

Acetabular penetration of sliding screw

A case of trochanteric hip fracture

After fixation of a trochanteric hip fracture, the sliding nail disengaged from the plate and penetrated the acetabulum. The compression screw should be left in situ in these fractures.

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Case report

A 78-year-old, previously ambulant woman fell at home on February 9, 1983, and sustained an intertrochanteric fracture of her left femur, Tronzo (1973) Type II (Figure 1). On the following day, a Zimmer screw and plate was used to fix the fracture. Her postoperative progress was satisfactory and ambulation was begun on the fourth day with a walker, and after another week she was transferred to a geriatric unit for further rehabilitation. Two weeks later, on March 5, her walking ability deteriorated suddenly without trauma. Radiographs at this time revealed disengagement of the screw and plate and penetration of the screw through the acetabulum, and into the pelvic cavity. A long-stem Leinbach prosthesis was inserted after removal of the screw and plate via a posterolateral approach. The seating of the prosthesis was facilitated by a fractured greater trochanter, which was eventually wired to the shoulder of

the prosthesis. The stability of the prosthesis after full seating was so good that the original plan to insert it with cement was abandoned. The wound healed primarily. Final rehabilitation was slow but uneventful.

Discussion

The patient's osteoporosis relegated her Tronzo II fracture to a potentially unstable one. Two part fractures in such patients may become three and four part fractures during the operation. The fracture of the greater trochanter, discovered at reoperation, was probably caused at some stage during the initial operation. This aspect of potential instability needs emphasis. No foolproof system for fixation of hip fractures has yet been devised, and the list of possible

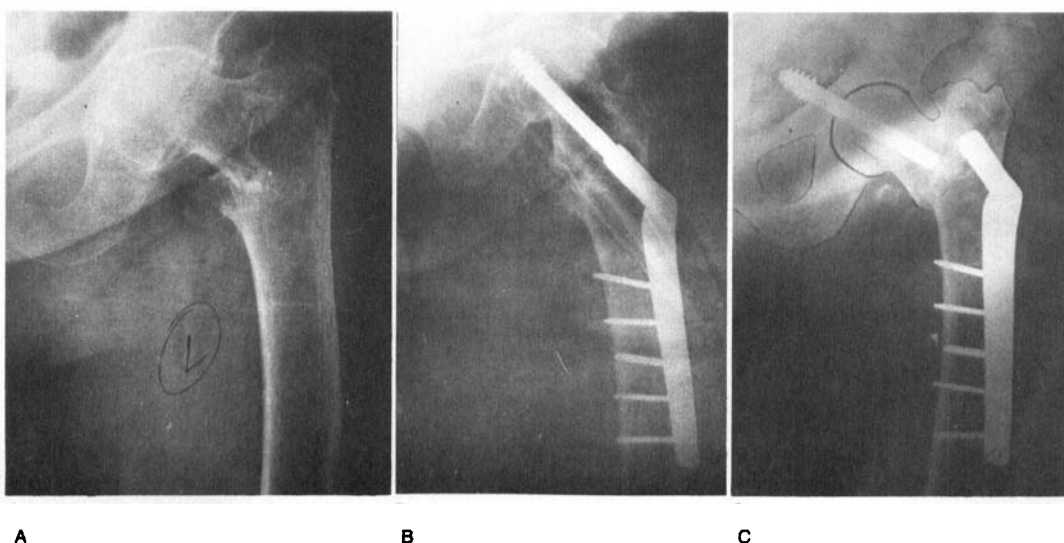


Figure 1. Anteroposterior roentgenograms of the left hip.

A. An intertrochanteric fracture.

B. Fixation of the fracture by the Zimmer screw and plate.

C. One month postoperatively, the screw had disengaged and penetrated the acetabulum.

complications cited by the manufacturer (Richards Medical Co. 1984) attests to this. However, a combination of disengagement of the nail from the plate with subsequent acetabular penetration by the screw has not been reported previously.

Retention of the compression screw following operative compression of the fracture has been considered optional (Clawson 1964, Ort 1970), the main forces across the fracture site being those of compression and shear. Disengagement of a sliding screw has been reported by Dunn & Skinner (1976), who theorized that distraction forces across the fracture generated during transfer from bed to chair could cause disengagement. They concluded that the compression screw ought to be left in place when the Dimon-Hughston method of osteotomy-medial displacement is used for the treatment of intertrochanteric fractures. Perhaps this precaution ought to be extended to all unstable and potentially unstable intertrochanteric fractures.

The marked osteoporosis in our patient should have precluded any consideration of compression, and the nail should therefore have engaged the barrel of the plate throughout its length. This precaution, though, was insufficient to prevent disengagement in the case reported by Dunn & Skinner (1976).

References

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