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## SHORT REPORT

**A Case of Iatrogenic External Iliac Vein Injury During Revision Total Hip Arthroplasty**

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**Abstract:** We describe a case of iatrogenic injury to the external iliac vein by an acetabular fixation screw during revision hip arthroplasty. We highlight the presenting features of these injuries, review the literature on how they can be avoided and make suggestions as to how they can be recognised early and treated appropriately.

*Key Words:* Arthroplasty; Iatrogenic; Iliac vein.

**Case Report**

A 31-year-old lady presented to our emergency department with a history of increasing pain and swelling of her left leg following a revision hip arthroplasty a month previously at another hospital. Two years ago she had undergone a cemented primary THR for developmental dysplasia of the hip, which was now revised to a Norwich uncemented cup, secured with transacetabular screws (Fig. 1). On day 3 post-operatively she developed a painful swollen left leg, which was diagnosed clinically as a deep vein thrombosis. She was treated with heparin. This was stopped when her haemoglobin dropped to such a level that she needed transfusing 8 units of blood.

Examination 1 month post-operatively revealed a swollen mottled leg. A venogram showed patent deep veins, but tenting and partial obstruction of the external iliac vein by an acetabular screw, which had been placed in the antero-inferior quadrant of the acetabulum (Fig. 2). The vein was explored extraperitoneally and repaired with a vein patch. The screw was cut short. The remnants of the screw were covered with the iliacus muscle, and a PTFE patch sutured between the superior pubic ramus and iliacus



**Fig. 1.** Initial X-ray showing very prominent acetabular screw protruding into pelvis.

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Fig. 2. Venogram showing external iliac vein being tented by screw.



Fig. 3. Venogram after screw shortening and vein repair, showing good patency of vein.

fascia to further protect the vein. The patient made a full recovery and subsequent venography showed a patent iliac vein (Fig. 3).

### Discussion

Iliac vessel injury is a rare, but potentially devastating complication of hip surgery.<sup>1</sup> Careful preoperative planning and a thorough knowledge of anatomy help minimise its incidence. It has been shown that close follow up is essential if the screws are seen to penetrate the acetabulum.<sup>2</sup>

The postero-superior and postero-inferior acetabular quadrants have good bone stock and are safe sites for placing acetabular screws.<sup>3</sup> The anterior quadrants should be avoided due to the thinness of the bone and proximity of the iliac and obturator vessels.<sup>1,4</sup>

Leg pain or swelling, hypotension or a fall in haemoglobin in a patient with acetabular screws

should alert the surgeon to the possibility of vascular injury. Our case reminds us of the importance of maintaining a high index of suspicion for such injuries in this clinical setting. It also shows the need to have the proximal vasculature included during imaging to fully visualise all possible sites of potential intraoperative vascular injury.

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