

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

VISHWAJEET KUMAR, UNITED KINGDOM

TIMOTHY N. BOARD, MD, UNITED KINGDOM · Wrightington Hospital

Wrightington, Lancashire, United Kingdom

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

a worse outcome for the patient. It has also been shown that neither plain radiographs nor MRI scanning can reliably detect the presence of significant osteoarthritic lesions in the hip. CT scanning may provide a more reliable pre-operative assessment of Osteoarthritis and help to guide decision making.

Conclusion: CT 3D reconstruction is a valuable adjunct to the pre-operative assessment of patients with presumed FAI. We feel that consideration should be given to using it in all cases where hip arthroscopy is being considered.

Paper 25: Impact of Hip Arthroscopy for Femoroacetabular Impingement on Quality of Life AJAY

MALVIYA, MD, UNITED KINGDOM, PRESENTING AUTHOR
GILES STAFFORD, MBBS, BSc, FRCS, UNITED KINGDOM
RICHARD N. VILLAR, BSc (HONS), MA, MS, FRCS, UNITED KINGDOM · The Richard Villar Practice
Cambridge, United Kingdom

SUMMARY

In a prospective, consecutive series of 611 patients, the largest reported to date, we have found that arthroscopic surgery for FAI improves the QoL in 75% of the patients.

DATA

The benefit of hip arthroscopy for the treatment of femoroacetabular impingement (FAI) on quality of life (QoL) needs further exploration. We prospectively collected data on 611 patients, the largest series reported, who underwent hip arthroscopy for FAI over a period of five years under the care of a single surgeon. The minimum follow-up was one year with a mean follow-up of three years. The responses to the Harris hip score were translated using Rosser index matrix, to QoL score. The mean QoL score increased from 0.946 (– 1.486 to 0.995) to 0.974 (0.7 to 1) at one year after surgery ($p < 0.001$). It was noted that the mean QoL score in males was significantly ($p < 0.001$) better than females, both before surgery and at one year after surgery; although the mean change in the QoL score was not statistically different ($M = 0.02$, $F = 0.04$; $p = 0.12$). Linear regression analysis revealed that the significant predictors of change in QoL score were pre-operative QoL score ($p < 0.001$) and the gender ($p = 0.02$). The change in QoL score showed moderate ($r = -0.66$; $p < 0.001$) negative correlation with the pre-operative QoL score. The QoL scores improved in 74.5%, remained unchanged in 15.6%; while it deteriorated in 9.9% of the patients at one year after surgery.

In a prospective, consecutive series of 611 patients, the largest reported to date, we have found that arthroscopic

surgery for FAI improves the QoL in 75% of the patients. The pre-operative QoL score and gender were significant predictors of the change in QoL.

Paper 26: Simulated Hip Arthroscopy Skills: A Randomized Trial of Learning Curves in the Lateral and Supine Positions THOMAS C.B. POLLARD, FRCS (ORTH),

UNITED KINGDOM, PRESENTING AUTHOR
TANVIR KHAN, MRCS, UNITED KINGDOM
ANDREW J. PRICE, FRCS (ORTH), UNITED KINGDOM
HARINDERJIT S. GILL, DPHIL, UNITED KINGDOM
SION GLYN-JONES, FRCS (ORTH), UNITED KINGDOM
JONATHAN L. REES, FRCS (ORTH), UNITED KINGDOM · Nuffield Orthopaedic Centre, University of Oxford
Oxford, United Kingdom

SUMMARY

Orthopaedic trainees objectively improve with training on a hip arthroscopy simulator, as assessed by motion analysis; those learning in the lateral position have greater problems with disorientation after portal exchange, and junior trainees perform to the same level as senior trainees after 9 training episodes.

DATA

Background: The prevalence of hip arthroscopy has increased. It can be performed in the lateral or supine position, but despite advances in equipment, remains technically demanding and generally only performed by subspecialist surgeons. We aimed to objectively quantify and compare learning curves between two groups of orthopaedic trainees randomized to learn simulated hip arthroscopy in either lateral or supine positions, and to further compare differences in learning curves between senior and junior trainees.

Methods: A hip arthroscopy simulator with anterolateral and anterior portals, 70° arthroscopy, and fixed distraction was used. Rotation of the simulator by 90° enabled supine or lateral arthroscopy. 20 orthopaedic trainees with minimal hip arthroscopy experience were randomized into lateral and supine groups, and asked to perform a diagnostic arthroscopy of the central compartment on 12 occasions. Each episode involved a change in portal and repetition of the diagnostic round. A validated motion analysis system objectively measured surgical performance by recording time taken, total path-length of hands, and number of hand movements.

Results: Both groups demonstrated learning with objective improvement in all parameters ($p < 0.001$). Initially, the lateral group were significantly slower and more variable in their performance during the second diagnostic round after portal exchange ($p = 0.006$). They