Arthroscopic Reduction and Internal Fixation (ARIF) in Hip Fracture-dislocation; Mean 4-year Follow-up
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Introduction

- Arthroscopic reduction and internal fixation has been recognized to play an important role in treatment for fracture-dislocation of hip joint.
- The purpose of this study was to analyze the mean 4-year outcomes of arthroscopic reduction and fixation (ARIF) in femoral head fractures with or without posterior wall fractures.
- We found that the early outcomes from arthroscopic posterior wall fixation are encouraging and therefore hip arthroscopy may provide an alternative option in hip traumatology.

SURGICAL TECHNIQUE

Preoperative 3D CT

Arthroscopic view

Postoperative 3D CT image & AP X-ray

4 Years F/U

Patients and Methods

- Between 2010 and 2018, 27 patients underwent arthroscopic reduction & internal fixation (ARIF) for acetabular posterior wall fractures with or without femoral head involvement were analyzed.
- All patients available for review at a mean of 48 months (range, 24-70 months). Average age was 43 years (range, 27-63 years) at surgery.
- Arthroscopic fixation using cannulated screws (4.0 mm) or cortical screws (3.5 mm) with washers was performed in supine position for minimally displace fracture approaching peripheral compartment, or lateral position for markedly displaced one approaching deep gluteal space.
- Radiographs were assessed to establish fracture healing, joint space narrowing, and traumatic arthritis. Quality of life and hip function were assessed using modified Harris hip score (mHSS), UCLA activity level and patient-reported satisfaction scores (0-5 points).

Results

- Of the 27 patients, 17 underwent ARIF for posterior wall fracture of acetabulum, 8 for femoral head fractures, and 2 for both.
- In the early period, one hip revised open reduction and internal fixation due to low quality of reduction in arthroscopic surgery. Joint space narrowing was noted in 1 hip. It was a neglected diagnosis of acetabular posterior wall fracture at the other hospital (2 months after injury).
- Average hospital stay was 4 days (range, 3-10 days). There was no other complication such as iatrogenic nerve injury, heterotopic ossification, and intra-articular hardware.
- The patient-reported satisfaction score was 4.6 of 5.

CONCLUSIONS

- An arthroscopic reduction and internal fixation of acetabular posterior wall fracture with femoral head fracture results in shorter hospital stay, early joint motion at early postoperative period, thereby effectively treating in a minimally invasive manner.
- Early outcomes from arthroscopic posterior wall fixation are encouraging and therefore hip arthroscopy may provide an alternative option in hip traumatology.
- Arthroscopic reduction and internal fixation (ARIF) is surgeon-dependent and patient selection is critical.

*Surgical indications

(1) displaced, large femoral head fracture configuration
(2) severely limited range of motion and impingement signs following conservative treatment
(3) femoral head fracture associated with intraarticular lesions, such as loose bodies, labral tears, or ligamentum teres injury

*Contraindications

(1) Instability with recurrent dislocation following closed reduction
(2) Acetabular fractures with column fractures that can cause fluid extravasation during hip arthroscopy

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