It is generally accepted that open reduction and internal fixation of displaced acetabulum fractures provides the best long-term results. Some patients, however, may be better served by early primary total hip arthroplasty (THA).

This article presents an elderly patient with a complex anterior column acetabulum fracture with femoral head protrusio treated with THA.

**Case Report**

A 79-year-old woman sustained a left anterior column acetabulum fracture after falling on ice. On initial presentation to the emergency room she was placed in femoral pin traction. The reduction of the acetabulum in traction was not concentric and the femoral head began to migrate centrally. Treatment options, including primary THA after the acetabulum fracture healed, were discussed with the patient.

The traction was discontinued at 6 weeks, and the patient was allowed to transfer from the bed to the chair. Three weeks later she was ambulatory with a walker, nonweight bearing on the affected side. When the acetabulum fracture healed, she was advanced to weight bearing as tolerated. No further migration of the femoral head was noted (Figure 1). Surgery was initially planned for when the fracture healed, but at the patient’s request was postponed until 6 months after the initial injury.

At surgery, the patient was placed in the lateral decubitus position and a posterior approach...
was used. The gluteus maximus tendon bony insertion on the femur was released to allow adequate leg lengthening. The external rotators were released and the femoral neck exposed. The neck cut was made without dislocating the femoral head. The femoral head was left in place as a graft to fill the acetabulum defect. A standard acetabulum reamer was used to prepare the socket, and the bony reamings were packed around the head for additional bone graft.

A porous-coated, 54-mm acetabulum cup was press fit into place and four screws were inserted to secure the cup and hold the femoral head graft securely in position. A press-fit femoral stem was inserted with the usual technique.

Postoperatively, the patient was allowed to put up to 50% of her weight on the left hip. She was transferred to a rehabilitation facility and was advanced to full weight bearing 6 weeks postoperatively. At 12 weeks, the patient was pain free, full weight bearing, and ambulating independently (Figure 2).

DISCUSSION

Studies have demonstrated that the best outcomes following displaced acetabular fracture are achieved with early, accurate open reduction and internal fixation. Complex fractures, such as this case, require an extended surgical approach to repair primarily. Possible complications include excessive blood loss, nerve and vessel damage, nonunion, hardware failure, and infection.

These potential complications are more pronounced in patients with comminution and osteoporosis. Primary THA is an attractive alternative; however, this procedure often fails if the pelvis is not stabilized adequately. One option is to perform open reduction and internal fixation of the acetabulum and then proceed with THA in the same sitting. This extensive procedure has many of the potential complications listed above, but has the advantage of not requiring an anatomic acetabular reduction.

One objection to waiting for severe total hip arthritis to develop then converting to a THA, is the loss of bone stock and need for an allograft replacement. By planning for an early conversion to THA, this loss can be minimized. The patient’s own femoral head provides the best filler for the acetabular defect, with overall more rapid healing of the femoral head to the pelvis.

Other studies reported a higher complication rate with open reduction and internal fixation after delays of 21-120 days. We avoided possible complications by minimizing leg shortening with initial traction, releasing to the gluteus maximus insertion to aid with gaining back the 2.5-cm length that was lost, and by performing THA rather than reconstruction of the acetabulum surface with open reduction and internal fixation.

REFERENCES


Figure 2: The femoral head can be seen behind the cup, healed to the surrounding pelvis. This provides a stable support for the cup, preventing central migration.