Hip Arthroscopy for Sequelae of Legg-Calve-Perthes Disease

Deuk-Soo Hwang, M.D., Yoo-Sun Jeon, M.D.

This study has no financial relationships to disclose.
Introduction

- Legg-Calve-Perthes Disease
  - Avascular necrosis in growing femoral head
  - Progressive femoral head deformity & resultant deformity of acetabulum
  - Various intra-articular sequelae of early LCP in Adolescent or young adult

- Reports about hip arthroscopy in LCP:
  - Majowaki et al. J Pediatr Orthop. 2010

=> Diagnostic arthroscopy & small numbers of cases
Purpose

- LCP sequelae c hip pain & ROM limitation
- Arthroscopy may have a role in managing sequelae of LCP
Material & Methods

- 2002~2011
- 7 cases
- Age: avr. 25 years (19–35)
- FU: avr. 37.6 months (6–111)
- Stulberg classification
  - II: 2 cases
  - IV: 5 cases
- Tönnis classification: Below II
- Prospectively assessed with modified Harris hip score
  - Preop & postop 3, 6, 12, 24 month...

- Indication for arthroscopy
  - Initial evidence of symptomatic OCD lesion
  - Intractable mechanical symptom & sign
  - LOM
Results

<table>
<thead>
<tr>
<th>Arthroscopic finding</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteochondral dissecans</td>
<td>5</td>
</tr>
<tr>
<td>Labral tears</td>
<td>7</td>
</tr>
<tr>
<td>Ligament teres tear</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Arthroscopically,**
  - Loose bodies removal
  - Synovectomy
  - Osteophyte removal
  - Osteoplasty
  - Chondroplasty
  - Lig. teres debridemant, etc
Results

ROM

<table>
<thead>
<tr>
<th>Avr. ROM</th>
<th>Preop</th>
<th>Postop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flex</td>
<td>82.9</td>
<td>97.1</td>
</tr>
<tr>
<td>Abd</td>
<td>26.4</td>
<td>32.1</td>
</tr>
<tr>
<td>Add</td>
<td>13.6</td>
<td>18.6</td>
</tr>
<tr>
<td>ER</td>
<td>21.4</td>
<td>30.7</td>
</tr>
<tr>
<td>IR</td>
<td>12.1</td>
<td>25</td>
</tr>
</tbody>
</table>

Harris hip score

- Preop 53.4 -> Last FU 71.4

VAS

- Preop 6.4 -> Last FU 2.1
Complication

- No major complication
- Revision (1 case)
  - Primary op (2002)
    - OCD
      - Loose body removal
  - Revision (After 7 years)
    - Labral tear, chondral injury
      - Microfracture
      - Labrectomy
      - Femoroplasty
Case

- 20/M
- Professional Taekwondo
- Lt. hip pain
- P/Ex
  - Patrick test (+ +)
  - Impingement test (+ +)
  - LOM
    - Flex / Ext : 70 / 25
    - Abd / Add : 30 / 10
    - ER / IR : 23 / 13
Arthroscopic Tx

- Loose body removal
- Lig. teres shrinkage
- Osteophyte resection
- Microfracture
- **FU 6 month**
  - **VAS**: 6 → 2
  - **Harris hip Score**: 46 → 67
  - **ROM**

<table>
<thead>
<tr>
<th></th>
<th>Preop</th>
<th>Postop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flex</td>
<td>70</td>
<td>115</td>
</tr>
<tr>
<td>Ext</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Abd</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Add</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>ER</td>
<td>23</td>
<td>40</td>
</tr>
<tr>
<td>IR</td>
<td>13</td>
<td>25</td>
</tr>
</tbody>
</table>
Discussion

- **Intra-articular abnormalities (Pain)**
  - Tears of ligamentum teres
  - Osteochondritis dissecans
    - Loose body
  - Labral tears
  - Severe synovitis
  - Loose bodies
  - Cartilage defects

- **ROM limitation**
  - Bony spur
  - Deformity (Flattening) of femoral head
  - Femoroacetabular impingement
Conclusion

- In our study, favorable results with minimal complication

- Hip arthroscopic Tx
  - Palliative benefits although this could not alter the natural history of progression to OA

- Limitation
  - Short-term FU
  - Relatively small number of patients
  - No comparative study