

to surgery, however, the groups were not similarly matched with more pre-existing degenerative disease present in those treated non-operatively.

Conclusion: The literature on non-operative treatment for FAI is limited, lacks detail and has a poor evidence base. We have developed a non-operative strategy which takes account of this literature and represents a consensus of expert opinion. This strategy forms the non-operative arm for a major nationally-funded RCT of arthroscopic surgery for FAI.

Paper 22: Hip Labral Regrowth After Resection: A Prospective Study *GEOFF ABRAMS, MD, USA, PRESENTING AUTHOR*

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SUMMARY

Reconstitution of hip labrum was seen in all patients during second look arthroscopy following previous labral debridement as part of treatment for femoroacetabular impingement

DATA

Introduction: Femoroacetabular (FAI) impingement is becoming an increasingly recognized entity. In managing labral pathology, preference is given to labral repair rather than debridement in order to preserve the sealing function of the labrum. Tears at the labral-chondral junction are amenable to repair, however, tears within the labral substance are classically managed by debridement due to the labrum's relative hypovascularity at this location. Anecdotal evidence from second-look arthroscopies have suggested that some form of labral reconstitution occurs. No investigations to date have examined the presence of labral reconstitution following debridement in human hips.

Methods: From 1999-2000, 24 consecutive patients who previously had open hip surgical dislocation with labral debridement (and cheilectomy/acetabuloplasty as needed) for treatment of FAI underwent removal of symptomatic hardware. At the same time, patients also underwent hip arthroscopy for evaluation of labral reconstitution. No patients had any intra-articular symptoms at the time of arthroscopy. Data recorded included amount of labrum resected, amount of labral regrowth, quality of labral regrowth, labral width at time of second-look arthroscopy, and presence of any labral scarring or inflammation.

Results: Average age at the time of arthroscopy was 28.7 years (range 15 – 57) with average follow-up of 11.9 years. All patients had Tonnis grade 0 changes on hip

radiographs (no joint space narrowing) at the time of the index operation and the average amount of labral resection was 4.2 units (based on clock-face measurement). At follow-up arthroscopy, all patients showed labral regrowth with average reconstituted labral width of 6.2 mm (range 5 – 8 mm).

Homogeneous reconstitution of labral width was seen in 21 of 24 (87.5%) patients. Three of 24 (13.5%) patients showed irregular width of labral regrowth. Labral scarring was noted in 4 of 24 (16.7%) and labral inflammation recorded in 2 of 24 (8.3%). Average Western Ontario and McMaster Universities Arthritis Index (WOMAC) was 98 (range 90-100) at the time of arthroscopy.

Discussion: Labral regrowth after resection was seen in all patients. Good outcomes following labral resection can be expected when no initial joint space narrowing is seen on initial radiographs. This must be taken into account when decisions are made regarding whether to perform labral debridement, repair, or reconstruction.

Paper 23: Relationship Between Tears Of The Ligamentum Teres And Acetabular Undercoverage: Does Micro-Instability Play A Role? *ITAMAR BUSHERI BOTSER, MD, USA, PRESENTING AUTHOR*

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SUMMARY

This study examined the relationship between ligamentum teres tears and acetabular radiographic architecture on 360 hips. Ligamentum tears were more common in hips with lower lateral center edge angle, higher inclination, and in hips without acetabular retroversion. These results suggest that hips with lesser bony constraint may be more dependent on the ligamentum as a secondary stabilizer.

DATA

Objective: Although the function of the ligamentum teres remains a subject of research, it is thought to play a role in stability of the hip joint. We hypothesized that hips with less inherent bony stability would be more dependent on the ligamentum as a secondary stabilizer, and would be more likely to have ligamentum tears. The purpose of this study was to examine the relationship between ligamentum teres tears and acetabular radiographic architecture.

Methods: All patients less than 50 years old who underwent hip arthroscopy between June 2009 and February

2011 were prospectively studied. The exclusion criteria were Tonnis arthritic grade >1 and traumatic high-energy mechanisms of injury. Radiographic data were measured preoperatively on an AP pelvis view, including acetabular inclination (AI), lateral center edge angle (LCEA), magnitude of crossover sign, and ischial spine prominence. A stability index (SI) was defined as $SI = [LCEA - AI]$. Hips were divided into three groups: 1) high stability: $SI > 38^\circ$; 2) medium stability: $16 < SI < 38$; and 3) low stability: $SI < 16^\circ$. The presence of tears of the ligamentum teres was recorded at the time of arthroscopy.

Results: Of the 360 hips (317 patients) included in the study, 170 (47%) had a partial or full thickness ligamentum tear. Patients with tears were significantly older than patients without tears ($p < 0.0001$), with averages of 35.1 and 29.8 years, respectively. Radiographically, patients with tears had less acetabular retroversion, as reflected by lower ischial spine prominence values and lesser crossover signs ($p = 0.01$ and < 0.001 , respectively). Intraobserver reliability coefficients were 0.91 and 0.79 for acetabular inclination and center edge angles, respectively. Using the stability index classification, 557 hips (15%) were classified as high stability, 260 (72%) as medium stability, and 45 (13%) as low stability. Low stability hips were 1.74 times more likely to have a ligamentum tear than high stability hips.

Conclusions: A high prevalence of ligamentum teres tears was observed, likely due to inclusion of all partial thickness tears. Ligamentum tears were more common in hips with lower stability index, and in hips without retroversion. These results suggest that hips with lesser bony constraint may be more dependent on the ligamentum as a secondary stabilizer. Increased loads on the ligamentum in those hips may increase the likelihood of tears. The use of the stability index, along with the observed relationship with tears of the ligamentum teres, may provide a basis for further study of the role of micro-instability in the painful hip.

Paper 24: Changes in Patient Management as a Result of Using Computerised Tomography in Femoro-Acetabular Impingement AMOL RAJIV CHITRE, MBChB, MRCS, FRCS (Tr&Orth), UNITED KINGDOM, PRESENTING AUTHOR

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SUMMARY

Our study suggests pre-operative CT scanning alters patient management in a significant proportion of patients. We believe that it should be used routinely in the assessment of patients being considered for hip arthroscopy.

DATA

Introduction: Computerised Tomography (CT) scanning is used sparingly in the assessment of femoro-acetabular impingement with the mainstays of investigation being plain radiographs and Magnetic Resonance Imaging (MRI). This may be due to potential worries about radiation exposure. In our institution we are increasingly using low-dose CT scans to provide more accurate 3D reconstructions of proximal femoral anatomy prior to undergoing hip arthroscopy. In doing so, we found a large proportion of patients without significant X-ray appearances of Osteoarthritis (OA) had CT findings of OA to preclude arthroscopic surgery. We undertook a retrospective audit to quantify this.

Methods: All patients who had undergone CT scanning under the care of the senior author (TNB) over a 3 year period were identified using our institutions Picture Archiving and Communications System (PACS) database. A retrospective review was undertaken of the clinical notes to identify the presumed diagnosis at the time of the CT request and whether the diagnosis and management changed as a result of the scan itself.

Results: 61 patients were identified in whom a 3D CT scan had been undertaken as part of their assessment for consideration of hip arthroscopy. In all cases plain X-rays had shown minimal osteoarthritic changes. A further 8 patients were identified in whom CT reconstruction was performed for persistent pain following hip arthroscopy. Of the primary group 29 (47.5%) had a significant change in their management as a result of their CT scan. 24 (39.3%) were found to have significant osteoarthritis precluding hip arthroscopy (5 of whom were symptomatic enough to warrant Hip arthroplasty), 4 (6.6%) were referred for consideration of osteotomies of either the pelvis or femur, 1 (1.6%) was thought to be more suitable for open debridement compared to arthroscopic debridement and 2 were lost to follow up.

Of the revision group, 3 were found to have significant osteoarthritis, all of whom went on to have hip arthroplasty. 2 underwent revision hip arthroscopy for residual bony lesions, 2 were referred for consideration of pelvic osteotomy and 1 pt did not have a diagnosis for ongoing symptoms.

Discussion: It has been well demonstrated that significant OA at the time of hip arthroscopy may be related to