Replacement Arthroplasty versus Internal Fixation for Extracapsular Hip Fractures in Adults

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Introduction

Proximal Femoral Fractures

- Extracapsular fractures
  - Intertrochanteric fracture

- Intracapsular fractures
  - Head fracture, Neck fracture
Introduction

Classification

- Evans classification: stable, unstable
- AO/OTA classification:
Unstable Fracture

- Reverse obliquity fracture
- Subtrochanteric extension
- Involving the posteromedial butress
- Disruption of the lateral cortex
- Comminution
Introduction

Treatment of Unstable Fracture

- Cephalomedullary nail
- Dynamic condylar screw
- Blade plate
- Locking plate
- Prosthetic replacement
Introduction

Indications for Prosthetic Replacements

- Pathologic fracture
- Pre-existing OA hip
- Medical conditions associated with difficult healing (renal failure, chronic steroid use)
Why Prosthetic Replacements

- High failure rates (32%) of internal fixation
- Immediate postoperative weight-bearing
- Acceptable results of arthroplasty

Parker 2002
Objectives

Compare the relative effects (benefits and harms) of replacement arthroplasty versus internal fixation.
Methods

- Randomised controlled trials or Quasi-randomised trials
- Skeletally mature patients
Methods

Outcome measure

- Operative details
- Fracture fixation or mechanical complications
- Post-operative complications
- Hospital stay and treatment costs
- Anatomical restoration
- Final outcome measures
Results

Two randomised controlled trials:

- Kim et al: cementless long stem v.s. PFN (58 patients, 81.5y/o, 34.5 months)
- Stappaerts et al: cemented stem v.s. DHS (90 patients, 83y/o, 1 year)
Results

Operative details

- Length of surgery: Kim et al, arthroplasty
- Blood loss: Kim et al, arthroplasty
- Blood transfusion: arthroplasty
Results

- Most prevalent complications: dislocation, cut-out
- Reoperation rates, wound complications, post-operative complication, hospital stay: no significant differences
Results

Final Outcome Measures

- One year mortality: no difference
  - Kim et al: 3 years mortality → arthroplasty
- Harris Hip scores: no difference (Kim et al)
Discussion

- Unstable fracture, older than 70y/o
- Differences in the interventions
- Less cases
- Inadequate longer-term outcome
- Insufficient evidence
Conclusion

- Insufficient evidence
- Internal fixation more preferable
- Further larger well-designed study, and longer-term follow up