Intertrochanteric fracture after Hip Resurfacing Arthroplasty: Successful non operative treatment

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Abstract

Traumatic periprosthetic fractures adjacent a Hip Resurfacing Prosthesis are rare, and their treatment is, at times, challenging. We present a case report of a 55-year-old patient who sustained a traumatic intertrochanteric hip fracture 6 years after hip resurfacing and our successful non operative management. The patient has returned to his normal level of activities and the prosthesis is retained and well fixed. We have shown that non operative treatment may be a good option for non displaced intertrochanteric fractures and those where a stable anatomical reduction can be obtained.

Introduction

Modern Total Hip Arthroplasty is considered one of the most successful surgical treatments ever developed. Its current form resulted from an evolution of ideas starting in the late 19th century. Resurfacing hip arthroplasty (RHA) is one adaptation along the course of this evolution. RHA was conceptualized and then championed as a technique that better replicated the normal anatomy of the hip and conserved host bone. In its early clinical application, RHA was met with unanticipated complications including femoral fracture, osteonecrosis, materials failure, and implant loosening. Today, with the advent of bearing material improvements and better understanding of tribology as related to large-diameter hip bearings, RHA remains a viable option for hip reconstruction in properly indicated patients. Issues and concerns associated with patient selection, risks associated with metal bearings [1], and exacting surgical techniques continue to limit wide adoption of the technology [2].

The most common mode of failure of hip resurfacing is intracapsular fracture of the neck of femur. Intertrochanteric fractures are very rare, however, with the increasing popularity of Resurfacing Arthroplasty, are likely to increase in frequency.

We present the case of a patient in whom an intertrochanteric femoral fracture distal to a Hip Resurfacing implant was successfully managed with non operative treatment.

Case Presentation

A 55 year old man had Conserve Plus Total (Wright Medical) Hip Resurfacing for symptomatic osteoarthritis using a standard posterior approach [3] in 2006. At the time of the original surgery there were no complications. Immediate postoperative radiographs revealed satisfactory orientation of the implant, and the patient made an uneventful recovery. At twelve months postoperatively, the prosthesis was considered to be functioning well on the basis of satisfactory pain relief as reported by the patient. He was able to ride bicycle 1 year after the operation. Radiographs at one year showed the prosthesis to be well fixed with no change in position and no new radiolucency relative to the immediate postoperative radiographs.

He presented again in 2012; 6 years after Resurfacing, with a painful left hip following a fall from his bike and inability to weight bear. Plain radiographs and CT Scan confirmed a non displaced intertrochanteric fracture of the proximal femur.

After consideration of the management options, and the characteristics of the patient (young, active, compliant) it was decided to treat the fracture non operatively, while retaining the prosthesis in an attempt to avoid major procedures that could jeopardize the future of the implant.

From the beginnig, the patient commenced toe touch weight bearing with crutches, with gradually increasing partial weight bearing over the next 8 weeks. Weekly radiographs were taken to monitor for displacement and progress to union.

At 8 weeks the radiographs showed fracture healing. At 3 months the patient was fully weight bearing. At 5 months the patient was pain free and mobilising independently. These patients should be followed up closely postoperatively [4].

Discussion

The increasing popularity of Hip Resurfacing Arthroplasty, particularly in young active patients, will likely lead to a greater incidence of periprosthetic

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fractures. The available options for treatment in the order of increasing invasiveness are nonoperative cannulated screws, intramedullary nailing/blade plating/dynamic hip screw (DHS), and revision to a total hip arthroplasty [5].

We suggest to manage these periprosthetic non displaced intertrochanteric fractures non operatively in compliant patients in an attempt to avoid major procedures that could jeopardize the future of the implant.

We report a case of successful non operative management for a non displaced intertrochanteric fracture of the femur with gradually increasing weight bearing.
Illustrations

Illustration 1

Stable Intertrochanteric hip fracture  AP X-ray

![Stable Intertrochanteric hip fracture](https://example.com/stable_intertrochanteric_hip_fracture_ap_x-ray)

Illustration 2

Initial CT-Scan. Acute Intertrochanteric fracture

![Initial CT-Scan. Acute Intertrochanteric fracture](https://example.com/initial_ct-scan_acute_intertrochanteric_fracture)
Illustration 3

Stable Intertrochanteric hip fracture Axial X-ray

Illustration 4

AP X-ray after 8 weeks
Illustration 5

Axial X-ray after 8 weeks

Illustration 6

CT-Scan after 6 months