

# A Case With A 32 Month Delay In The Union Of An Operated Fracture Of The Neck Of Femur: Does Supervised Neglect Have A Role?

N ul Gani, M Farooq Butt, S Ahmed Dhar, M Farooq, K Ahmed kangu, M Ramzan Mir, M Ahmed Halwai

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## Abstract

Femoral neck fracture is an unresolved clinical entity for the orthopaedic surgeon. The displaced fractures in the adults are invariably treated by closed reduction and internal fixation followed by early mobilization. Anatomical reduction and rigid internal fixation are amongst the few important surgically controlled factors determining the outcome of treatment. Avascular necrosis of the femoral head and non-union of the fracture are the most common complications of these fractures. Delayed or Non Union often manifests as continued pain with weight bearing beyond three months post fixation and is usually diagnosed radiographically at six months. Whereas treatment of an established non union is based on the age and other factors; it is the timing of intervention which is not clearly defined in the literature. This case report highlights role of careful supervision of an ununited fracture that eventually went on to unite at 32 months after the index procedure. We believe, if the implant is holding and patient is able to continue weight bearing, some of these fracture may eventually unite without secondary intervention

## INTRODUCTION

Femoral neck fractures remain a vexing clinical problem for orthopaedic surgeons. Attempting to conserve the femoral head often leads to healing complications, while the more predictable prosthetic replacements are associated with poorer function and significant complications<sup>1</sup>. Treatment of these fractures depends on the age of the patient, fracture displacement, bone quality, timing of surgery and activity level of the patient. Displaced fractures in healthy, active patients are best treated by reduction and internal fixation. A good anatomic reduction is mandatory. Femoral neck fractures reduced anatomically are best fixed with three pins or screws<sup>2</sup>. There are however, complications unique to femoral neck fractures which are almost impossible to predict. Non union and avascular necrosis are amongst the most prominent. Non union usually can definitely be diagnosed within a year of fracture fixation with the same being achieved within three months at times<sup>3</sup>. After non union has been established, intervention is inevitable. The decision to proceed in the management of failed fixation is based on the careful consideration of various factors<sup>4</sup>. In young patients revision internal fixation with cancellous or

muscle pedicle bone grafting or an osteotomy results in useful outcome.

We report a case of non union of the fracture of the neck of the femur, who refused additional procedures after his non union, had been established. The patient consented to a regular follow up ensuring careful supervision. The fracture eventually healed at 32months radiographically.

## CASE REPORT

A 38 year old male businessman reported to the out door department of our hospital with a history of a fall from height. Clinical and revealed displaced fracture of the neck of the femur. The patient was operated within hours.

Intraoperatively the Garden alignment index was used as a yardstick of acceptable reduction. The fracture was fixed with 3 AO 6.5 mm cannulated screws in an inverted triangle. Post operatively the patient was put on walker ambulation. The patient was followed serially till 6 months. From 3 months onward the patient complained of persistent but mild groin pain ambulation which was assisted. Radiographs at six months showed non union. patients conservative line was

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continued till one year when his symptoms continued and radiologically there was no progress. At this point the patient was advised about the surgical options. He refused surgical preferring the use of a stick. However he consented to a regular 2 monthly follow up. The implant in the mean time had not displaced. Twenty six months into the post operative follow-up the patients pain subsided and radiographs started showing signs of union. A radiograph taken 32months after the fixation showed full union. The patient at this point was asymptomatic.

**Figure 1**

Figure 1: At 6 months



**Figure 2**

Figure 2: At 12 months



**Figure 3**

Figure 3: 1 month after fixation



**Figure 4**

Figure 4: After 32 months



## DISCUSSION

Non union after femoral neck fracture can be defined as a lack of radiographic evidence of union 6 months after the fracture<sup>6</sup>. Delayed or Non Union often manifests as continued pain with weight bearing beyond three months post fixation<sup>1</sup>. Incidence of non union of femoral neck fractures has been reported to be between 2 to 22% and generally becomes apparent within one year<sup>7,8,9,10</sup>. The risk of non union is even greater with displaced fractures.

Anatomical reduction and rigid internal fixation are the two important surgeon controlled factors that may contribute to outcome. Garden alignment index is the yard stick of reduction<sup>11</sup>. Most authors recommend fixation with 3 cannulated screws usually in an inverted triangle<sup>12</sup>. The implant in our case was placed as per the recommendation<sup>5</sup>. The fracture itself was anatomically reduced.

Once non union is established, intervention is usually required. There is no time frame in literature regarding this

intervention. The preferred treatment for symptomatic non unions in the elderly is prosthetic replacement. In the young active patients, femoral head salvage is almost always indicated<sup>5</sup>. If failure is due to technical errors, revision open reduction and fixation may be adequate. In most cases however an osteotomy is done<sup>14</sup>. The timing of intervention however is debatable. Our case demonstrates that as long as the implant is holding and the patient is regularly followed up good results might be expected in cases as far as 32 months into the post fixation period.

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**Author Information**

**Naseem ul Gani**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Mohammad Farooq Butt**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Shabir Ahmed Dhar**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Munir Farooq**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Khurshid Ahmed kangu**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Mohammad Ramzan Mir**

Govt. Hospital For Bone & Joint Surgery Srinagar

**Manzoor Ahmed Halwai**

Govt. Hospital For Bone & Joint Surgery Srinagar