



## Comparative Study between DHS with Derotation Screw and Cannulated Cancellous Screw in Management of Fracture Basicervical Neck of Femur in Adult

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### ABSTRACT

**Background :** Basal fracture neck of femur represents an intermediate form between femoral neck and intertrochanteric fractures these are more complicated in comparison to other type of proximal femur fractures. This study was described to compare the outcome of DHS with derotation screw and CC screw alone for the treatment of fracture of basicervical neck femur. **Aims and objective:** compare and evaluate the results the Functional Outcome of Basicervical neck femur Fractures treated with Dynamic Hip Screw (DHS) with derotation screw or cannulated cancellous screw alone

**Method and material:** prospective randomised study on patients with basicervical fracture of neck femur admitted in department of Orthopaedics, RNT Medical College & MBG Hospital during January 2013 to December 2014. 52 Patients were allotted in Dynamic Hip Screw (DHS) with derotation screw or CC screw alone 26 patient in each group on random number basis. follow up and evaluated clinico-radiologically and used Harris Hip Score for assessment of our results

**Result :** Radiological Union at fracture site About 50% patients showed at 12 weeks in DHS group while 73.33% of the patients in CC group showed at 14-16 weeks. Complications Out of 30 patients in both the groups 26 patients in group A & 20 patients in group B had no complications. 2 patients in group A & 4 patients in group B had screw backout. Screw penetration was seen in only 1 patient in group A & 2 patients in group B. None of the patient in group A had nonunion, while 3 patients in group B underwent nonunion. Osteonecrosis was seen in only 1 patient in both the groups

**Conclusion :** DHS with Derotation screw & CC screws alone fixation provides better outcome in the patient with healed fracture

### KEYWORDS

DHS, Derotation screw, basicervical fracture neck femur, Cannulated cancellous screw

### INTRODUCTION

Basal fracture neck of femur represents an intermediate form between femoral neck and intertrochanteric fractures these are more complicated in comparison to other type of proximal femur fractures. In these fractures, capsule gets entrapped between the fragments which make it difficult to achieve the close reduction. Hence open reduction and internal fixation is considered which may further increases the chances of avascular necrosis. Two principal options exists either any kind of Dynamic hip screw with derotation screw or CC screw alone. this study was described to compare the outcome of DHS with derotation screw and CC screw alone for the treatment of fracture of basicervical neck femur.

### AIMS AND OBJECTIVES OF STUDY

To compare and evaluate the results the Functional Outcome of Basicervical neck femur Fractures treated with Dynamic Hip Screw (DHS) with derotation screw or cannulated cancellous screw alone.

### MATERIALS AND METHODS

The study was a hospital based prospective randomised study on patients with basicervical fracture of neck femur admitted in department of Orthopaedics, RNT Medical College & MBG Hospital during January 2013 to December 2014. Patients were allotted in Dynamic Hip Screw (DHS) with derotation screw or CC screw alone group on random number basis. Inclusion Criteria are Closed basicervical fracture neck of femur and Patient giving informed consent for the study. Exclusion Criteria are Compound fractures Infections, unsuitable skin condition like blebs, burns, and bedsores, Inability to walk before fracture, High anaesthetic risk. Patients were the regularly followed up clinically as well as radiologically. operative tech-

nique are same as standard guideline for both type of procedure. Postop Initially antibiotics and analgesics are given round the clock parenterally. The patient allowed to sit in a chair and static quadriceps exercises begun the day after surgery. Radiographs and general condition of the patient assessed and if everything was fine the patient was discharged with advice to come after 2 weeks .

### Follow up protocol

Now the patient was called at monthly interval for follow up and evaluated clinico-radiologically If the fracture site showed evidence of union the patients was gradually allowed to sit at the corner of bed and to start knee bending exercises. Upto six months patient was followed at monthly interval .

**Assessment of results:** In radiological assessment we observed for union, avascular necrosis, coxa vara, absorption of neck of the femur, implant failure and osteo-arthritis changes. we adopted Harris Hip Score for assessment of our results. The results were graded as excellent, good, fair or poor according to points obtained.

### RESULT

Age & Sex incidence were in the age group mean age of 54.66 years for DHS with Derotation Screw group A and 51.33 years for Multiple Cannulated Cancellous Screw group B. In our series there were 19 male & 11 female patients in Group A and 20 male & 10 female patients in Group B. Side of fracture Right hip was more often fractured than the left hip. Most of the younger age patients having history of RTA and older patients mostly having history of fall. Delay in surgery both group operated within 1st week in both the group.

Duration of Surgery in CC group was low comparatively to the DHS group. Radiological Union at fracture site About 50% patients showed at 12 weeks in DHS group while 73.33% of the patients in CC group showed at 14-16 weeks. Complications Out of 30 patients in both the groups 26 patients in group A & 20 patients in group B had no complications. 2 patients in group A & 4 patients in group B had screw back-out. Screw penetration was seen in only 1 patient in group A & 2 patients in group B. None of the patient in group A had nonunion, while 3 patients in group B underwent nonunion. Osteonecrosis was seen in only 1 patient in both the groups

Harris Hip Score for Group A  
Table 1

Score	Frequency	%	Result
<69	4	13.3	Poor
70-79	11	36.6	Fair
80-89	7	23.3	Good
>90	8	26.6	Excellent
Total	30	100	-

Harris Hip Score for Group B  
Table 2

Score	Frequency	Percentage	Results
<69	5	16.66	Poor
70-79	13	43.33	Fair
80-89	8	26.66	Good
>90	4	13.33	Excellent
Total	30	100	-

Pre-op



Post op



followup 6 month



Figure 1( case 1 group A)



Figure 2( case1 )

Pre op



post op



**at 6 month****Figure 3 (case 2 group B)****DISCUSSION**

Patients were discharged after 7 days & follow up after 1, 4, 12 weeks, 6 month & at 1 year. functional results were analyzed by using Harris hip scoring system at six months. Age in our study in both the groups were between 50-70 years which is comparable to other studies conducted by Luo XP et al (1994), & Zhu QL et al, whom noted the mean age of the patients greater than 60 years of age in their studies. Sex Incidence is in this study most of the patient about 65% were males & 35% were females. Male preponderance is reported in few series: D'Acry and Devas (1976): 91.4%; Mukherjee and Puri et al (1986): 58.3%; Amte & Sanchetti et al (1987): 55%; Bavadekar and Manelkar et al (1987). Cause of male preponderance is could be due to more outdoor activities of males. Complications In our study there were few complication who were treated with DHS with Derotation Screw in comparison to treated by CC screw alone. In group A there were 2 superficial infection & 1 deep infection and in group B 2 superficial infection and no deep infection. In group A, 2 cases of screw backout with varus collapse were noted while 4 cases of screw backout were noted in group B. 1 case of screw penetration was noted in A group and 2 cases were noted in group B. 3 (10%) cases went to nonunion in CC group while none in the DHS group. Nonunion was probably due to improper implant fixation and early weight bearing in CC group. But it was still far less to some study. Out of 60 cases 2 cases developed Osteonecrosis one in each group.

Phemister first reported an incidence of osteonecrosis 10–20% in undisplaced fractures and 15 to 35% in displaced fracture. Ratliff (1968) reported a incidence of 42% (30 of 70 cases) while Allende-Lezama 25% (2 of 8 cases), Carrel and Carrel 35% (4 of 11 cases), Ingram and Bachinsky 55% (13 of 24 cases), Mc Dougal 58% (14 of 24 cases). KBL Lee 106 reported an incidence of 6%, EM Toh 11% (11 of 100 cases), Chen et al. reported an incidence of 67.57%.

Limping is a common consequence of internal fixation. It is mainly due to the alteration in the abductor mechanism due to the impaction of neck on weight bearing. Exact cause cannot be attributed to this.

**CONCLUSION**

Patients who were treated by DHS with Derotation screw discharged early than the CC screw group, so chances of bedridden complications has been decreased. DHS with Derotation screw & CC screws alone fixation provides better outcome in the patient with healed fracture

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