Surgical technique of arthroscopic shelf acetabuloplasty combined with labral repair and cam osteochondroplasty for the patients with dysplasia of the hip.

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I have financial relationships with the following companies;

Consultant; Biomed,
Research Grant; Smith & Nephew,
Teijin
Background; Arthroscopy for Dysplasia

• DDH was in the past contraindication for hip arthroscopy.

• 85% of the patients reported improved pain and were able to return to sport and leisure activities after arthroscopic debridement. (McCarthy 1998 Orthopedic)

• The good results were seen with arthroscopic debridement of labrum in borderline DDH (20<CE<25). (Byrd 2003 Arthroscopy)

Background; Chiari and Shelf

• Detached acetabular labrum increased risk of clinical failure of Chiari pelvic osteotomy. [Nishina et al 1990. JBJS Br]

• In Labrectomy with Chiari osteotomy, 10 of the 20 hips showed progression of osteoarthritis. [Nakano, et al., 2008 Arch Orthop Trauma Surg]

• Shelf acetabuloplasty long-term clinical outcomes are influenced by the presence of labral tear. [Berton C et al., 2010]

Need to evaluate labral tear prior to osteotomy or acetabuloplasty.
To solve these problem

Concepts of New Endoscopic Technique

Acetabular Shallowness → Shelf Acetabuloplasty

Labral Tear → Labral Repair and/or reconstruction

Cam Impingement → Cam Osteochondroplasty
Step Wise Approach
Intra-articular procedure
1. Intra-articular evaluation
2. Labral fixation
3. Cam osteochondroplasty
4. Capsular Plication (3~4 Vicryls)
Switch scope to Extra-Capsular space
**Step Wise Approach**

**Extra-articular Procedure**

1. Two Guide Wires were placed through drill guide adjacent to capsule.
2. Osteotome along with guide wires to make the slot.
3. Free bone plate measuring 3.0cm X 2.5cm.
4. Inserted bone shelf into the slot.
5. Bone tips were packed.
Material and Methods

• From October 2011 to March 2012, 23 patients (24 hips) who underwent arthroscopic shelf acetabuloplasty, labral repair and cam osteochondroplasty for dysplasia of the hips were enrolled in this study.

• Six cases that had osteoarthritis (Tönnis > grade 2) and knee or lower extremities) were excluded.

• Function was assessed, before and after surgery, using Modified Harris Hip Score (MHHS) and Non-arthritis hip score (NAHS). Evaluation was performed at minimum 6 months after surgery.
Material and Methods

<table>
<thead>
<tr>
<th>Preoperative</th>
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<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>4 Male / 13 Female</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Mean 39.5±13 (range; 17-56)</td>
</tr>
<tr>
<td>Side</td>
</tr>
<tr>
<td>6 right / 11 left</td>
</tr>
<tr>
<td>CE angle</td>
</tr>
<tr>
<td>15.5±6.8</td>
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<tr>
<td>VCA angle</td>
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<tr>
<td>21.3±4.2</td>
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CE angle: Center-edge
VCA; Lequesne's vertical-center-anterior margin (VCA)
Results; functional evaluation

<table>
<thead>
<tr>
<th></th>
<th>Preope</th>
<th>At 6 Ms</th>
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<tbody>
<tr>
<td>MHHS</td>
<td>62.9</td>
<td>59.7</td>
</tr>
<tr>
<td>NAHS</td>
<td>80.3</td>
<td>81.3</td>
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MHHS; Modified Harris Hip Score
NAHS; Non Arthritis Hip Score

Student T-test
Conclusion

This arthroscopic procedure could address both intra-articular pathology and underlying mechanical problem.

This arthroscopic procedure is less invasive and could be beneficial treatment for the patients with dysplasia.


