Paper Session: Extra-Articular Endoscopy

Paper Presentations 27 – 31

Saturday, October 15, 2011 • 9:55– 10:40am
General Session
**Paper #: 27**

*The Diagnostic Accuracy of Clinical Tests in Identifying Those with Deep Gluteal Nerve Entrapment*

Oklahoma Sports Science & Orthopaedics
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**Summary:**
For those with recalcitrant hip pain and symptoms consistent with DGS the Active Piriformis Test and Seated Piriformis Stretch can be used to help identify those with and without DGS.

**Data:**
Purpose/Hypothesis:
Entrapment of the sciatic nerve has been termed deep gluteal nerve syndrome (DGS) and treated arthroscopically. The objective of this study was to determine the diagnostic accuracy of the Lasegue’s Sign-Straight Leg Raise (SLR), Pace Sign-Active Piriformis Test, and Freiberg Sign-Seated Piriformis Stretch in those undergoing hip arthroscopy for suspected DGS.

Methods:
33 subjects (25 females, 8 male) were included in the study. Subjects had mean age of 43 years (range 15-64; SD 11 years) and mean symptom duration of 36 months (range 2-192; SD 41 months). Clinical records were retrospectively reviewed to identify those who underwent hip arthroscopy for recalcitrant hip pain and had symptoms suggestive of DGS. These symptoms included buttock pain, parasthesia, pain distal to the knee, and/or inability to sit greater than 30 minutes. All subjects underwent a consistent clinical examination that included the SLR, Active Piriformis Test, and Seated Piriformis Stretch. All subjects also underwent hip arthroscopy to evaluate and treat any identified intra- and/or extra-articular pathologies. This surgical evaluation included visualization of the sciatic nerve and examination for entrapment.

Results:
All subjects complained of hip pain with 27 (82%) having an arthroscopically identified labral tear. Symptoms of buttock pain, inability to sit greater than 30 minutes, parasthesia, and/or pain distal to the knee, were noted in 81%(N=27), 76%(N=25), 57%(N=19), and 30%(N=10), respectively. Using surgical findings as the gold standard for DGS, 23 out of the 33 were diagnosed and treated for entrapment of the sciatic nerve. The sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio for the SLR were 0.15, 0.95, 3.2, 0.9, and 3.59, respectively. For Active Piriformis Test, the sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio were for were 0.78, 0.80, 3.9, 0.27, and 14.4, respectively. For the Seated Piriformis Stretch, the sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio were for were 0.52, 0.90, 5.22, 0.53, and 9.82, respectively. The most accurate results were obtained when the results of the Active Piriformis Test and Seated Piriformis Stretch were combined with sensitivity, specificity, positive likelihood ratio, negative likelihood ratio, and diagnostic odds ratio of 0.91, 0.80, 4.57, 0.11, and 42, respectively.

Conclusion:
The SLR is not useful while the Active Piriformis Test and Seated Piriformis Stretch are valuable tests in identifying those with arthroscopically confirmed DGS.

Clinical Relevance:
For those with recalcitrant hip pain and symptoms suggesting DGS the results of the Active Piriformis Test and Seated Piriformis Stretch can be used together to help identify those with and without the disorder.

**Paper #: 28**

*Arthroscopic Treatment of Recalcitrant Greater Trochanteric Bursitis with Minimum Two-Year Followup*

Southern California Orthopedic Institute
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**Connor Larose, MD, USA, Presenting Author**
Carlos A. Guanche, MD, USA

**Summary:**
Two year clinical followup of patients who underwent arthroscopic bursectomy for recalcitrant greater trochanteric bursitis.
The arthroscopic treatment of bursitis in the peritrochanteric space is a relatively new surgical technique with few published reports of outcomes following surgical treatment. The purpose of this study is to present the surgical outcomes 2 years after arthroscopic bursectomy for recalcitrant greater trochanteric bursitis.

Materials and Methods:
The study is designed as a retrospective review of 38 patients who had previously undergone arthroscopic bursectomy with greater than 24 months of follow up (range, 24 – 83 months), after having failed a series of three injections, physical therapy and activity modification. Patients’ preoperative VAS and postoperative VAS scores were obtained for comparison. In addition, patients also filled out a hip outcome score (HOS) for evaluation of ADLs and sports activities.

Results:
A statistical improvement was noted on VAS scores (8.4 to 2.6), and these were sustained for greater than two years. In addition, the HOS ADL subscale average score of greater than 70% demonstrated good overall functional outcomes. However, 21% of the patients required a secondary surgical procedure for either intraarticular pathology, refractory bursitis or an abductor muscle tear.

Conclusion:
Arthroscopic bursectomy can predictably improve pain scores in patients with recalcitrant bursitis. The treatment of any other existing hip pathology should also be considered at the time of surgery in order to improve outcomes.

Paper #: 29
The Outcome of Arthroscopic Ilio-Tibial Band Release in the Treatment of Lateral Hip Pain after Total Hip Replacement.

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Summary:
We report the treatment and outcome for 9 patients who developed recalcitrant Greater Trochanteric Pain Syndrome after THA and who did not have any gluteal tendon tear.

Data:
Introduction:
Lateral trochanteric pain following total hip arthroplasty has been reported to range between 4-17%. The incidence may vary depending on the approach used and also may be associated with increased lateral offset caused by the arthroplasty. Most patients respond to non-operative measures and cortico-steroid injections, however the treatment of refractory cases has been treated in the past with open bursectomy. Although arthroscopic bursectomy has been shown to be a safe and effective treatment alternative for trochanteric bursitis (also now known as Greater Trochanteric Pain Syndrome, or GTPS), use of this technique has not been reported in patients following total hip arthroplasty (THA).

Methods:
The study group consisted of 9 patients with GTPS following THA performed through a direct anterior (Hueter) approach, and who had symptoms for greater than 6 months, and had failed conservative treatment. The initial THA had been performed between 2007 and 2010 and in this time a total of 373 THAs had been performed. Follow up was for a minimum of 12 months. Prior to surgery an Ultrasound examination was performed to exclude gluteal tendon tears.

Arthroscopy was performed in the lateral position, without traction.
The Ilio-Tibial Band (ITB) was split longitudinally and this split then enlarged to an oval shape. Scarred soft tissue overlying the greater trochanter (“bursa”) was excised. The Gluteal tendon attachments were inspected and checked for tears. There were no patients in this group identified as having a tendon tear. Modified Harris Hip Scores (MHHS) and Non-Arthritic Hip Scores were performed pre-operatively, at 2 weeks, 6 weeks, 6 months and 1 year, and then annually.

Results:
MHHS improved from 56.1 to 75.1 and NAHS from 60.5 to 78.1 by one year, and there was continuing improvement in the 3 patients who had been reviewed at 2 years. There were no complications.

Conclusion:
Arthroscopic ITB decompression with trochanteric bursectomy is safe and effective in the treatment of refractory GTPS following total hip arthroplasty, and in the absence of gluteal tendon tears.

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**Paper #: 30**

**Clinical Results of Arthroscopic Treatment of Acetabular Labral Tears Using Three Methods**

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Chicago, IL, USA

**Benjamin G. Domb, MD, USA, Presenting Author**
Itamar Busheri Botser, MD, USA

**Summary:**
Labral base refixation, simple loop refixation, and selective partial debridement were used for labral preservation in 239 labral tears treated arthroscopically. All three techniques yielded favorable short-term results. Tear type and clinical context should dictate the appropriate choice of labral treatment.

**Data:**
Introduction:
Multiple biomechanics studies have suggested advantages of labral preservation in hip surgery, and superior clinical results have been shown with labral repair over labral debridement. However, the optimal surgical technique for labral preservation is unknown, and may differ in various clinical situations. Three methods for labral preservation are in frequent use in our clinic: labral base refixation, simple loop refixation, and selective partial debridement. The purpose of this study was to compare the intraoperative findings and clinical results for these three surgical approaches to labral preservation.

Methods:
Data was prospectively collected on all patients that underwent arthroscopic hip surgery for labral tear in our institution between the years 2008 and 2010. The inclusion criteria for the study were the completion of pre- and post-operative hip specific evaluation forms, arthroscopic labral treatment with one of the three techniques above, and tear size between 2.5 and 4.5 hours on the clock face. The exclusion criteria were previous hip surgery, hip conditions including hip joint fractures and bony pathologies (Perthes, SCFE and AVN), and Tonnis Grade =2. Three study groups were created according to labral treatment: 1) labral base refixation; 2) simple loop refixation; and 3) selective partial debridement. Surgical outcome was assessed by modified Harris hip score (mHHS), non-arthritic hip score (NAHS), hip outcome score sport specific subscale (HOS SSS) and activities of daily living (HOS ADL), visual analog pain score (VAS), and patient satisfaction on a scale of 1 to 10.

Results:
A total of 239 surgeries (230 patients) fit our inclusion/exclusion criteria; 32, 107, and 100 cases in groups 1 () , 2, and 3, respectively. A majority of surgeries were for labral tear in the context of femoro-acetabular impingement (FAI). At mean follow-up of 9.2 months, all six outcome measurement tools showed improved results after arthroscopic surgery for labral tear. Significant difference was noted in the characteristics of patients that underwent labral refixation (group 1 and 2) versus those who had selective labral debridement (group 3). Patients in groups 3 were on average older (45 versus 33 years, p<0.0001), had higher Tonnis arthritic grades (p=0.0001), did not have any isolated pincer type impingement (p<0.0001), and had higher number of combined Seldes type labral tears (p<0.0001). Those differences were not significant
between group 1 and group 2. Outcome of labral refixation (group 1 and 2) was significantly better than debridement (group 3) according to HOS ADL (p=0.02), but no significant difference was found for the other scores. Outcome for group 1 was better than for group 2 only according to the HOS-SSS improvements (p=0.03).

Conclusions:
All six outcome scores improved significantly at mean follow-up of 9.2 months. No difference was shown between outcomes of labral refixation vs. debridement for any score but the HOS ADL. However, there were significant differences in intraoperative pathology and patient characteristics between the groups. These results suggest that all three techniques of labral preservation yield favorable short-term results, and that tear type and clinical context should dictate the appropriate choice of labral treatment.

Paper #: 31
Arthroscopic Repair of Delaminated Acetabular Articular Cartilage Using a Combination of Microfracture and Fibrin Adhesive. Results at One to Three Years.

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Summary:
Fibrin adhesive is shown to be a safe and effective method of addressing acetabular chondral delamination adhesive to bond the delaminated articular cartilage to the underlying subchondral bone. This is usually done in conjunction with treatment of underlying pathology such as femoroacetabular impingement. Patients were assessed using the modified Harris Hip Score (MHHS) pre- and post-operatively, and statistical significance determined by the Student’s t-test. We report the mid-term results of 43 patients with femoroacetabular impingement who have undergone this technique for reattachment of delaminated chondral flaps.

Results:
We demonstrate statistically significant improvements in patients’ MHHS at a mean of 28 months (16 to 42 months) after surgery (p < 0.0001). The MHHS for pain significantly improved from 21.8 (95% CI 19.0 to 24.7) pre-operatively to 35.8 (95% CI 32.6 to 38.9) post-operatively (p < 0.0001). The MHHS for function also showed significant, although more modest, improvements from 40.0 (95% CI 37.7 to 42.3) pre-operatively to 43.6 (95% CI 41.4 to 45.8) post-operatively (p = 0.0006). There were three patients who had early (within 12 months of the index procedure) revision arthroscopy for iliopsoas pathology.

Conclusions:
Our results indicate that this technique may be suitable for anatomical repair of delaminated acetabular cartilage, demonstrated by improved pain and functional scores as well as arthroscopic assessment. We conclude that this is a valuable hip arthroscopic technique in the treatment of early cartilage damage, although further studies would be useful.