Paper Session: Young Patients

Paper Presentations 32 - 36

Saturday, October 15, 2011 • 14:55 – 15:40pm

General Session
**Paper #: 32**  
*Arthroscopic Osteochondroplasty of the Hip without Extensive Capsular Release*

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**Summary:**
Arthroscopic osteochondroplasties were performed for 457 hips in 394 patients utilizing an anterior subcapsular approach without extensive release of the hip capsule to provide excellent visualization while minimizing the risks of fluid extravasation, capsular laxity and dislocation.

**Data:**
The arthroscopic treatment of femoroacetabular impingement has become a widely accepted modality. Most surgeons perform a wide capsular release to gain exposure of the femoral neck. However, this increases the chances for fluid extravasation and may require increased pump pressures to minimize bleeding. In addition, there is a risk of hip dislocation if the capsule release does not heal. This study describes the use of a subcapsular approach to the peripheral compartment that does not require a wide capsular release.

Beginning in 2002, arthroscopic osteochondroplasties were performed by creating a subcapsular peripheral compartment portal by sliding proximally along the anterior femoral neck. The central compartment was accessed with traction to address labral and chondral pathology. No traction was used for work in the peripheral compartment. The synovium was debrided and the capsule gently elevated with a radiofrequency probe until full visualization was achieved. Pump pressures were kept in the range of 20-30 mmHg.

There were 457 hip debridements in 394 patients, including 15 simultaneous bilateral and 48 staged bilateral procedures. There were no cases of catastrophic fluid extravasation. There was one infection treated successfully with antibiotics and no nerve injuries. One patient sustained an anterior dislocation one month after surgery after a traumatic hyperextension injury after slipping on a wet floor.

Restoration of a concave head-neck junction and normal offset was achieved in 449 of 457 hips (98.2%). Four hips in three patients were revised to remove additional bone from the femoral neck. All eight of the cases with inadequate debridement had occurred during the first year and reflected the learning curve of this novel procedure.

In summary, an anterior subcapsular approach for arthroscopic osteochondroplasty without extensive release of the hip capsule provides excellent visualization while minimizing the risks of fluid extravasation, capsular laxity and dislocation.

**Paper #: 33**  
*Clinical Outcomes Following Arthroscopic Management for Developmental Dysplasia of the Hip in Japanese Patients (Labral Repair, Osteochondroplasty)*

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**Summary:**
Arthroscopic labral repair for developmental dysplasia of the hip

**Data:**

**Background:**
Recent studies revealed that hip arthroscopic debridement of labrum could not be useful treatment for the patients with developmental dysplasia of the hip (DDH) since acetabular labrum is prerequisite for hip joint stabilization. There is a paucity of literature concerning arthroscopic labral repair and osteochondroplasty for patients with DDH. The purpose of this study was to evaluate the early clinical outcome following hip arthroscopy for DDH in hip joint.

**Subjects and Method:**
Between 3/2009 and 6/2010, 21 patients with DDH who underwent arthroscopy by single surgeon are enrolled in this study. One cases with bilateral and four cases
associated with osteoarthritis were excluded. Gender 4 males and 12 females Average Age 25.1+11 (range;12~45). In 12 of 16 patients, the onsets of pain were associated with sports activity.

At hip arthroscopy, 12 of 16 patients underwent labral repair and bump osteotomy for DDH combined with cam type impingement. Four patient underwent labral repair without osteochondroplasty. Average follow-up was obtained clinically and radiographically on 100% at minimum one year (average; 14 months range; 12~19).

Results:
Modified Harris hip score (MHHS) significantly improved from 57+20.4 (range;12~81.4) to 89.4+20.5 (range; 18.7~100). The overall evaluation was excellent in thirteen patients, but initial arthroscopy failed in three patients. Thirteen of the sixteen patients were free from hip pain, two had mild pain occasionally and one had severe pain consistently. In these three patients, Central-Edge (CE) angle are less than 15 degree and classification of cartilage delamination (MAHORN) are over grade III. One of three patients underwent second arthroscopy. We observed advanced arthritis in 2 patients and lateral migration in one patient.

Discussion and Conclusions:
These clinical outcomes suggest that arthroscopic labral repair and cam osteochondroplasty provide satisfactory outcome in overall patients but fair or poor results in the patients with CE angle less than 15 degree as well as severe cartilage delamination at the time of surgery. Assessing patients prudently for the presence of DDH is still important prior to hip arthroscopy. Further investigation should be necessary to develop arthroscopic strategy in the assessment and management of patients with DDH.
dysplastic. Time from onset of symptoms to surgery was 3.1 years (range 1 week to 10 years). At arthroscopy, 34 patients underwent labral repair and 4 underwent labral reconstruction. There were 3 isolated pincers lesions, 7 isolated cam lesions, and 28 combine FAI lesions. Ten patients required microfracture for chondral lesions. Seven (18%) had total hip replacement at an average of 2 years following arthroscopy. These patients had lower preoperative modified Harris hip score (54) compared to the other patients(62). One patient underwent a planned PAO following arthroscopy and 4 patients underwent subsequent arthroscopy for adhesions. At a mean followup of 30 months (range 24 months to 53 months) the modified Harris hip score improved from 62 preoperatively (range 23 to 94) to 81 at latest follow-up (range 35 to 100)(p=0.001). Median patient satisfaction was 9.0 (range 1 to 10). There was no association between outcome and age, gender, center edge angle (or dysplastic category), or time from onset to surgery.

Discussion and Conclusion:
Hip dysplasia can be a cause of significant disability. In this study, we showed that arthroscopic treatment of intra-articular hip pathology allowed patients with dysplasia and symptomatic hips to improve their function. This resulted in high patient satisfaction. Eighteen patients had total hip replacement following arthroscopy. More research is needed to determine the predictors of failure in this population.

**Paper #: 35**

**One-Year Results of a Novel Technique for Grafting Solitary Acetabular Defects**

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**Summary:**
An arthroscopic assisted technique has been developed to drill through subchondral acetabular roof cysts and perform antegrade grafting with synthetic bone plugs. Minimum, one-year clinical, radiological, histological and patient reported outcomes are for four cases. The mean non-arthritic hip score improved from 53.8 (range 43.8 to 70) pre-operatively to 84.6 (range 78.8 to 87.5).

**Data:**
The significance of chondral injuries and osteochondral defects (OCD) in early degenerate hip disease is a subject of great interest. These lesions have a limited capacity for intrinsic healing and their successful management remains challenging. Arthroscopic repair using microfracture, fibrin glue and abrasion chondroplasty has been attempted with variable success. We present the 1 year results of a novel arthroscopic-assisted technique to graft chondral defects and subchondral cysts of the acetabulum using a synthetic osteochondral plug. The osteochondral plug acts as a scaffold that provides structural support and promotes bone ingrowth and articular cartilage regeneration.

Four patients (3 women and 1 man), with a mean age of 48.6 years (range 31.6 to 63.3 years) and a mean body mass index of 27 were treated. All patients had groin pain, solitary cysts in the roof of the acetabulum and radiographic evidence of early osteoarthritis. Two patients also had cam-type femoro-acetabular impingement. Hip arthroscopy was undertaken in the lateral decubitus position, using the standard lateral & anterolateral portals. In preparation for grafting, the superficial chondral defect was debrided to stable margins and the underlying acetabular cyst was curretted. A pelvic tunnel was then prepared from the region of the iliac crest. In two cases, the pelvic tunnel was developed deep to iliacus, perforating the inner table of the ilium and emerging perpendicular to the lunate surface of the acetabulum. In one case, where the cyst was situated more peripherally, the tract was developed via the outer table of the ilium. In all cases, the bone plug was inserted in an ante-grade fashion and positioned flush with the lunate articular surface.

Patient outcome was assessed using clinical examination, the non-arthritic hip score (NAHS), computed tomography (CT) and magnetic resonance imaging (MRI). The mean non-arthritic hip score improved from 53.8 (range 43.8 to 70) pre-operatively to 84.6 (range 78.8 to 87.5). CT scans show increased bone
density around the graft tract and MRI demonstrates increased signal intensity in the graft substance. One patient underwent a re-look arthroscopy at 5 months to investigate groin and buttock pain. Capsular adhesions of the labrum were identified and released. A biopsy of the osteochondral plug demonstrated early new bone formation on histological analysis.

**Paper #: 36**

*Arthroscopic Removal of Juxtarticular and Intraarticular Osteoid Osteomas from the Hip Joint – The Introduction of Endoscopic Gamma-Probe*

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**Summary:**
Efficacy of arthroscopic removal of osteoid osteoma using endoscopic gamma-probe was proven in 4 patients with lesions on various locations in their hip joints.

**Data:**
Background:
Juxtarticular and intraarticular osteoid osteomas are rare but painful bone neoplasms which appear intracapsularly. Although benign they may severely affect joint function and may end in early degeneration of the involved joint due to secondary synovitis. Case reports of arthroscopic removal of the osteoid osteoma from the hip joint have been published in the recent literature. An accurate localization and complete removal of usually small lesion, either arthroscopic or open, is difficult resulting in high recurrence rate and reoperations.

Patients, Materials And Methods:
4 patients with juxtarticular or intraarticular osteoid osteomas of the hip joint were treated arthroscopically; 2 lesions were located in the peripheral compartment (both on the anteromedial side of the femoral neck) and 2 in the central compartment (1 on the femoral head, 1 in the acetabular roof). Intra-operative detection of the lesion was made by use of fluoroscopy, together with arthroscopic visualization and palpation. In 3 patients, endoscopic gamma-probe after injection of Technetium 99m was used additionally for localization and to control complete removal of the lesion. Synovectomy of the central and peripheral compartments was performed and lesions were removed in all cases. Samples of removed tissue were sent for patho-histologic analyses.

Results:
In 3 cases in which endoscopic gamma-probe was used, the average decline of the Technetium 99m count rate after lesion removal was 48%. Diagnoses were patho-histologically verified in 3 out of 4 cases. All patients experienced almost prompt complete symptomatic relief and restitution of function. Control imaging at the time of the last visit (3 years, 1.5 year, 6 months and 3 months) has shown no signs of recurrence and no postoperative complications were noted.

Conclusions:
Contemporary operative arthroscopy is a safe and reliable method for treatment of juxtarticular and intraarticular osteoid osteomas of the hip joint. According to our knowledge endoscopic gamma probe has been used during hip arthroscopy for the first time. It seems to be essential instrument to detect juxtarticular or intraarticular osteoid osteoma during arthroscopy and to control the entirety of its removal.