INTRODUCTION
Neck of femur fractures in elderly patients with hip resurfacing in situ are rarely reported injuries. We report a case of intertrochanteric fracture in a 62 year old man with ipsilateral Birmingham Hip Resurfacing (BHR) arthroplasty, successfully treated with internal fixation using proximal femoral nail. There were no intraoperative or postoperative complications and the patient returned to his normal level of activities within 6 months after the fixation. In conclusion we have demonstrated that fixation with proximal femoral nails can be an alternative safer option in treatment of these complex injuries.

Key words: Proximal femur nailing; Hip resurfacing; Intertrochanteric fracture, Fixation

CASE REPORT
62 year old gentleman, a retired police personnel by profession presented after a fall on his left hip when he tripped over a step in his garden and presented with pain in left hip and inability to weight bear. The preoperative X rays depicted below confirmed the complex injury with stable grade 1 (Boyd and Griffin) intertrochanteric fracture with bilateral resurfacing hip arthroplasty in situ (Figures 1 and 2). This was an isolated and closed injury with no associated neurovascular deficit. Prior to the fall, he used to mobilise independently and his Harris Hip score at two year follow up following BHR was 88 for right and 84 for left side. Past medical history including oral steroids intake in the past for Psoriasis and Hypertension.

Proximal Femoral Nailing for Intertrochanteric Fracture in Birmingham Hip Resurfacing Arthroplasty
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ABSTRACT
Neck of femur fractures in elderly patients with hip resurfacing in situ are rarely reported injuries. We report a case of intertrochanteric fracture in a 62 year old man with ipsilateral Birmingham Hip Resurfacing (BHR) arthroplasty, successfully treated with internal fixation using proximal femoral nail. There were no intraoperative or postoperative complications and the patient returned to his normal level of activities within 6 months after the fixation. In conclusion we have demonstrated that fixation with proximal femoral nails can be an alternative safer option in treatment of these complex injuries.

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The case was discussed in a multidisciplinary meeting in the department and it was decided to fix the fracture while retaining the prosthesis in an attempt to avoid major reconstruction and also considering the fact that he had no problems with respect to his resurfaced hip prior to the fall. There was no evidence of loosening or osteolysis of the BHR implants on preoperative X-rays.

Patient was taken to theatre within 36 hours of admission. Satisfactory reduction was achieved intraoperatively after closed reduction on the traction table. The fracture was fixed using Expert Lateral Femoral Nail (Synthes) and two proximal locking screws were inserted, one superior and one inferior to the central peg of BHR femoral component. Care was also taken to avoid drilling near the prosthesis so that the prosthesis fixation would not be jeopardized.

Post operatively he was allowed to mobilise without any weight bearing restrictions and he was discharged on 3rd postoperative day with no complications. Post operative radiographs taken on day 2 were satisfactory (Figures 3 and 4). He made a successful recovery and within 6 months he had returned to his normal level of activities. Examination of hip at follow up showed a painless range of movement equal to that of his other hip. Radiographs at 6 month follow up confirmed the healing of the fracture site (Figures 5 and 6).

Figures 1 and 2 show pre op images with fracture while figures 3 and 4 show immediate post operative pics while 5 and 6 show union of fracture at 6 months.

**DISCUSSION**

Although an intertrochanteric fracture is a very common injury it is extremely unusual to have this in a hip resurfacing patient. Various management options include nonoperative, internal fixation and revision arthroplasty. The choice depends on the fracture pattern and physiological status of the patient. It is always a surgical dilemma to whether retain a well fixed resurfacing implant with stable internal fixation of the fracture or to revise to total hip arthroplasty. Annig et al\(^9\) reported good results following intramedullary fixation along with cerclage wires in their case report of a patient with a comminuted fracture of the proximal femur with Birmingham hip resurfacing implant in situ. Whittingham-Jones\(^10\) reported fixation of a subtrochanteric fracture femur around a hip resurfacing in a 32 year old female following a road traffic accident fixed with non locking broad AO DCP. They felt using an intramedullary nail could cause further comminution or could have inadequate fixation in the femoral neck due to fixed angulation of locking screws of the nail being precluded by the stem of the resurfacing implant. However, we did not encounter any of the above problems during the procedure.

We describe an alternative technique that could be considered as a
method of choice for internal fixation due to inherent advantages of an intramedullary nail over plating, which include early full weight bearing mobilisation and less blood loss and early recovery. We feel the success of the technique relies on achieving stable and near anatomic reduction of fracture and offers clear advantage in dealing with unstable intertrochanteric fracture with comminution or reverse oblique pattern. It also allows preservation of bone stock and retention of previous well functioning prosthesis.

CONCLUSION

Proximal femoral nail can be considered an option in treating intertrochanteric periprosthetic fractures in the presence of a Birmingham hip resurfacing implant. With meticulous preoperative planning and precise attention to the surgical technique, favourable results can be achieved to manage these challenging fractures.

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