

Retrospective study to assess the clinical and radiological outcomes of revision arthroplasty in fractured stems

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Introduction - Fracture of femoral stem is a rare complication due to modern manufacturing techniques and improved metallurgy.

It is still a challenging aspect in revision arthroplasty

Aim - To assess clinical and radiological outcomes of revision arthroplasty in fractured femoral stems

Methods

- Retrospective analysis of patients operated for revision hip arthroplasty for fractured stems between 2003 and 2018.
- Regular clinical and radiological follow up at 6 weeks, 3, 6, 12 months, every 3-5 years.
- Clinical outcome- Pellici et. al. (1982).
- Pre-operative Bone stock loss assessment- Paprosky classification (1990).
- Post-operative Cementing assessment- Barrack's criteria (1992).
- Radiographic follow up in cemented cases- Harris et. al. (1982).
- Radiographic follow up in un-cemented cases – Engh et.al. (1990).
- Survival end point- Re-revision due to any reason
 - Mechanical failure
 - Cemented- probable or definitive loosening
 - Un-cemented- Unstable fixation



Fracture stem revision with un-cemented KAR - 6 years follow up



Fracture stem revision with cemented C Stem - 5 years follow up



Fracture stem revised with cemented THR ,
Re-revision for Acetabular loosening after 9 years.



Revision stem fracture –
5 years follow up

Results

- Total number:52, Males:31 , Females-21, Mean age- 68 years
- Cemented: 31, Un-cemented: 21
- Mean follow up: 4.9 years
- Paprosky for bone stock: Type-1= 14, Type 2=26, Type 3A=8, Type 3B=4
- Barrack for cementing assessment: A-15, B-12, C- 4, D- 0
- 2 Re-revisions: Instability, Peri prosthetic fracture

Pellici et al	Pain	Activity	Number of patients
Excellent	No pain	No restriction	12
Good	Mild pain	Mild restriction	29
Fair	Moderate	Difficulty in daily activity	7
Poor	severe	Limiting mobility	4

Results

Engl et al	Score	Number of patients
Unstable	<-10	1
Stable but sub-optimum	-10 to <0	12
In-growth suspected	0 to +10	2
Bone ingrown	>+10	6

Harris et al		No of pts.
Stable	None of below criteria	16
Possible Loosening	Continuous lucent line cement mantle	12
Probable Loosening	Lucent zone 50-99% of cement interface	2
Definite Loosening	Stem migration, cement /stem fracture	1

Clinical survivorship: 98.02% after 3 years (95% confidence interval, 93.92% - 100%).
 Radiological survivorship - 95.20% at 3 years (95% CI, 88.34-100%).

Conclusion: This study showed good clinical and radiographic outcomes in patients with revision arthroplasty in our institute.