Internal Fixation Versus Hemiarthroplasty For Intracapsular Fracture Of The Femur

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Citation


Abstract

The goal of this article is to evaluate our practice. We assessed and compared the outcome for 2 groups (internal fixation vs. hemiarthroplasty (AM) and total hip replacement THR) with particular interest in the re-operation rate.

We conducted a retrospective study with 87 cases in total. 47 had cannulated screws and 40 had AM. We concluded that there is no significant difference between the two groups in regard to mobility, pain status and mortality rate. We found a higher re-operation rate in screws group, although similar to many other studies.

**INTRODUCTION**

- 3 choices of treatment are available for displaced intracapsular fracture, namely internal fixation, hemiarthroplasty (AM) and THR

- Standard recommendations are:
  - Age more than 70 yrs hemiarthroplasty
  - Age less than 70 yrs internal fixation
  - Moderate/sever OA THR
  - Immobile patient consider no treatment

**Figure 1**

![Figure 1](image1)

**Figure 2**

![Figure 2](image2)
AIM OF THE STUDY

1. To evaluate our practice.
2. Assess and compare the outcome for both groups. Particular interest in the re-operation rate.

PREVIOUS STUDIES

- A study by K. Ravikumar and G. Marsh shows no difference in the mortality rate between the three groups. One year revision rate of internal fixation group is 25%. Recommend THR in physiologically active patients.

- A study by Annti Alho and David Rietti in Norway (1980), the total cost of prosthetic replacement was found to be 1.6 times more expensive than the internal fixation.

TYPE OF THE STUDY

- Retrospective study.

- 87 case in total, 47 had cannulated screws and 40 had AM (May 98 - June 2000).

- Part of the information obtained from original data which have been collected regularly for The Scottish Hip Audit.

- 4 months F/U done by questionnaire filled by the mail or on the phone.

- Only displaced fractures of femoral neck were included.

- Both groups compared with regard to:
  ○ discharge destination.
  ○ Mortality.
  ○ Mobility.
  ○ Pain status.
  ○ Place of residence prior to fracture and at 4 months F/U.
  ○ Re-operation rate at 4 months and one year F/U.
Figure 6
General health in both groups, ASA grade %

<table>
<thead>
<tr>
<th>ASA grade</th>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>completely fit</td>
<td>19%</td>
<td>2.5%</td>
</tr>
<tr>
<td>some illness</td>
<td>27.6%</td>
<td>47.5%</td>
</tr>
<tr>
<td>symptomatic</td>
<td>46.8%</td>
<td>37%</td>
</tr>
<tr>
<td>unknown</td>
<td>6.3%</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Figure 7
Age & Sex difference between the two groups

<table>
<thead>
<tr>
<th></th>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>57-92 years</td>
<td>71-100 years</td>
</tr>
<tr>
<td>Mean age</td>
<td>79 years</td>
<td>85 years</td>
</tr>
<tr>
<td>Sex</td>
<td>M 25 %</td>
<td>12.5%</td>
</tr>
<tr>
<td></td>
<td>F 75 %</td>
<td>87.5%</td>
</tr>
</tbody>
</table>

Figure 8
Place of residence prior to fracture %

Figure 9
Discharge destination in both group %

Figure 10
Place of residence in both groups at 4 months F/U %

Figure 11
Walking status prior to fracture in both groups %
Internal Fixation Versus Hemiarthroplasty For Intracapsular Fracture Of The Femur

Figure 12
Walking status before the fracture and at 4/12 F/U in the screws group %

Figure 13
Walking status before the fracture and at 4/12 F/U in The AM group %

Figure 14
Mortality rate at 30 days

<table>
<thead>
<tr>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

Figure 15
Mortality rate at 4 month F/U

<table>
<thead>
<tr>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.6%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Figure 16
Pain status at 4 months F/U in both groups %

Figure 17
Re-operation rate at 4 months F/U in both groups %

<table>
<thead>
<tr>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.76%</td>
<td>0%</td>
</tr>
</tbody>
</table>

RE-OPERATION RATE AT 4 MONTHS
- The screws group shows higher figure (12.76%) compared to just (0%) for the AM group.
- In the screws group
  - 6 patients underwent major surgery (removal of screws & THR), one of them dislocated once.

Figure 18
Re-operation rate at one year in both groups %

<table>
<thead>
<tr>
<th>SCREWS GROUP</th>
<th>AM GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.27%</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

RE-OPERATION RATE AT 1 YEAR IN BOTH GROUPS
- Screws group:
  - further two pts underwent removal of screws and THR.
  - In addition, two pts underwent removal of screws (rate risen to 21.27%).
AM group:

- two pts underwent removal of prosthesis and THR.
- one patient sustained fracture shaft of femur around the prosthesis (ORIF)

REASONS OF RE-OPERATION

- Screws group:
  - Early mechanical failure. 4 cases [THR]
  - Pain
    - avascular necrosis. One case
    - screws protrusion
      - laterally 5 cases
      - to joint 1 case

1. AM group
2. screws group

CONCLUSION

1. AM group
2. screws group
3. pain 2 cases
4. fracture 1 case

There is no significant difference between the two groups in regard to mobility, pain status and mortality rate.

- Selecting criteria close to SIGN.
- Higher re-operation rate in screws group, although similar to many other studies.
- It is interesting to see the re-operation rate in this group with further F/U.

References
Author Information

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