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Study Of Evaluation Of Use Of Cemented Bipolar Hemiarthroplasty In Unstable Intertrochanteric Fractures In Elderly.

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ABSTRACT

Intertrochanteric or pertrochanteric fractures are those occurring in the region extending from the extracapsular basilar neck region to the region along the lesser trochanter. This was a prospective type of study conducted for three years in which 30 elderly patients with osteoporotic unstable Intertrochanteric femur fracture were treated by primary cemented bipolar prosthesis. Two out of thirty patients (6.67%) developed superficial infection with serous discharge from operative site within 5 days of operation, these patients responded to conservative treatment of intra venous antibiotics as per pus culture sensitive report. one patient (3.33%) developed deep infection, who was debrided thoroughly in operation theatre and was given iv antibiotics as per culture sensitive report. In our study of primary cemented bipolar hemiarthroplasty for unstable osteoporotic intertrochanteric fractures in elderly population we conclude that It is one of the better modalities of treatment with excellent functional outcome in unstable osteoporotic intertrochanteric femur fractures.

Keywords: Cemented Bipolar Hemiarthroplasty, intertrochanteric Fractures, fracture, osteoporotic intertrochanteric femur fractures

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INTRODUCTION

Intertrochanteric or pertrochanteric fractures are those occurring in the region extending from the extracapsular basilar neck region to the region along the lesser trochanter [1]. Intertrochanteric femur fractures are one of the most common form of injury encountered amongst the elderly population, which comes as challenge for orthopaedic surgeons to manage as they are major cause of mortality and morbidity in elderly population due to the posteromedial void [2,3].

Incidence of these fractures has increased primarily due osteoporosis which in rural population is due to generalised debility secondary to poor nutrition while in urban population its due to sedentary life style leading to poor bone quality [4]. In elderly population Intertrochanteric femur fractures are mostly due to self fall [5], while in younger population Intertrochanteric fractures occurs due to high velocity trauma. There were an estimated 1.66 million hip fractures worldwide in 1990. This worldwide annual number is rising rapidly with an expected incidence of 6.26 million by the year 2050 [6,7].

MATERIAL AND METHODS

This was a prospective type of study conducted for three years in which 30 elderly patient with osteoporotic unstable Intertrochanteric femur fracture were treated by primary cemented bipolar prosthesis.

Inclusion Criteria

- Patient with age group >65 years of either sexes.
- Elderly patient with non united unstable Intertrochanteric fractures.
- Patients with Interochanteric fracture treated by internal fixation which has gone for failure.

Exclusion Criteria

- Polytrauma patients.
- Patients <65yrs of age.
- Compound Intertrochanteric fractures.
- Fractures due to malignancy.
- Patients who were unfit for anaesthesia.

The detailed history was taken in form chief complaints, onset ,duration and progress of the complaints. Past history related to any medical illness like diabetes mellitus, asthma , heart disease or any other surgical treatment was also asked and noted.

RESULTS

Table 1: Fracture Classification (Evan's)

Fractures Types	No. of patients	Percentage
Evan's Type 1 C	19	63.33%
Evan's Type 1 D	11	36.67%
Total	30	100.00%

Table 2: External Rotation

External Rotation	No. of patients	Percentage
<20 Degree	4	13.33%
20-40 Degree	1	3.33%
> 40 Degree	0	0.00%
None	25	83.33%
Total	30	100.00%

Table 3: Day of weight bearing

Post op Day	No. of patients	Percentage
2nd Day	3	10.00%
3rd Day	17	56.67%
4th Day	6	20.00%
5th Day	2	6.67%
> 5 day	2	7%
Total	30	100.00%

Table 4: Functional outcome according to Harris Hip Score

	6 Weeks	3 Months	6 Months
Excellent	5	8	10
Good	12	15	17
Faire	9	7	3
Poor	4	0	0
Total	30	30	30

DISCUSSION

Intertrochanteric femur fractures are one of the major cause of mortality and morbidity in elderly population caused due to osteoporosis which in rural population is mainly due to generalised debility secondary to poor nutrition while in urban population its due to sedentary life style. Intertrochanteric femur fracture is more common in females as compared to males due to post menopausal osteoporosis [8, 9]. Operative interventions with fixation of all the fragment with intra medullary nails reduces the mortality but the effects on morbidity are less as patients are not allowed to bear weight after fracture fixation because of chances of implant failure and poor bone quality [10].

Cemented bipolar hemiarthroplasty in unstable osteoporotic intertrochanteric femur fracture provide stable fixation with immediate post operative mobilization and weight bearing reducing the morbidity and complications related to old age and prolonged immobilisation. In our study of 30 cases of unstable intertrochanteric fracture mean age was 72.66 years with standard deviation of 5.86 years, youngest patient was of 65 years and eldest was of 86 years. Following are the comparisons of age distribution with other study.

In our study 18 patients (60%) were male and 12 patients (40%) were female with male to female ratio of 1.5:1. In 16(53.33%) patients had right sided Intertrochanteric fracture while 14 patients (46.6%) had left sided fractures. Evan's classification of Intertrochanteric fractures was used in our study, 19(63.33%) patients were categorised as Type 1c while 11(36.67%) patients had Evan's type 1d fracture. Mode of injury in majority of patients was trivial trauma amounting to 86.6% while 4 (13.33%) patients had Intertrochanteric femur fracture after road traffic accident.

15 Patients (50%) had to be given blood transfusion pre operatively while only 8 (26.67%) patients required transfusion post operatively. All the transfusions were uneventful.

In all the cases as per the need lesser trochanter and greater trochanter were fixed with cerclage wiring and calcar was made out of extracted head and fixed over postero medial weight bearing part with bone cement. Two out of thirty patients (6.67%) developed superficial infection with serous discharge from operative site within 5 days of operation, these patients responded to conservative treatment of intra venous antibiotics as per pus culture sensitive report. one patients (3.33%) developed deep infection, who was debrided thoroughly in operation theatre and was given iv antibiotics as per culture sensitive report.

One of the operated patients (3.33%) had posterior dislocation of the hip on second post operative day, patients dislocated hip was reduced by closed reduction manoeuvre Thomas splint with fixed traction was applied.

Post operatively 6 patient (20%) had shortening of the operated limb which was less than 2cm, These patients did not had any problem during walking and were given heel raise if required. The operated limb was fixed in less than 20° of external rotation in four patients. There was no incidence of acetabular erosion and loosening of the prosthesis in our study till the follow-up of 9 months. Post operative weight bearing was started on third post operative days and patients were followed at 6 weeks, 3 month and 6 months. At the end of 6 month all the 30 patients walked without any support.

The functional results were graded according to Harris Hip Scoring System, where in, a score of more than 90 indicates excellent result, a score in between 80 and 90 indicates good results, a score in between 70 and 80 indicates fair results and a score below 70 is rated as poor [8]. In our study at end of 6 months, 10 patients had excellent results, 17 patients had good results, 3 patients had fair results. Green et al [9], in a series of 20 cases, performed bipolar hemiarthroplasty for elderly patients with unstable trochanteric fractures with a mean time to ambulation of 5.5 days, and a mean follow up of 13.2 months. Amongst the 20 cases, 7 patients had excellent results, 11 patients had good results, 7 patients had fair results, 5 patients had poor results and 3 patients died. They concluded that with technical considerations in mind head neck replacement hip arthroplasty for unstable Intertrochanteric fractures in forgetful, In elderly patients it was a suitable alternative to internal fixation because the prosthesis provided early full weight bearing and rapid rehabilitation.

CONCLUSION

In our study of primary cemented bipolar hemiarthroplasty for unstable osteoporotic intertrochanteric fractures in elderly population we conclude that It is one of the better modalities of treatment with excellent functional outcome in unstable osteoporotic intertrochanteric femur fractures. Primary cemented bipolar hemiarthroplasty gives painless, stable and mobile hip joint early in post operative period, It reduces the complication of long immobilization, prolonged rehabilitation, marked residual deformities.

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