Intramedullary fixation of complex unstable proximal femoral fractures: A district general hospital experience

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Treatment of complex and unstable proximal femoral fractures is challenging and difficult. The aim of the study is to review the results of intramedullary fixation of these complex and unstable proximal femoral fractures using a Long Gamma Nail. Between 1996 and 2002, 61 complex and unstable proximal femoral fractures in 61 patients were treated with Long Gamma Nail. There were 40 female and 21 male patients with an average age of 76 years. Fifteen of these fractures were pathological and 46 were posttraumatic. Left side was involved in 33 patients and right in 28. Average time from presentation to surgery was 1.9 days. A Long Gamma Nail was used in all patients and distal locking was performed in all but 4 patients. Intra-op blood loss 600 ml (range 300—1000 ml). Average post-op transfusion rate was 2.2 units. Mean hospital stay was 14 days. All patients were allowed unrestricted post-operative mobilisation. The average follow-up was 14 weeks (range 6—52 weeks). Six patients had intra-operative complications. Two patients had intra-articular penetration of lag screw, three had a drill bit broken during distal locking and one had splitting of greater trochanter requiring revision to DCS subsequently. Intra-medullary fixation of complex and unstable proximal femoral fractures with Long Gamma Nail produces satisfactory results. It is biomechanically superior to extra-medullary devices and allows unlimited weight bearing postoperatively.

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What is the most common systemic complication in patients with neck of femur fractures?

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Objective: To study the prevalence of local and systemic complications in patients with hip fractures.

Design: Daily documentation of adverse episodes in 69 consecutive patients with hip fractures above 60 years attending a leading teaching hospital between July and November 2004.

Results: The mean age of the patients was 82.5 years (60—100 years). 59.4% of the patients sustained intra-capsular and 40.6% extra-capsular fractures. Thirty-nine (56.5%) patients had general and 30 (43.5%) had spinal anaesthesia. More than half (56.5%) of the patients were continent. Ninety-one percent received antibiotic prophylaxis while only 71% and 60.8% received chemo-thrombo prophylaxis and MRSA prophylaxis, respectively. Eleven (15.9%) patients were unwell on admission (nine had urinary tract infection and two had a respiratory infection). Twenty five (30.6%) developed complications following admission, 4 developed local complications (superficial wound infection (3) and DVT (1)) and 21 developed systemic complications comprising of urinary tract infections (15, all females), pneumonia (3), acute renal failure (2), upper GI bleed (1)). The mean time of diagnosis of UTI was 5.5 days (range 2—24). Unlike to the previous reports, higher incidence of UTI was found in patients with extra-capsular fractures. No significant difference has been found in relation to the incidence of urinary tract infection and anaesthetic technique. However, all the three patients that developed pneumonia had a general anaesthetic. There was a significant delay in discharge in patients with complications (24.5 days) compared to the group that did not develop any significant complications (20.8 days).

Conclusion: This study indicates that urinary tract infection is the most common systemic complication in patients with neck of femur fractures. Fracture type seems to be unrelated to the development of urinary tract infection and anaesthetic technique. However, all the three patients that developed pneumonia had a general anaesthetic. There was a significant delay in discharge in patients with complications (24.5 days) compared to the group that did not develop any significant complications (20.8 days).

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Assessing the accuracy of femoral neck resection in hip hemiarthroplasty: A simple radiological method

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Introduction: Hip hemiarthroplasty provides a rapid recovery and restoration of function in elderly patients with displaced intracapsular fractures of the femoral neck. The problems of re-displacement, non-union and avascular necrosis associated with internal fixation are avoided. However, many patients who survive for a significant period of time following a hip hemiarthroplasty develop complications that require revision surgery. Attempts have been made to predict the risks of developing complications using patient data, such as age and pre-morbid functional level. Little has been described about the adequacy of the surgical procedure and the associated complications, despite the fact that accurate femoral neck resection during a hip hemiarthroplasty influences the functional outcome. A simple radiological method of assessing the adequacy of femoral neck resection has been used by one of the authors (MSB) for some time, and is described. It is based on the relative position of the femoral head center, and the center of the prosthesis after operation to the tip of the greater trochanter of the femur before and after surgery. The adequacy of femoral neck resection influences soft tissue tension across the hip joint, and this has an influence on loosening of the prosthesis, pain and acetabular erosion.

Aim: To assess the accuracy of femoral neck resection during hip hemiarthroplasty for intra-capsular fractures of neck of femur.

Method: A retrospective radiological review of 107 patients. A radiological method of assessing femoral neck resection is described.

Results: Patients were studied in two groups, depending on the choice of prosthesis used. The change in relative position of the femoral head to the femur following surgery was calculated. The Chi-squared test for non-parametric data was used to calculate the results and limits of agreement were calculated using the method described by Bland and Altman. It has been suggested that a difference of ±5 mm in the femoral head centre to the tip of the greater trochanter is acceptable. This translates to a percentage value of between 8.8 and 11.4 mm, depending on the prostatic head size. Prosthetic head sizes in our series varied from 42 to 60 mm. A suggested tolerance range for the percentage difference would therefore be between −11.5 and +11.5 mm. Sixty eight percent of the femoral neck resections carried out using an Austin Moore implant came within the tolerance range compared to 58% of the femoral neck resections with Thompson prosthesis. Of those resections that fell outside the tolerance range, the percentage involving Austin Moore prosthesis that were inadequately and excessively resected was 40% and 60%, respectively, whereas nearly all of the procedures involving the Thompson prosthesis (95%) were inadequately resected. The mean extent of inadequate resection was slightly higher in the Thompson group, and when compared with the Austin Moore group, it was 18.17 mm as apposed to 16.25 mm. However, this was not a statistically significant difference. The mean extent of excessive resection in the Austin Moore group was −16.25 mm. The 95% limits of agreement were −11.4 to 28.6 for the Thompson prosthesis and −22.53 to 20.37 for the Austin Moore group.

Conclusion: Few authors comment on the adequacy of the surgical procedure in hip hemiarthroplasty. A high percentage of femoral neck resections were found to be inaccurate. Inaccurate resections associated with implanting Austin Moore prosthesis were either inadequate or excessive, whereas an inaccurate femoral neck resection for Thompson prosthesis was usually inadequate. This may contribute to complications such as pain, acetabular erosion and loosening. The performance of hip hemiarthroplasty diminishes with time and activity. Accurate femoral neck resection is essential to reduce the incidence of pain, acetabular erosion and loosening of the prosthesis.

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Peri prosthetic femur fracture’s management in octogenarians—What works?

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To study the outcome of peri prosthetic femur fracture management in Vancouver type B and C fractures in octogenarians.

Method: Nineteen patients with 20 per-prosthetic femur fractures of only Vancouver type B and type C were treated with either plate systems, long stem femoral prosthesis or with "Cannulock" revision hip surgery implants between January 1998 and December 2004. They were clinically and radiologically followed up till the end point—fracture union OR implant/fracture failure.

Vancouver type A fractures were excluded from the study due to the relative stability of the fracture around the prosthesis.

Outcome: Out of 10 cases of B1 type of fractures, two failed through loss of reduction and resultant delayed/non union requiring further surgical treatment. Both were treated with cable-plate system.

Out of four cases of B2 type of fractures, one failed once again due to failure of implants to hold.