

**A comparative study between anterior and posterior approach for bipolar hemiarthroplasty in intracapsular fracture neck of femur.**

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**Conflicts of Interest:** Nil

**Abstract**

**Introduction:** Intracapsular fracture neck of femur constitute a major share of fractures in elderly (40%) Primary goal of treatment is to return the patient to his pre fracture functional state Prosthetic replacement is done as non-union & osteonecrosis is common in elderly. Allows immediate weight bearing & return to activity & avoid complications of recumbency and inactivity

**Aims and objectives**

The aim of the study was to compare the advantages and disadvantages of anterior and posterior approaches to bipolar hip hemiarthroplasty in the treatment of intracapsular fracture neck of femur.

**Materials and methods**

Prospective study Patients with intracapsular fracture neck of femur treated with bipolar hemiarthroplasty by anterior and posterior approach Aged > 65 years.

- Sample size - 20 patients (8 males & 12 females)
- Admitted in Osmania general hospital from May 2020 – May 2021
- Divided into two equal groups
- The patients are operated alternatively one with anterior approach and the second with posterior approach.
- Functional out comes compared using Harris hip score.
- Range of movements assessed clinically.

Table 1:

	Inclusion criteria	Exclusion criteria
1	Intracapsular n of fractures	Extracapsular n of fractures
2	Age > 65 years	Young patients
3	Closed fractures	Compound fractures
4	Unilateral	Bilateral or other associated

		fractures
5	No neuromuscular disorders	With neuromuscular disorders

**Investigations**

- X rays – pelvis with both hips ap
- X rays – pelvis with both hips ap with traction and internal rotation Major surgical profile

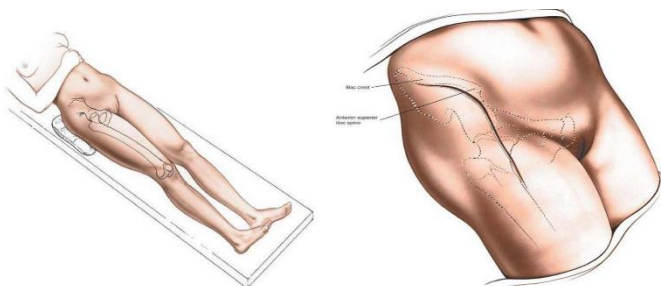
Figure 1: Instrumentation



**Surgical technique**

Anterior (smith-Peterson) approach Supine position Incision starts from anterior superior iliac spine, then runs vertically over shaft of femur Superficial internervous plane between Sartorius and tensor fasciae latae and deep plane between rectus femoris and gluteus Medius. Incise joint capsule and dislocate hip by external rotation.

Figure 2: Anterior approach



**Posterior approach**

Moore’s / southern approach Lateral position Curved incision centered over greater trochanter and continued distally along the shaft of femur No inter nervous plane Split gluteus maximus, detach short external rotators

close to insertion and reflect them along with sciatic nerve Divide upper part of quadratus femoris and incise posterior joint capsule and hip is dislocated by internal rotation.

Figure 3: Posterior approach

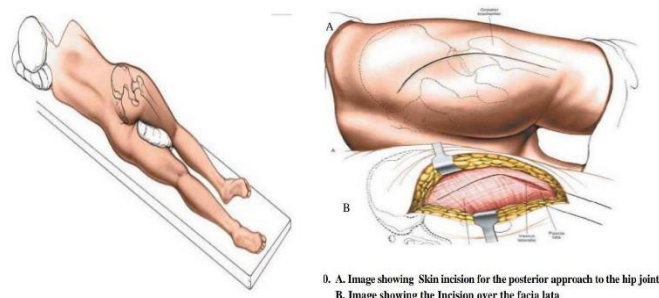


Figure 4: Intraoperative images – anterior approach

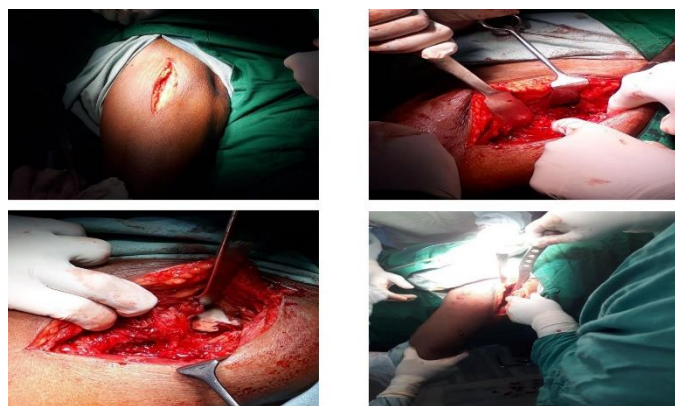


Figure 5: Radiographs – anterior approach



Figure 6: Clinical photographs



Figure 7: Intraoperative images - posterior approach



Figure 8: Radiographs – posterior approach



Figure 9: Clinical photographs



## Results

20 patients – 8 males and 12 females Mean operative time was more in posterior approach Intra operative blood loss was more in posterior approach No cases of post operative infection One case of hip dislocation noted in posterior approach patient on the 10 th post operative day No cases of abductor weakness No cases of sciatic nerve injury, periprosthetic fracture, deep vein thrombosis were noted Average Harris hip scores were almost equal between the Two groups.

## Discussion

Table 2:

Parameter	Anterior approach	Posterior approach
Mean operative time (min)	65	78
Intraoperative blood Loss (ml)	120	150
Infection rate (%)	0	0
Postoperative stay (days)	6	8
Postoperative wound care And personal hygiene	Easier	Little difficult
Excellent (>90)	2	2
Good (80-89)	4	4
Fair (70-79)	4	4
Poor (<69)	0	0

Table 3: Complications

Complication	Anterior approach	Posterior approach
Sciatic nerve injury	0	0
Hip dislocation	0	1
Abductor weakness	0	0
Periprosthetic fracture	0	0
Aseptic loosening	0	0
Deep vein thrombosis	0	0

### Anterior approach

- Less blood loss
- Lesser duration of surgery
- Lesser postoperative stay
- Lesser hip dislocation rate
- Postoperative wound care and personal hygiene are easier
- Special instrumentation and operating table

### Posterior approach

- More blood loss
- Longer duration
- More postoperative stay
- More hip dislocation rate
- Postoperative wound care and hygiene are little difficult.
- Regular instrumentation and operating table

### Conclusion

Anterior approach for hip hemiarthroplasty in elderly population with intracapsular femoral neck fractures provided significant benefit in early post operative period when compared to the posterior approach in terms of duration of surgery, intraoperative blood loss, time of recovery, post operative wound care and personal hygiene and hip dislocation rate. Even though it requires different instrumentation and acquaintance to the surgeon as it is relatively a less used approach.

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