



**FUNCTIONAL OUTCOME OF TOTAL HIP REPLACEMENT IN FRACTURE NECK OF FEMUR IN ELDERLY PATIENTS**

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**ABSTRACT**

**Background:** 'FRACTURE NECK OF FEMUR' is one of the most common fractures encountered in our orthopaedic practice. Even though various modalities of surgical management are available for fracture neck of femur, due to osteoporosis and poor bone quality in elderly people total hip replacement serves better results. **Surgical technique:** This study describes total hip replacement using both cemented and uncemented prosthesis. **Methods:** We performed primary total hip replacement for 23 cases of displaced femoral neck fractures. The outcomes were assessed with help of modified Harris hip score and radiographs. **Results:** All operated patients were mobile independently and enjoying unrestricted activity. Excellent results were obtained in 31 %, good results in 65% and fair results in 4%. None of the patients had a poor result. 91% of the patients were pain free and independently mobile at the last follow up. **Conclusion:** Total hip replacement shows good to excellent results in fracture neck of femur in elderly patients, reduces complications and should be considered as an alternative method for treatment of fracture neck of femur in elderly patients.

**.Keywords:** Hip placement, Femur

**1.INTRODUCTION**

'FRACTURE NECK OF FEMUR' is one of the most common fractures encountered in our orthopaedic practice. There are various modes of surgical management available for fracture neck of femur. Due to osteoporosis and poor bone quality in elderly people total hip replacement serves better results. Elderly people are highly prone for these fractures due to osteoporosis, postural imbalance, poor eye sight, poor general conditions, unsafe surroundings etc. Any simple fall and direct blow results in neck of femur fracture. Many people become bed ridden due to poor or improper selection of surgical management. Following surgery additional factors such as systemic illness and improper mobilisation make the patients handicapped. This leads to

bed sores, infections, deep vein thrombosis etc., Numerous implant failures and resurgeries are encountered. Fracture neck of femur has always been a great challenge to the orthopaedic surgeon and still remains the unsolved mystery as far as the treatment and its results are concerned. It was decided as a protocol to use primary total hip replacement in active elderly patients of age 60 years and above who had a fracture of the femoral neck. The surgery was performed in Rajah Muthiah Medical College Hospital Chidambaram. The outcome of primary total hip replacement done in 23 such cases has been evaluated and results are presented..

**Aim of the study**

To evaluate the functional outcome of total hip replacement for displaced neck of femur fractures in elderly patients.

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## 2.MATERIALS AND METHODS

Twenty three patients with fracture neck of femur treated by total hip replacement from July 2013 to October 2015 at Rajah Muthiah Medical College Hospital, Chidambaram with regular follow up.

### Inclusion Criteria

1. Elderly patients.
2. Osteoporosis.
3. Patients who are liable for complications of recumbency.

### Exclusion Criteria

1. Younger patients.
2. Patient suitable for internal fixation.

### Data Collection and Pre-Operative Planning

Detailed clinical and radiological examination with routine investigations like Complete blood counts, Blood urea, Blood sugar, Electrolytes , Urine routine, ECG were carried out in all patients.

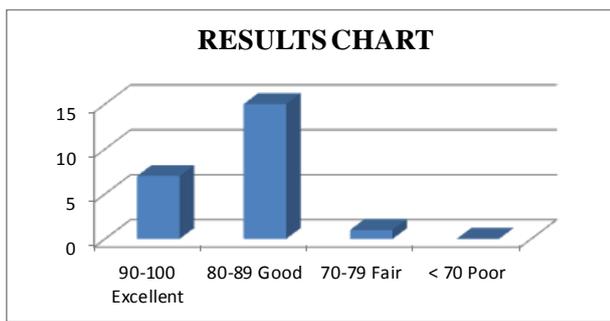
Special investigations like ESR, thyroid function test (TFT), Bence Jones Proteins, electrophoresis, PT, APTT, Echocardiography and others were carried out whenever indicated.

### Procedure:

For 19 patients posterior (Moore's Approach) was used and for 4 cases Lateral Hardinge's Approach was used in our series.18 patients underwent cemented and 5 patients uncemented total hip replacement.

## 3.RESULTS:

Clinical results were evaluated according to Harris hip scoring system. Excellent results were seen in 7 patients, good results in 15 patients and fair results in 1 patient. No poor results were seen. Average Harris hip score was found to be 90.08(78-99).

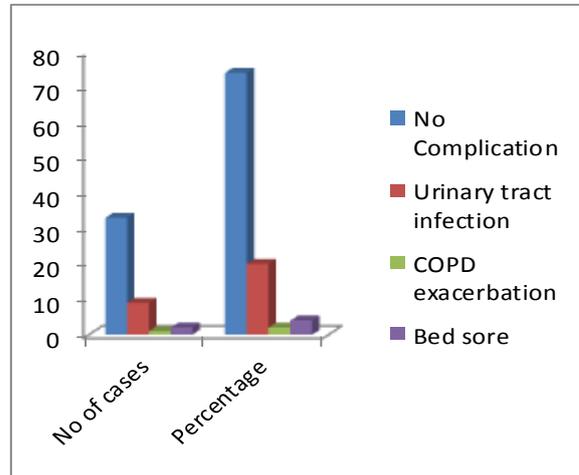


Score	No. of Patients	Percentage
90-100 Excellent	7	31%
80-89 Good	15	65%
70-79 Fair	1	4%
< 70 Poor	0	0%

### Complications A. General

Complications	No. of cases	Percentage
No complication	17	74
Urinary tract infections	5	22
COPD exacerbation	1	4.3
Bed sores	1	4.3

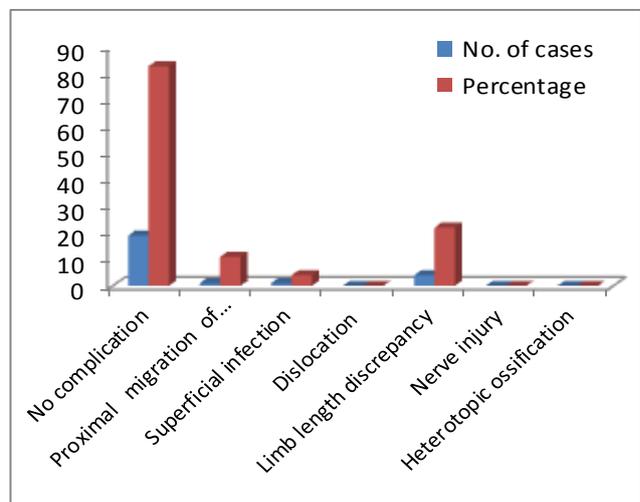
### COMPLICATION CHART



### B. Local

Complications	No. of cases	Percentage
No complication	19	83%
Proximal migration of trochantric sliver	1	4.3%
Superficial infection	1	4.3%
Dislocation	0	0%
Limb length discrepancy	4	17%
Nerve injury	0	0%
Heterotopic ossification	0	0%

### COMPLICATION CHART



**CLINICAL PICTURES**  
**Pre operative**



**Post operative**



## 4.DISCUSSION

Total hip arthroplasty was performed as a primary procedure for fracture neck of the femur in selected 23 elderly patients. Patients were in the age group of 60-75 years with mean age of 64.6 at the time of surgery. There were 9 males and 14 females at a ratio of 2:3. Patients were followed up and evaluated clinically and radiologically.

In our study, the follow up period ranged from 2 weeks to 1 year with a mean duration of 7 months. All patients were alive at the last follow up. Coates and Armour had reported a mortality of 29%, of which 7% were known to have died in the first month mainly due to medical complications like ischemic heart disease, pulmonary embolism and septicemia complicating wound infection. Mortality reported was significantly reduced, 10% at 6 months in Delamarter and Moreland study (1987). This is due to advances in anaesthesia, critical care medicine and improvement in medical facilities.

Average delay between admission and operations was 3.1 days. This delay was unavoidable as many patients had associated medical condition which required evaluation and stabilization before surgery. In older patients, stability of secondary conditions (cardiac, renal, pulmonary) must take precedence over treatment of a femoral neck fracture, so that mortality can be decreased.

The posterior Southern Moore's approach was used in 19 patients and lateral Hardinge's approach in 4 patients. No subsidence or migration of the femoral or acetabular components was seen in our study. There was no change in the orientation of the femoral or acetabular components till last follow up.

Medical complications like UTI was seen in 5 patients and bedsores were seen in 1 patient in our study which is similar to that reported by other authors like Coates and Armour (30%).

Coates and Armour reported that 52% patients walked with the aid of a stick after operation. Delamarter Mooreland reported 36% patients required some support. In our study around 30% of the patients were using walking aids, most of them a cane, in the opposite hand. On direct questioning many of them actually used the cane occasionally, outside their home more so as a safety measure.

None of the patients in our study had complications of immobilization like deep vein thrombosis, pneumonia or atelectasis. Only one patient developed grade II bed sores which healed on mobilisation.

In our study we encouraged early weight bearing following THR which was the main reason for the significant reduction in these medical complications. There was no heterotrophic ossification and neurovascular deficits in our study.

A literature review showed about 10-12% dislocation rate in primary THA done for fracture neck of the femur, which is one of the reasons preventing orthopaedic surgeons

worldwide to go for a primary THA in this fracture. None of the patients in our series had a dislocation. We attribute this to clean and minimal soft tissue dissection, maintenance of proper soft tissue tension, proper neck length and adequate closure of capsule and soft tissues after prosthesis implantation. The rate of dislocation reported in various series was Coates and Armour 8%, Sim and Stauffer 10.7%, Cartlidge 14.6%, Taine and Armour 12.3%, Dorr et al 18% and Greenough and Jones 8%.

Proximal migration of trochanteric slip was seen in one patient. This patient scored fair in the clinical rating and had a poor abduction mechanism as was evident by a positive Trendelenberg test. This case was managed by maintaining the limb in wide abduction and by abductor strengthening exercise.

An average of 1.1 cm of post operative shortening was found in 4 cases but was not significant and most of the patients were comfortable without a shoe raise. 2 patients complained of pain but none of them required analgesics. Limp was seen in 5 patients which was not significant. 7 patients (30%) were using walking aids occasionally with most of them using single cane. 4 patients were able to walk unlimited distance. 15 patients were able to walk a distance of 6 blocks. 4 patients were able to walk the distance of 2 to 3 blocks. 9 patients were able to sit comfortably on an ordinary chair for 1 hour. 14 patients were able to sit on a high chair for 30 minutes. 7 patients used public transport. There was no deformity post operatively in any of the patients in our study.

At the end of the study there was average flexion of 88.2(80-90), abduction of 28.2 (20-30), adduction of 19.6(15-25), internal rotation of 13.4(5-15) and external rotation of 30.7(20-40).

## CONCLUSION

Our study was aimed at assessing the clinical as well as radiological results of primary total hip arthroplasty done for fracture neck of the femur in elderly patients. Our study was compared with other published studies. Excellent results were obtained in 31%, good results in 65% and fair results in 4%. None of the patients had a poor result. 91% of the patients were pain free and independently mobile at the last follow up. All patients were mobile independently and enjoying unrestricted activity post operatively. Dislocation did not occur in any patient which is a major objection worldwide for doing primary total hip arthroplasty in fracture neck of femur. Therefore we consider primary THA to be a viable option for treatment in a selected group of previously independently mobile patients.

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