

An Ipsilateral Subtrochanteric Femoral Neck Fracture In The Presence Of An Established Subcapital Non-Union

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Abstract— In this case we describe a 56 year old lady who suffered an ipsilateral non-union of a subcapital femoral neck fracture and an acute subtrochanteric fracture. She had been listed for a semi-elective Total Hip Replacement after a delayed presentation following the initial subcapital fracture. She subsequently fell again sustaining a subtrochanteric fracture of the same hip prior to her planned operation. She was admitted for a complex arthroplasty, where a long stemmed revision femoral component was used. This is the first time an extracapsular fracture has been described in the presence of an established non-union of the ipsilateral hip. In such cases we believe the patient should be treated in the same manner as a periprosthetic hip fracture where there is an unstable stem.

Index Terms— Arthroplasty; Complex Primary; Fractured Neck of Femur ;Trauma.

I. INTRODUCTION

Femoral neck fractures are extremely common and make up a large proportion of a trauma surgeon's work load. The principles of management of hip are well established and are based on fracture location, displacement, functional demand of the patient as well as time since the injury(1). It is unusual for a patient to sustain an ipsilateral intracapsular and extracapsular hip fracture, but when they do they tend to occur in a bimodal distribution (2). There have been few cases previously described where both fractures have occurred during a single trauma. In some cases the intracapsular fracture may not have been recognised on the initial film and only becomes apparent when the head develops avascular necrosis or the fixation fails (3). This case is unusual in that there was already an established non-union of the femoral head when the patient presented and she was young with a high functional demand.

II. CASE PRESENTATION

A 56 year old lady first presented to our orthopaedic department several weeks after a fall. She had pain but did not initially seek medical attention. Due to on going pain she eventually attended for a radiograph and diagnosed with a non-union of a subcapital fracture. The decision was made to perform the procedure as an urgent elective case at the local

elective unit for a primary total hip arthroplasty. In the following days the patient again fell at home injuring the same hip. She attended the emergency department having sustained a subtrochanteric fracture, figure 1. The patient was admitted and underwent a complex primary arthroplasty using cables and an uncemented Cannulok (Orthodynamics, Gloucestershire, UK) revision stem under the care of the Trauma surgeon on call. She has been followed up in clinic and radiographs, figure 2, show fracture union by the six month stage and the patient had a modified Oxford Hip Score of 41/48.

III. DISCUSSION

Concomitant ipsilateral intracapsular and extracapsular fractures are rare and treatment controversial. If diagnosed at the time of a single injury with minimal displacement of the intracapsular component then some advocate internal fixation whilst others an arthroplasty(4). In the situation where the blood supply to the femoral head has been disrupted, such as this case, internal fixation is not an option. The subtrochanteric component makes for an unstable proximal femur, and as a result, a standard arthroplasty not possible. The principles of treatment in this situation are more representative of a periprosthetic fracture with an unstable stem and cases should be treated as such by surgeons with experience of performing revision surgery. Anequivalent periprosthetic fracture would be classified as a Vancouver B2 or B3 fracture(5). It is accepted practice that these fractures should be treated with a long stemmed prosthesis(6).



Figure 1: Initial Radiograph Showing An Established Non-union of a Sub-capital Fracture and an Acute Subtrochanteric Fracture



Figure 2: Radiographs at Six Months Post-Operatively Showing Fracture Union

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