nerve palsy and soft tissue or foreign body articular entrapment, early dislocation is commonly a multifactorial event, although many efforts have been made since long time in classifying different etiologies [9]. However, little is written about capsular distension in the development of this process [10]. It can be assumed that capsular distension is a significant element in dislocations related to hematoma, inflammatory synovitis or infection, but also intra-capsular oedema after vena cava thrombosis. The patient was informed that data concerning the case would be submitted for publication, and he consented.

Case report

A 50-year-old man was referred to our department for left-sided groin pain 10 years after a staged bilateral primary total hip replacement. Two years before, the patient had presented in the preoperative period of right THA revision a major venous thromboembolism that required placement of an IVC permanent filter (Vena-Tech LGM, BBraun, Boulogne Billancourt, France). The patient underwent warfarine treatment for 6 months. The patient had no discomfort related to the IVC filter that was kept in place.

The left hip had been painful until 6 months prior to the time of presentation related to aseptic loosening of both components (Fig. 1). The patient had revision of both components (Fig. 2). A usual full dose of enoxaparin 4000 IU was administrated 12 h prior to the surgery followed by a full dose daily. The patient's discharge was postponed as 10 days postoperatively, he presented acute left hip painless discomfort associated with major swelling of both inferior limbs and bilateral hydrocele testis. No calf pain was found. Radiologic examination showed a major femoral head separation mimicking dislocation (Fig. 3). Given the thromboembolic history of this patient with a permanent IVC filter, a computed tomography (CT) with contrast injection was performed and demonstrated infrarenal inferior vena cava occlusion related to a 2 cm long thrombus around the filter (Fig. 4). Anticoagulation therapy associating 8000 IU enoxaparin twice a day and warfarin was started. Once the INR was between 2 and 3, enoxaparin was discontinued. The patient was kept on bed rest with his lower limbs in suspension for 7 days. The evolution of the femoral head separation was monitored with serial radiographs. These showed progressive relocation of the femoral head inside the cup that was



Figure 1 Preoperative radiograph of the loosened left primary THA at 10-year follow-up with major acetabular osteolysis.

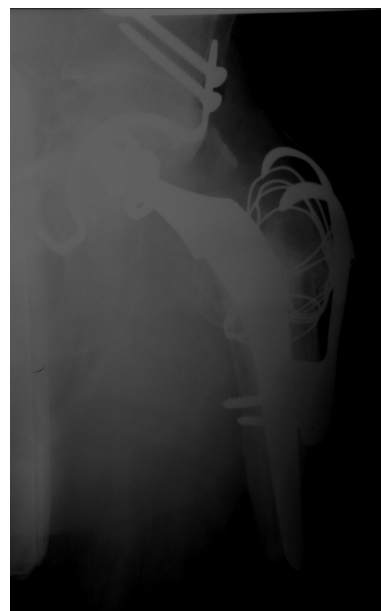


Figure 2 Immediate postoperative radiograph of the revised left hip.

completely achieved after 7 days of anticoagulation treatment (Fig. 5). After 10 days, the patient was mobilized with compression elastic stockings. Swelling completely resolved and warfarin was discontinued after 6 months (Fig. 6). The patient remained asymptomatic up to 8-year follow-up.

Discussion

To the best of the authors' knowledge, IVC occlusion leading to massive intra-capsular oedema and prosthetic femoral head separation has never been described. This complication could have been misdiagnosed as an early postoperative dislocation. Anticoagulation therapy allowed for progressive relocation of the femoral head, and no surgical intervention was needed.

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