

Management Of Intracapsular Fracture Neck Of Femur With Hemiarthroplasty Using Bipolar Prosthesis

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Abstract:

Introduction:

The lifetime risk of sustaining a neck of femur fracture is 9% for a female if age is 50 years but rises to 18% by the age 80 years. The figures for men are 3% and 10 % respectively.

As the life expectancy increases mean age of society shifts towards the senior category, the incidence of hip fractures will continue to rise.

The incidence of fracture neck of femur occurs in two different patient populations.

A very small group 3% are young patients subjected to high velocity trauma while the majority are elderly due to trivial fall.

Complications of nonunion, avascular necrosis warrants hemiarthroplasty by using Austin Moore or Thompson prosthesis or the more preferred Bipolar prosthesis.

Materials and methods

Study duration June 2019 to June 2020 patients admitted in GGH/GMC Guntur

Sample size 30

Males 14

Females 16

Results

All injuries were due to trivial falls.

Mean age was 61.5 years.

Maximum used size was 41mm of the prosthesis.

One patient developed post op surgical site infection.

Conclusion

Bipolar hemiarthroplasty gives satisfactory results

With early immobilization and good results it can be practiced for intracapsular fracture neck of femur in the elderly

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I. Introduction:

The neck of femur fracture is one of the common fractures in elderly. It has always been a challenge to the orthopaedic surgeons to manage these fractures. The prevalence of neck of femur fractures has increased with increased incidence of osteoporosis, poor vision in elderly, poor neuromuscular coordination, lifestyle changes, sedentary habits, improvement in life expectancy. The incidence is expected to double in the next twenty years, triple by 2050. The burden of neck of femur fractures and its sequelae continued to be on the rise. The treatment goal for these fractures is restoring of functions without morbidity. In 1974, bipolar prosthesis was introduced by Bateman which had a mobile head element and had additional head surface to allow movement within the acetabulum.

II. Materials And Methodology

During the period of June 2019 to June 2020, 30 patients who had sustained intracapsular fracture neck femur were treated using the bipolar prosthesis at Government general hospital Guntur

Inclusion criteria

Patients more than 50 years of age with fresh and old intracapsular fracture neck of femur

Exclusion criteria

Fracture neck of femur with fracture shaft of femur or Intertrochanteric fracture and Acetabular fracture

Preoperative preparation:

Under spinal anaesthesia, patient is positioned in a lateral position on unaffected side. Through scrubbing and draping done. By Moore's southern approach incision is made approximately 10cm distal to the posterior superior iliac spine and extended distally and laterally parallel to the fibres of gluteus maximus to the posterior margin of greater trochanter. The incision is directed distally 10-13 cms parallel with femoral shaft. The deep fascia is divided in line with the skin incision by blunt dissection of gluteus maximus fibres avoiding injury to superior gluteal vessels. The proximal fibres of gluteal maximus are retracted proximally exposing the greater trochanter. The distal fibres are retracted distally. The sciatic nerve is identified and retracted carefully. The short external rotators are identified and stay sutures applied and exposing the capsule, the hip joint is opened by T shaped incision over posterior capsule.

The thigh and knee are flexed to 90 degrees and internally rotated to dislocate the hip joint. The head is extracted using an extractor. The acetabular cavity is cleared of soft tissue remnants and ligamentum teres

Preparation of femur:

The neck of femur is cut using a sagittal saw retaining about 5-10 cm of calcar over lesser trochanter at an angle parallel to that of prosthesis shoulder

The femoral canal is reamed with the entry point being more lateral so as to avoid varus position. The rasp should be positioned in the femoral canal with 5-10 degrees of anteversion while reaming. The correct size of prosthesis as determined by measuring the extracted head with measuring gauge is taken. The stem of the prosthesis is placed in the proximal femur impacted with 5-10 degrees of anteversion till the collar is flush with calcar and reduced by traction and reduced by traction, external rotation of the thigh and gentle manipulation of the head of the prosthesis into the acetabulum. Stability is verified by checking movement of hip in different directions

CASE 1



PRE OP

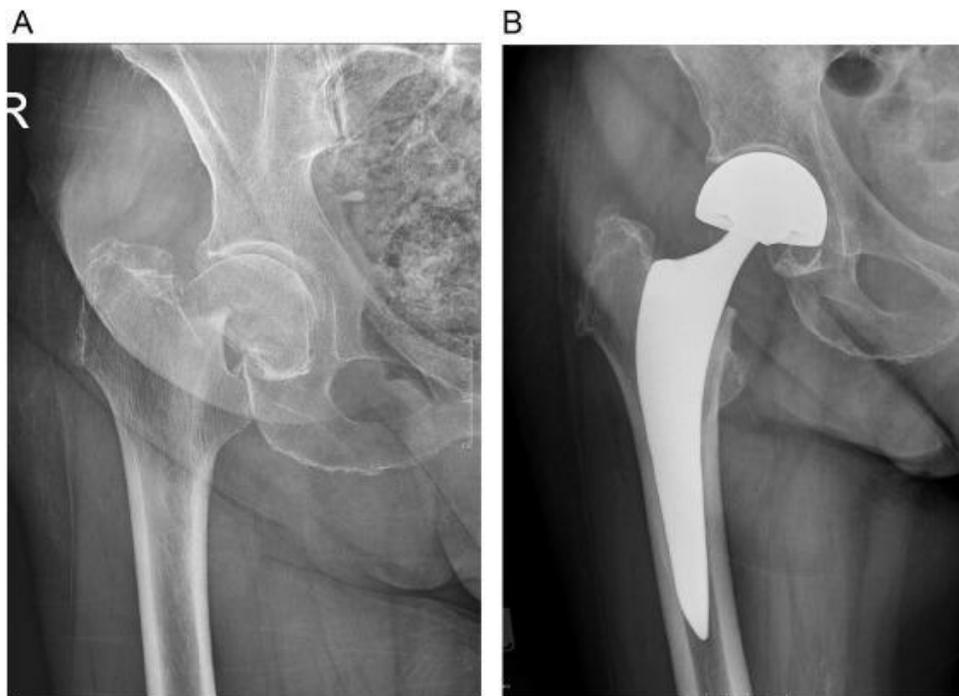


INTRA OP



POST OP

CASE 2



III. Discussion:

Intracapsular fracture neck femur are relatively common injuries among the elderly individuals. These fractures associated with geriatric problems make it a terminal event in the lives of elderly individuals. In order to reduce the morbidity and mortality, the aim of management should be towards making the patient mobile at an early date. Hemiarthroplasty is advocated as the best mortality of management of these fractures.

The Austin-Moore endoprosthesis has been widely used in the treatment of these fractures of femoral neck. However, anterior thigh pain and acetabular protrusion are complications of the use of this prosthesis.

In this present study of 2020, thirty cases of intracapsular fracture neck femur were surgically managed by bipolar endoprosthesis. The purpose of this study is to evaluate the outcome of the management of these fractures with bipolar endoprosthesis. The data collected in this study is assessed, analyzed and compared with other series and the results are evaluated.

AGE INCIDENCE:

In this study of 2020, the average age for intracapsular fracture neck femur was 60 years ranging from 50-85 years.

The average age incidences reported by other series are as follows:

Series	Year	Average age (yrs)
Launsten et al	1986	77.1
Giberty	1983	72.5
Lestrangle	1990	79.7
Shenwani et al	1999	64.0
Present study	2020	61.5

In this study, 50% of patients are in the age group 50-60 years. This indicates that the average of our samples is less in comparison to western studies.

GENDER INCIDENCE:

In the present study, 16 patients (53.33%) females and 14 patients (46.67%) were males. The female preponderance in our study is similar to the female preponderance observed by various other authors.

The sex incidence reported in other series are as follows

Series	Year	Female	Male
Giberty	1983	81.0	19.0
Launsten	1986	77.3	22.7
Lestrangle	1990	81.8	18.2
Sherwany	1999	60.0	40.0
Present study	2020	53.33	46.67

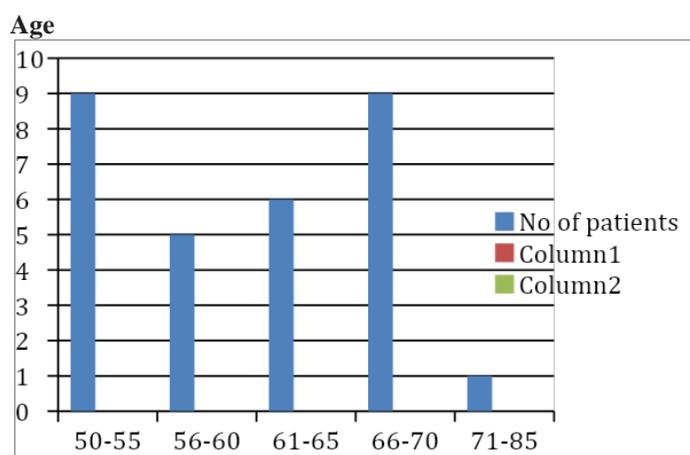
SIZE OF PROSTHESIS:

56.67% of our patients required prosthesis of size that varied between 41mm-45mm.

But the study of Langen (1979) had reported that the majority of patients required prosthesis between sizes 44mm-48mm.

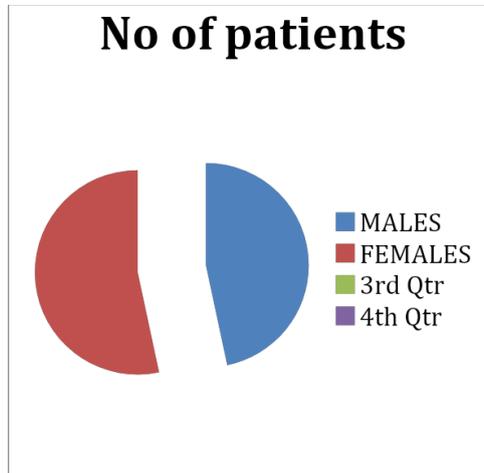
The difference in the sizes required by the two study groups compared may be partly due to racial differences in the build of patients.

In our study, the following demographics are observed:



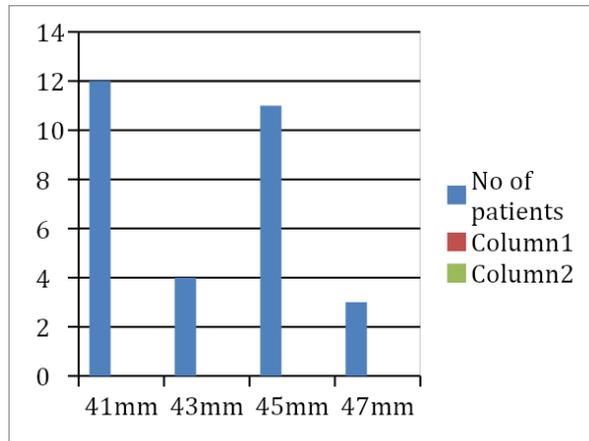
AGE GROUP	NO OF PATIENTS
50-55.	9
56-60	5
61-65.	6
66-70.	9
71-85.	1

GENDER
 Males 14
 Females 16



SIZE OF PROSTHESIS

41mm	12
43mm	4
45mm	11
47mm	03



Mean age was. 61.5 years
 All injuries were due to trivial fall
 Majority of the prosthesis size was 41-45 mm
 One patient developed superficial wound infection
 62 percent patient had associated comorbidity
 Mean mobilization of patients was at day 3

IV. Conclusion:

Bipolar hemiarthroplasty can be safely performed in elderly patients with satisfactory results
 Provided early mobilization good pain relief and minimal complications.