



ANALYSIS OF FUNCTIONAL OUTCOME OF TOTAL HIP ARTHROPLASTY IN FRACTURE NECK OF FEMUR IN ELDERLY PATIENTS IN OUR INSTITUTION:

Orthopedics

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ABSTRACT

Introduction:

Fracture neck of femur is common in elderly patients following trivial fall. Various methods of treatment are available for the fracture, however Arthroplasty gives better functional outcome and allows early mobilization of the patient.

Aim of the study:

To Analyse the functional outcome of Total Hip Arthroplasty in fracture neck of femur in elderly patients in our institution.

Materials and methods:

We studied in series of 25 patients of Garden stage IV fracture neck of femur, who were treated by Total Hip Replacement in our institution, Govt Villupuram Medical College Hospital, Villupuram, from June 2016 To November 2017. Out of 25 hips, 22 were treated with Uncemented Total Hip Replacement and 3 hips undergone Cemented Total Hip Replacement. 13 hips were approached through Hardinge lateral approach and 12 hips approached through posterior approach.

Results:

In our series 21 patients had functional outcome with excellent results and four patients had good to fair results. One patient had dislocation and another patient had foot drop postoperatively as complication in our series.

Conclusion:

In our study results were excellent to good in majority of cases with total hip replacement for displaced fracture neck of femur in elderly active ambulatory patient. Total hip replacement provides early ambulation, less pain, less revision rate.

KEYWORDS

Femoral Neck Fracture, Total Hip Replacement, Harris Hip Score, Cemented, Uncemented

INTRODUCTION:

Fractures of the neck of the femur occur predominantly in the elderly, typically result from low-energy falls, and may be associated with osteoporosis. Fractures of the femoral neck in the young are a very different injury and are treated in very different ways. Femoral neck fractures in young patients typically are the result of a high-energy mechanism, and associated injuries are common. Most fractures of the femoral neck are intracapsular and may compromise the tenuous blood supply to the femoral head. The Garden classification is the most commonly used classification system and is based on the degree of displacement:

- Stage I: incomplete fracture line (valgus impacted)
- Stage II: complete fracture line; nondisplaced
- Stage III: complete fracture line; partially displaced
- Stage IV: complete fracture line; completely displaced

The Pauwels classification was initially described in 1935. The fracture line in reference to the horizontal, Pauwels type I fracture is between 0 and 30 degrees, type II is between 30 and 50 degrees, and type III is more than 50 degrees. This classification is relevant because optimal treatment probably varies with the Pauwels angle.

Aim of the study:

To Analyse the functional outcome of Total Hip Arthroplasty in fracture neck of femur in elderly patients.

Materials and methods:

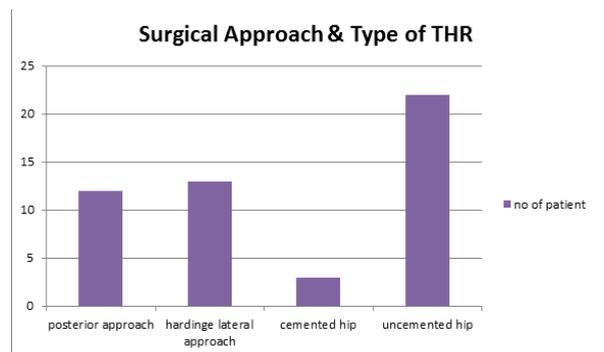
We studied in series of 25 patients of Garden stage IV fracture neck of femur, who were treated by total hip replacement in our institution, Govt Villupuram Medical College Hospital, Villupuram. Study was conducted from June 2016 To November 2017.

Study design:

The study is prospective study.

Age distribution:

All patients were above 60 years of age, ranging from 60 to 70 years with an average of 63.8 years.



Associated Problems:

Proximal tibia fracture opposite side	1 patient
Other side hip AMP prosthesis	1 patient

PROCEDURE:

After preoperative assessment, all patients were done under Spinal Anaesthesia. Out of 25 hips, 22 were treated with Uncemented Total Hip Replacement and 3 hips undergone Cemented Total Hip Replacement. 13 hips were approached through Hardinge Lateral Approach and 12 hips through Posterior Approach.

POST OPPROTOCOL:

The patients were nursed in post operative ward with the hip positioned in approximately 15 degrees of abduction using abduction pillow in the immediate post operative period. Bed exercises and limited mobilization was started on the first post operative day. Deep breathing, quadriceps and gluteal isometrics and gentle rotation exercises were begun. Drains were removed between 24 and 48 hours after surgery. Antibiotics were given parenterally for first 5 days and then orally for next 5 days. Suture removal was done between 10 and 12 days postoperatively.

For uncemented THR ,the patients were allowed protected weight-bearing for approximately 12 weeks. This includes a six weeks on a pair of crutches or walker and another six weeks on either one crutch or one cane For cemented THR in the post operative period weight bearing was allowed from next day itself. We have not administered any thrombo-prophylaxis regimen to all the patients. None of them developed any DVT complication.

FOLLOW UP:

The patients were reviewed regularly at 1 month interval for first 3 months, then at 6 months, 1 year and periodically thereafter for every 6 months. At the end of this study the patients were called back for review. Patients were reassessed clinically using the Harris hip score. X-rays of the hip were taken and looked for signs of loosening, migration, wear and implant failure.

The duration of follow up at the end of this study ranged from 3 to 18 months with an average of 10.3 months.

RESULTS:

Harris hip score:

Score	No of patients	Percentage
Excellent	21	84%
Good	3	12%
Fair	1	4%
Poor	0	0%

COMPLICATIONS:

One patient had a fall in her home in third week and came to us with dislocated hip. We reduced it under general anaesthesia and kept her under abduction spica for 6 weeks. After that slowly weight bearing started. One patient had foot drop postoperatively, which was recovered after 5 months. One patient had associated opposite side grade III proximal tibia fracture treated with Ilizarov. One patient was previously operated for fracture neck of femur with Austin Moore hemiarthroplasty.

The functional evaluation was measured by Harris Hip Score. Harris hip score at the end of our study ranges from 75 -98, with the average score of 92.

Case 1- illustration:



Case 2-illustration:



DISCUSSION:

Most authors would agree that the goals of treatment of any displaced fracture neck of femur in elderly person is to give them single surgery and early mobilization[1,2]. However the cost of implant ,life expectancy of the patient and comorbid conditions and associated other fractures varies the functional outcome of the patient.

The decision to proceed with fixation or arthroplasty depends on fracture characteristics and physiological patient age[4,6]. Displaced femoral neck fractures[5] in younger patients (<65 years of age) should be treated with anatomical reduction and stable internal fixation. Displaced femoral neck fractures in older patients should be treated with arthroplasty[3]. A high quality meta-analysis that included nine randomized trials showed that arthroplasty substantially reduced the risk of revision surgery compared with internal fixation in the treatment of displaced femoral neck fractures in patients aged 65 years

or older. Arthroplasty, however, was associated with greater blood loss, longer operative time, and more frequent infections. Hudson et al. found a higher rate of reoperation after internal fixation than after hemiarthroplasty in patients older than 80 years but did not find a difference in reoperation rates in patients between 65 and 80 years of age[11,12].

Kofoed, Injury, 1983 studied 106 consecutive patients who underwent unipolar hemiarthroplasty, 37% of the 71 patients followed up at 2 years needed or had undergone THA, of those who were living independently, 55% required THA because of the development of pain[7].

In a randomized trial, Rogmark et al. compared internal fixation and arthroplasty for treatment of displaced femoral neck fractures in ambulatory patients aged 70 years or older. Failure, defined as early fracture displacement, nonunion, osteonecrosis with collapse, or infection, occurred in 43% of patients treated with internal fixation and in 6% of those treated with arthroplasty at 2 years. A more recent follow-up study of the same cohort of patients at 10 years revealed that these results were stable over time: at no point in time did patients with successful internal fixation display better outcomes in regard to hip pain or mobility than did patients with successful arthroplasty[8,9,10]. A meta-analysis (Bhandari, JBJS, 2003)[5] - rates of osteonecrosis and nonunion in hip fractures treated with fixation as high as 20% and 30%, respectively. The relative risk of revision surgery after arthroplasty was lower compared with the risk after internal fixation (RR=0.23, p= 0.0003).

More recent studies[5], however, have identified several potential benefits of total hip arthroplasty over hemiarthroplasty, including superior functional outcome scores, decreased pain, improved ambulation, and lower reoperation rates. A disadvantage of total hip arthroplasty appears to be a slightly higher dislocation rate. In community ambulators with a longer than 5-year life expectancy, total hip arthroplasty may be the better choice.

CONCLUSION:

In our study results were encouraging with Total Hip Replacement for displaced fracture neck of femur in elderly active ambulatory patients. This surgery provides early ambulation, immediate weight bearing, less pain, less revision rate and finally earliest society participation to all patients. We have avoided all complications related to long term immobilization.

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