

Laparoscopic extraction of a displaced LIH pin

A case report

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An 86-year-old woman fell in her home and sustained a left-sided femoral neck fracture. She was operated on with 2 LIH pins on the next day and mobilized with full weight bearing. Routine radiographic examination after 1 week showed a slight compression and a slight rotational displacement, as compared to pre-operative radiographs. The tips and the hooks of the LIH pins were well inside the femoral head on both examinations. She was discharged to her home 18 days after surgery and was able to walk with support.

2 months after the fracture she returned because of progressive hip pain and inability to walk. Radiographs showed that the fracture had dislocated and that one of the LIH pins had migrated through the acetabulum into the pelvis to about 3/5 of its length (Figure 1). Further radiographic examinations showed that the pin was located anterior to the rectum, causing a slight impression in the distended bladder on cystography. Because of the risk of complications if the pin were to be extracted through the acetabulum, it was decided to remove it through the abdomen. The procedure started with a laparoscopy in order to locate the pin in the pelvis and to diagnose possible perforations of the pelvic organs.

The operation was performed under general anesthesia. 2 g of cloxacillin (EkvacillinTM) was administered intravenously during the operation and continued for 5 days. After inflation of the abdomen with CO₂, and tilting the patient in a Trendelenburg position, the pin was found to be positioned in the left broad ligament of the uterus just above the iliac vessels and not penetrating the peritoneum. With a pair of scissors, the peritoneum was cut over the tip of the pin. The pin was loose and easily gripped with an endo-Babcock (Figure 2). It was extracted through the trocar after a 180° turn in the abdomen. The small hole in the peritoneum was left unsutured. The overall operation time was 15 minutes and no complications were observed peri- or postoperatively.

11 days after the laparoscopy, the remaining pin was removed and a Charnley hip arthroplasty was performed. The perforation in the acetabular wall was approximately 1 cm in diameter. It was covered with a slice from the femoral head.

At follow-up 3 months later, she was well and had resumed outdoor walking. There were no signs of infection or other complications.

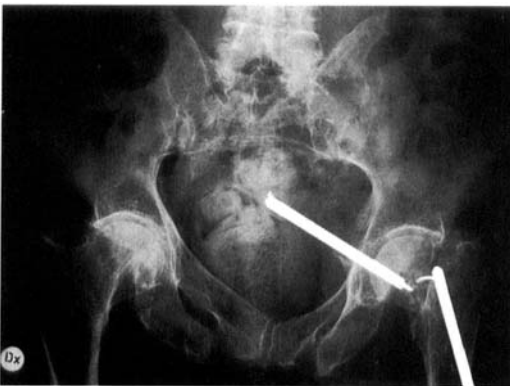


Figure 1. Dislocated LIH pin 2 months after fixation of femoral neck fracture.

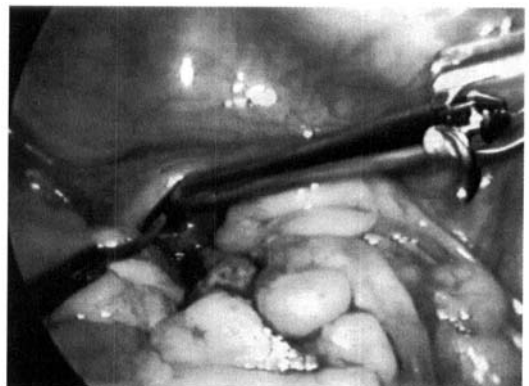


Figure 2. The pin is gripped and extracted with an endo-Babcock.

Discussion

In spite of the hook that is designed to fixate the tip of the LIH pin in the femoral head, the pin can rarely penetrate medially into the acetabulum and pelvis. In our case, as in cases from the literature (Cohen et al. 1977), the pin or screw might be situated close to the iliac vessels and the threads of a screw or the sharp hook of a LIH pin may injure the viscera or the iliac vessels. Thus there is a risk of vascular injury, either spontaneously (Posman and Morawa 1985, Sundgren and Persson 1994) or during efforts to remove the osteosynthesis material through the hip (Johnson et al. 1990). If the pin has penetrated significantly into the pelvis, it is probably safer to remove it through the abdomen. We recommend starting the procedure with a diagnostic laparoscopy because the surgical trauma is less and the view of the area is better than during open surgery. In selected cases, as in this one, the entire extraction can be performed through the laparoscope.

References

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