4Arthroscopy
JSES
KSSTA
Arthroscopy
4B journals

Issue 118.3 Arthroscopy, June 2024

Nederlandse Vereniging voor Arthroscopie

Website www.4b.4abstracts.nl

Part of www.4abstracts.com

4B Arthroscopy founders: D.P. ter Meulen, B. Lubberts

Contact 4@erasmusmc.nl

Manual The titles in the contents are hyperlinks. Use these hyperlinks and the back button underneath every abstract to navigate more easily through the document. All abstracts have a hyperlink to the website of the article. Use this hyperlink to view the article in full-text. Articles can only be accessed in full-text through a personal account or the account of an institution.

BACK

Content
June

Upper Extremity

Arthroscopy
Volume 40, issue 6

- Ambulatory Surgery Centers Reduce Patient Out-of-Pocket Expenditures for Isolated Arthroscopic Rotator Cuff Repair, but Patient Out-of-Pocket Expenditures Are Increasing at a Faster Rate Than Total Healthcare Utilization Reimbursement From Payers
- Clinical and Structural Outcomes of Arthroscopic Rotator Cuff Repair in Patients Over 75 Years Are Comparable to Those in Younger Patients: A Propensity Score-Matched Comparative Study
- Rotator Cuff Tears are Significantly More Frequent in Recurrent Shoulder Instability Patients With Initial Dislocation at Age 40 or Older
- Augmentation of a Transosseous-Equivalent Repair in Posterosuperior Nonacute Rotator Cuff Tears With a Bioinductive Collagen Implant Decreases the Retear Rate at 1 Year: A Randomized Controlled Trial

Journal of Shoulder and Elbow Surgery (JSES)
Volume 33, issue 6

- Arthroscopic repair for isolated subscapularis tear: successful functional outcomes and high tendon healing rate can be expected nine years after surgery
- Mid-term outcomes of arthroscopically assisted lower trapezius tendon transfer using Achilles allograft in treatment of posterior-superior irreparable rotator cuff tear
- Bridging repair reinforced with artificial ligament as an internal brace for irreparable massive rotator cuff tears

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 32, Issue 6

- Glenohumeral morphological predictors of recurrent shoulder instability following arthroscopic Bankart repair
- A modified Patte classification system for rotator cuff tendon retraction to predict reparability and tendon healing in arthroscopic rotator cuff repair

American Journal of Sports Medicine (AJSM)
Volume 52, Issue 7

- Postoperative Negative Pain Thoughts and Their Correlation With Patient-Reported Outcomes After Arthroscopic Rotator Cuff Repair: An Observational Cohort Study
- Similar Healing Rates of Arthroscopic Rotator Cuff Repair With and Without Bone Marrow Stimulation: A Systematic Review and Meta-analysis of Randomized Controlled Trials
- Arthroscopic Latarjet Versus Arthroscopic Free Bone Block Procedures for Anterior Shoulder Instability: A Proportional Meta-analysis Comparing Recurrence, Complication, and Reoperation Rates

Journal of Bone and Joint Surgery (JBJS)
Volume 106, Issue 13+14

- No Upper Extremity Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 482, Issue 6

- No Upper Extremity Abstracts

BACK

Bone and Joint Journal (BJJ)
Volume 106-B, issue 6

- No Upper Extremity Abstracts

Lower Extremity

Arthroscopy
Volume 40, issue 6

- Decreased Hip Labral Width Measured on Preoperative Magnetic Resonance Imaging Is Associated With Greater Revision Rate After Primary Arthroscopic Labral Repair for Femoroacetabular Impingement Syndrome at 5-Year Follow-Up
- Endoscopic Hip Abductor Tendon Repair Results in Successful Outcomes With 5- to 10-Year Follow-Up
- The Addition of the Gracilis Tendon to a Semitendinosus Tendon Autograft Is Not Associated With Knee Muscle Strength, Subjective Knee Function, or Revision Surgery After Anterior Cruciate Ligament Reconstruction
- Patients Undergoing Revision Hip Arthroscopy With Labral Reconstruction or Augmentation Demonstrate Favorable Patient Reported Outcomes: A Systematic Review

Journal of Shoulder and Elbow Surgery (JSES)
Volume 33, issue 6

- No Lower Extremity Abstracts

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 32, Issue 6

- Good clinical outcomes of anterior cruciate ligament reconstruction in patients over 60 years of age
- Ambulatory knee arthroscopic surgery yields cost savings and improved health outcomes
- Influence of female sex and double-quadruple semitendinosus-gracilis graft on the incidence of postoperative symptomatic cyclops lesions after ACL reconstruction
- Seven percent of primary anterior crucial ligament reconstruction patients have arthroscopic resection of cyclops lesions within 2 years: A cohort study of 2556 patients
- Noninterportal capsulotomy of hip arthroscopy showed improved outcomes in borderline hip dysplasia: A retrospective study with minimum 2-year follow-up
- All-inside endoscopic semiautomatic running locked stitch technique shows favourable outcomes for acute Achilles tendon ruptures
- Both arthroscopic one-step Broström–Gould and Lasso-loop stitch techniques achieved favourable clinical outcomes for chronic lateral ankle instability

American Journal of Sports Medicine (AJSM)
Volume 52, Issue 7

- Association Between Symptoms of Anxiety and Depression, Hip Pathology, and Patient-Reported Outcomes After Hip Arthroscopy for Femoroacetabular Impingement
- Effect of Spinopelvic Parameters on Outcomes After Hip Arthroscopy for Femoroacetabular Impingement Syndrome
- Outcome Scores and Survivorship of Patients Undergoing Primary Hip Arthroscopy With Borderline Hip Dysplasia: A Propensity-Matched Study With Minimum 10-Year Follow-up
- Modified Mason-Allen vs Two Simple Stitch Fixation for Medial Meniscus Posterior Root Tears: A Systematic Review and Meta-analysis
- Acute Anterior Cruciate Ligament Reconstruction Performed Within 10 Days of Injury Does Not Increase Risk of Postoperative Arthrofibrosis: A Systematic Review and Meta-analysis

Journal of Bone and Joint Surgery (JBJS)

BACK

Volume 106, Issue 13+14
- No Lower Extremity Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 482, Issue 6
- No Lower Extremity Abstracts

Bone and Joint Journal (BJJ)
Volume 106-B, issue 6
- No Lower Extremity Abstracts

Miscellaneous
Arthroscopy
Volume 40, issue 6
- No Miscellaneous Abstracts

Journal of Shoulder and Elbow Surgery (JSES)
Volume 33, issue 6
- No Miscellaneous Abstracts

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 32, Issue 6
- No Miscellaneous Abstracts

American Journal of Sports Medicine (AJSM)
Volume 52, Issue 7
- No Miscellaneous Abstracts

Journal of Bone and Joint Surgery (JBJS)
Volume 106, Issue 13+14
- No Miscellaneous Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 482, Issue 6
- No Miscellaneous Abstracts

Bone and Joint Journal (BJJ)
Volume 106-B, issue 6
- No Miscellaneous Abstracts

BACK

Upper extremity

Arthroscopy, Volume 40, Issue 6

Ambulatory Surgery Centers Reduce Patient Out-of-Pocket Expenditures for Isolated Arthroscopic Rotator Cuff Repair, but Patient Out-of-Pocket Expenditures Are Increasing at a Faster Rate Than Total Healthcare Utilization Reimbursement From Payers

J. Tiao, A.M. Rosenberg

DOI: https://doi.org/10.1016/j.arthro.2023.10.026

Purpose: To categorize and trend annual out-of-pocket expenditures for arthroscopic rotator cuff repair (RCR) patients relative to total healthcare utilization (THU) reimbursement and compare drivers of patient out-of-pocket expenditures (POPE) in a granular fashion via analyses by insurance type and surgical setting.

Methods: Patients who underwent outpatient arthroscopic RCR in the United States from 2013 to 2018 were identified from the IBM MarketScan Database. Primary outcome variables were total POPE and THU reimbursement, which were calculated for all claims in the 9-month perioperative period. Trends in outcome variables over time and differences across insurance types were analyzed. Multivariable analysis was performed to investigate drivers of POPE.

Results: A total of 52,330 arthroscopic RCR patients were identified. Between 2013 and 2018, median POPE increased by 47.5% ($917 to $1,353), and median THU increased by 9.3% ($11,964 to $13,076). Patients with high deductible insurance plans paid $1,910 toward their THU, 52.5% more than patients with preferred provider plans ($1,253, P = .001) and 280.5% more than patients with managed care plans ($502, P = .001). All components of POPE increased over the study period, with the largest observed increase being POPE for the immediate procedure (P = .001). On multivariable analysis, out-of-network facility, out-of-network surgeon, and high-deductible insurance most significantly increased POPE.

Conclusion: POPE for arthroscopic RCR increased at a higher rate than THU over the study period, demonstrating that patients are paying an increasing proportion of RCR costs. A large percentage of this increase comes from increasing POPE for the immediate procedure. Out-of-network facility status increased POPE 3 times more than out-of-network surgeon status, and future cost-optimization strategies should focus on facility-specific reimbursements in particular. Last, ambulatory surgery centers (ASCs) significantly reduced POPE, so performing arthroscopic RCRs at ASCs is beneficial to cost-minimization efforts.

BACK

Clinical and Structural Outcomes of Arthroscopic Rotator Cuff Repair in Patients Over 75 Years Are Comparable to Those in Younger Patients: A Propensity Score-Matched Comparative Study

H.G. Kim, S.C. Kim

DOI: https://doi.org/10.1016/j.arthro.2023.10.046

Purpose: To compare clinical and structural outcomes of arthroscopic rotator cuff repair (ARCR) in patients over 75 years and those under 75 years and to analyze the factors associated with retear and clinical outcomes after ARCR.

Methods: This retrospective study reviewed patients who underwent ARCR between 2011 and 2021 with at least 2 years of follow-up. Using propensity score matching for sex, tear size, subscapularis involvement, and follow-up time, this study included 54 patients older than 75 years (group A) and 54 patients younger than 75 years (group B). Cuff integrity was evaluated using magnetic resonance imaging (MRI). Structural and clinical outcomes were compared between the 2 groups.

Results: The mean improvements in external rotation (P = .030) and the American Shoulder and Elbow Surgeons (ASES) score (P = .043) were significantly higher in group A. Visual analog scales for pain and function, ASES score, and Constant score were significantly improved in both groups (all P = .001). On routine postoperative MRI at 6 months, the retear rate was 20.4% (11/54) in group A and 18.5% (10/54) in group B with no statistical difference between the 2 groups (P = .808). Factor analysis in group A showed that follow-up duration (P = .019), tear size in mediolateral dimension (P = .037), occupation ratio (P = .036), and incomplete repair (P = .034) were associated with retear, and mild glenohumeral arthritis (P = .003) and subscapularis involvement (P = .018) were associated with inferior Constant score.

Conclusion: Clinical and structural outcomes after ARCR in patients aged 75 years or older are comparable to those in patients younger than 75 years.

Level of Evidence: Level III, retrospective case-control study.

BACK

Rotator Cuff Tears are Significantly More Frequent in Recurrent Shoulder Instability Patients With Initial Dislocation at Age 40 or Older

Y. Ueda, H. Sugaya

DOI: https://doi.org/10.1016/j.arthro.2023.12.026

Purpose: To investigate and compare the pathologies and clinical outcomes of patients with traumatic anterior shoulder instability who underwent arthroscopic stabilization at 40 years or older between shoulders with initial dislocation before age 40 years and at 40 years or after.

Methods: Shoulders that underwent arthroscopic stabilization for recurrent traumatic anterior shoulder instability at 40 years or older with a minimum of 2-year follow-up were included. The subjects were divided into 2 groups according to age at initial dislocation after propensity score matching to reduce potential bias: younger than 40 years (group 1) and 40 years or older (group 2). Radiographic findings, pathologies, clinical outcomes, and complications were compared between the groups.

Results: Group 1 included 56 shoulders in 56 patients (26 men and 30 women) with a mean age of 51 years (range, 40-77 years). Group 2 included 28 shoulders in 28 patients (13 men and 15 women) with a mean age of 51 years (range, 40-77 years). Glenoid bone loss was greater in group 1 than in group 2 ($P = .004$). Rotator cuff tears were more frequently observed in group 2 than in group 1 ($P < .001$). Both groups showed significant improvement in the West Ontario Shoulder Instability Index score ($P < .001$ for each) and flexion ($P < .001$ for each). The recurrence rate was 4% in group 1 and 7% in group 2.

Conclusion: Rotator cuff tears are significantly more frequent in recurrent shoulder instability patients with initial dislocation at age 40 or older. Arthroscopic stabilization yielded a low recurrence rate and favorable outcomes with a good return-to-sport rate in patients 40 years or older.

Level of Evidence: Level III, retrospective comparative prognostic trial.

BACK

Augmentation of a Transosseous-Equivalent Repair in Posterosuperior Nonacute Rotator Cuff Tears With a Bioinductive Collagen Implant Decreases the Retear Rate at 1 Year: A Randomized Controlled Trial

M.Á.R. Ibán, M.G. Navlet

DOI: https://doi.org/10.1016/j.arthro.2023.12.014

Purpose: To determine whether the addition of a bioinductive collagen implant (BCI) over a transosseous equivalent (TOE) repair of medium-to-large posterosuperior rotator cuff tears improves the healing rate determined by magnetic resonance imaging (MRI) at 12-month follow-up.

Methods: A Level I randomized controlled trial was performed in 124 subjects with isolated, symptomatic, reparable, full-thickness, medium-to-large posterosuperior nonacute rotator cuff tears, with fatty infiltration ≤2. These were randomized to 2 groups in which an arthroscopic posterosuperior rotator cuff tear TOE repair was performed alone (Control group) or with BCI applied over the TOE repair (BCI group). The primary outcome was the retear rate (defined as Sugaya 4-5) determined by MRI at 12 months of follow-up. Secondary outcomes were characteristics of the tendon (Sugaya grade and thickness of the healed tendon) and clinical outcomes (pain levels, EQ-5D-5L, American Shoulder and Elbow Surgeons, and Constant–Murley scores) at 12 months of follow-up.

Results: Of the 124 randomized patients, 122 (60 in the BCI group and 62 in the Control group) were available for MRI evaluation 12.2 ± 1.02 months after the intervention. There were no relevant differences in preoperative characteristics. Adding the BCI reduced the retear rate (8.3% [5/60] in the BCI group vs 25.8% [16/62] in the Control group, $P = .010$; relative risk of retear of 0.32 [95% confidence interval 0.13-0.83]). Sugaya grade was also better in the BCI group ($P = .030$). There were no differences between groups in the percentage of subjects who reached the MCID for CMS (76.7% vs 81.7%, $P = .654$) or American Shoulder and Elbow Surgeons (75% vs 80%, $P = .829$), in other clinical outcomes or in complication rates at 12.4 ± 0.73 (range 11.5-17) months of follow-up.

Conclusion: Augmentation with a BCI of a TOE repair in a medium-to-large posterosuperior rotator cuff tear reduces the retear rate at 12-month follow-up by two-thirds, yielding similar improvements in clinical outcomes and without increased complication rates.

Level of Evidence: Level I, randomized controlled trial.

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 33, issue 6

Arthroscopic repair for isolated subscapularis tear: successful functional outcomes and high tendon healing rate can be expected nine years after surgery

O. Galasso, M. Mercurio

DOI: https://doi.org/10.1016/j.jse.2023.10.016

Background: Literature describing outcomes and integrity after isolated subscapularis (SSC) tendon repair is emerging but remains limited to a few small case series with short-term follow-up. The aim of this study was to evaluate the long-term clinical outcomes and repair integrity in patients who underwent arthroscopic repair of isolated SSC tears.

Methods: A retrospective study was conducted with the following inclusion criteria: (1) primary and elective shoulder arthroscopy for isolated SSC repair, (2) type III (a full-thickness tear in the upper two-thirds of the tendon) or IV (a complete tear without tendon retraction) SSC tear according to the Lafosse classification, and (3) a minimum 24-month follow-up. Preoperatively, the range of motion (ROM) and the Constant-Murley score (CMS) and at follow-up, the ROM, the University of California-Los Angeles (UCLA) Shoulder Rating Scale, the Disabilities of the Arm, Shoulder, and Hand (DASH) questionnaire, and the CMS were evaluated; an ultrasonographic assessment of tendon healing was performed according to the Sugaya classification.

Results: The final sample consisted of 45 patients with an average age of 55 ± 9 years. After a mean follow-up time of 107 ± 54 months, the mean UCLA and DASH scores were 8.7 ± 1.3 and 42.2 ± 6.4, respectively. ROM and CMS showed statistically significant improvements (all $P < .001$). Before surgery, the mean CMS was 49% that of sex- and age-matched healthy individuals, and all patients showed a CMS lower than the normative data. At the final follow-up visit, the mean CMS was 94.2% that of sex- and age-matched healthy individuals, and no patients showed CMS of 30 or less. The mean increase in the CMS was 41.4 ± 9.8 points (range, 23-60 points). The ultrasonographic assessment showed SSC tendon healing in 39 (86.7%) cases; tendon retear was recorded in 5 (13.3%) cases. All scores directly correlated with the healing of the tendon. A higher postoperative DASH score was associated with male sex ($P = .039$, $\beta = 5.538$) and a longer follow-up period ($P = .044$, $\beta = 0.001$). The postoperative CMS ($P < .001$) and UCLA scores ($P = .001$) were significantly higher in patients younger than 60 years of age at surgery than in older individuals.

Conclusion: Arthroscopic repair of isolated SSC tears achieves excellent clinical and functional results at a mean of 9 years postoperatively, with a satisfactory healing rate. Better functional outcomes correlate with SSC tendon integrity and were observed in male patients and in those younger than 60 years at surgery.

Level of evidence: Level IV, Case series, Treatment study.

BACK

Mid-term outcomes of arthroscopically assisted lower trapezius tendon transfer using Achilles allograft in treatment of posterior-superior irreparable rotator cuff tear

C.H. Baek, B.T. Kim

DOI: https://doi.org/10.1016/j.jse.2023.09.013

Background: Arthroscopically assisted lower trapezius tendon (aLTT) transfer is one of the treatment options for posterior-superior irreparable rotator cuff tears (PSIRCTs). Although short-term clinical outcomes have shown promising results, there are currently no reported clinical outcomes over a longer follow-up period. This study evaluated the mid-term outcomes of aLTT transfer in patients with a diagnosis of PSIRCT.

Methods: This retrospective case-series study included patients who underwent aLTT transfer between May 2017 and May 2019. The clinical outcome assessment included the visual analog scale (VAS) pain score, Constant score, American Shoulder and Elbow Surgeons score, University of California–Los Angeles score, Activities of Daily Living Requiring Active External Rotation (ADLER) score, active range of motion, Single Assessment Numeric Evaluation score, and return-to-work rate. The radiographic analysis included the acromiohumeral distance, Hamada grade, and integrity of the transferred tendon at final follow-up. Subgroup analyses were performed based on the integrity of the transferred tendon and the trophicity of the teres minor (Tm).

Results: This study enrolled 36 patients with a mean age of 63.4 years who met the inclusion criteria and were followed up for a mean of 58.2 ± 5.3 months. At final follow-up, the patients showed significant improvement in mean VAS score, Constant score, American Shoulder and Elbow Surgeons score, University of California–Los Angeles score, ADLER score, and active range of motion in all directions except internal rotation. A decrease in the acromiohumeral distance and an increase in the Hamada grade were observed at final follow-up ($P = .040$ and $P = .006$, respectively). Retears of the transferred tendon occurred in 7 patients, and postoperative infections developed in 2 individuals. An interesting finding was that the retear group still demonstrated improvement in the VAS score but did not show improvement in external rotation at the side by the final follow-up. Compared with the Tm non-hypertrophy group, the Tm hypertrophy group showed significantly better improvement in external rotation at 90° of abduction and at the side, as well as the ADLER score. Of the study patients, 30 (83.3%) were able to successfully resume their previous work.

Conclusion: In this study, aLTT transfer in patients with PSIRCTs demonstrated significant improvements in clinical and radiologic outcomes by the final follow-up. These findings provide support for the mid-term safety and effectiveness of aLTT transfer as a viable joint-preserving treatment option for PSIRCTs. However, larger and longer-term studies are still needed to further validate these findings.

Level of evidence: Level IV, Case Series, Treatment study.

BACK

Bridging repair reinforced with artificial ligament as an internal brace for irreparable massive rotator cuff tears

K. Gan, M. Bi

DOI: https://doi.org/10.1016/j.jse.2023.10.020

Background: The irreparable massive rotator cuff tear (IMRCT) is challenging to manage. Although various surgical options have been proposed to treat IMRCTs, the optimal surgical technique remains controversial. Arthroscopic bridging patch repair is clinically used for treating IMRCTs, but the healing rate of the patch graft is negatively affected by superior shift of the humeral head. This study aimed to evaluate the clinical efficacy of artificial ligament as an internal brace (IB) reinforcing fascia lata autograft bridging repair (ABR) in the treatment of IMRCTs.

Methods: The data of 50 patients with IMRCTs who underwent ABR reinforced with artificial ligament as an IB (ABR + IB) (internal brace group) or ABR alone (control group) were retrospectively evaluated preoperatively and at 2-year follow-up. Clinical outcomes were assessed based on the shoulder activity, of which the strength was measured using a 0-10 points manual muscle test scale, American Shoulder and Elbow Surgeons score, and visual analog scale for pain. Imaging outcomes were evaluated based on acromiohumeral distance (AHD), Hamada grade, Goutallier grade, and the status of fascia lata grafts as per radiographs or magnetic resonance imaging findings.

Results: Both groups showed significantly better results in shoulder activity, American Shoulder and Elbow Surgeons score, visual analog scale score, and AHD at 2-year follow-up compared with preoperative levels ($P < .001$). Compared with the control group ($n = 24$), the internal brace group ($n = 26$) had better mean AHD (7.0 ± 1.4 mm vs. 5.9 ± 1.0 mm, $P = .002$), mean improvement in AHD (3.3 ± 1.5 mm vs. 2.0 ± 0.6 mm, $P < .001$), healing rate of autografts (92.3% vs. 54.2%, $P = .002$), and improvement rate of Hamada grade (73.1% vs. 41.7%, $P = .025$) at 2-year follow-up. No significant differences were found in active elevation, active external rotation, active internal rotation, abduction strength, external rotation strength, internal rotation strength, American Shoulder and Elbow Surgeons score, or visual analog scale between the 2 groups at 2-year follow-up.

Conclusion: Both the ABR + IB and ABR improved the postoperative short-term clinical and imaging outcomes in managing IMRCTs, the ABR + IB is statistically superior to ABR alone in terms of healing rate of the bridging graft, AHD, and Hamada grade at 2-year follow-up, while further clinical investigations with larger sample size and longer follow-ups are required to validate the clinical significance of this novel technique for IMRCTs.

Level of evidence: Level III, Retrospective Cohort Comparison, Treatment study.

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 32, Issue 6

Glenohumeral morphological predictors of recurrent shoulder instability following arthroscopic Bankart repair

E.T. Hurley, J. O'Grady

DOI: https://doi.org/10.1002/ksa.12169

Purpose: The purpose of this study was to evaluate glenohumeral morphological features on a magnetic resonance arthrogram (MRA) to determine risk factors for recurrence of anterior shoulder instability following arthroscopic Bankart repair (ABR).

Methods: A retrospective review of patients who underwent ABR between 2012 and 2017 was performed to identify patients who had recurrence of instability following stabilisation (Group 1). These were pair-matched in a 2:1 ratio for age, gender and sport with a control (Group 2) who underwent ABR without recurrence. Preoperative MRAs were evaluated for risk factors for recurrence, with glenoid bone loss and Hill–Sachs lesions also measured. Multilinear and multilogistic regression models were used to evaluate factors affecting recurrence.

Results: Overall, 72 patients were included in this study, including 48 patients without recurrence and 24 patients with recurrent instability. There was a significant difference between the two groups in mean glenoid bone loss (Group 1: 7.3% vs. Group 2: 5.7%, $p < 0.0001$) and the rate of off-track Hill–Sachs lesions (Group 1: 20.8% vs. Group 2: 0%, $p = 0.0003$). Of the variables analysed in logistic regression, increased glenoid anteversion ($p = 0.02$), acromioclavicular (AC) degeneration ($p = 0.03$) and increased Hill–Sachs width were associated with increased risk of failure. Increased chondral version ($p = 0.01$) and humeral head diameter in the anteriorposterior view were found to be protective and associated with a greater likelihood of success.

Conclusion: Glenoid anteversion was a risk factor for recurrent instability, whereas increased chondral version and humeral head diameter were associated with higher rates of success following ABR. Glenoid bone loss, presence of an off-track Hill–Sachs lesion, increased Hill–Sachs width and AC degeneration were also associated with failure. These findings should be used by surgeons to stratify risk for recurrence following ABR.

Level of Evidence: Level III.

BACK

A modified Patte classification system for rotator cuff tendon retraction to predict reparability and tendon healing in arthroscopic rotator cuff repair

Y. Takeda, K. Fujii

DOI: https://doi.org/10.1002/ksa.12162

Purpose: The purpose of this study was to propose a modified Patte classification system for tendon retraction, including the cut-off points for predicting reparability and rotator cuff healing after arthroscopic rotator cuff repair (ARCR) and assess its prediction accuracy and measurement reliability.

Methods: This retrospective study included 463 consecutive patients scheduled to undergo ARCR for full-thickness supraspinatus tears. Receiver operating characteristic (ROC) curve analysis was used to determine the cut-off points for predicting reparability and tendon healing. The modified Patte classification system, in which these cut-off points were combined with the original Patte classification, classified the tendon retraction as stages I–V. The prediction accuracy of reparability and tendon healing was assessed using the area under the curve (AUC). Measurement reliability was determined using Cohen's κ statistics.

Results: Of the 402 included patients, 32 rotator cuff tears were irreparable and 71 of the remaining 370 were diagnosed with healing failure. ROC analysis determined the cut-off point of reparability at the medial one-fifth and that of tendon healing at the medial one-third of the humeral head. The AUC of the modified Patte classification for predicting reparability and tendon healing was 0.897 (excellent) and 0.768 (acceptable), respectively. Intra-rater reliability was almost perfect (mean κ value: 0.875), and inter-rater reliability was substantial (0.797).

Conclusion: Diagnostic performance of the modified Patte classification system was excellent for reparability and acceptable for rotator cuff healing, with high measurement reliability. The modified Patte classification system can be easily implemented in clinical practice for planning surgical procedures and counselling patients in the day-by-day clinical work.

Level of Evidence: Level III.

BACK

American Journal of Sports Medicine (AJSM), Volume 52, Issue 7

Postoperative Negative Pain Thoughts and Their Correlation With Patient-Reported Outcomes After Arthroscopic Rotator Cuff Repair: An Observational Cohort Study

H. Kuechly, S. Kurkowski

DOI: https://doi.org/10.1177/03635465241247289

Background: Pain and pain perception are influenced by patients' thoughts. The short form Negative Pain Thoughts Questionnaire (NPTQ-SF) can be used to quantify unhelpful negative cognitive biases about pain, but the relationship between NPTQ-SF scores and orthopaedic surgery outcomes is not known.

Purpose: The purpose was to assess the relationship between negative pain thoughts, as measured by the NPTQ-SF, and patient-reported outcomes in patients undergoing arthroscopic rotator cuff repair, as well as to compare NPTQ-SF scores and outcomes between patients with and without a history of chronic pain and psychiatric history. It was hypothesized that patients with worse negative pain thoughts would have worse patient-reported outcomes.

Study Design: Cohort study; Level of evidence, 2.

Methods: In total, 109 patients undergoing arthroscopic rotator cuff repair were administered the 4-item NPTQ-SF, 12-item Short Form Health Survey (SF-12), American Shoulder and Elbow Surgeons (ASES) Shoulder Evaluation Form, and visual analog scale pain survey preoperatively between July 2021 and August 2022. The same surveys were completed ≥6 months postoperatively by 74 patients confirmed to have undergone arthroscopic rotator cuff repair.

Results: Preoperative NPTQ-SF scores did not show any correlation with the postoperative patient-reported outcomes measured in this study. Postoperative NPTQ-SF scores were statistically significantly negatively correlated with postoperative SF-12 Physical Health Score, SF-12 Mental Health Score, ASES, and satisfaction scores ($P < .05$). Postoperative NPTQ-SF scores were statistically significantly positively correlated with postoperative visual analog scale scores ($P < .001$). Moreover, postoperative NPTQ-SF scores were statistically significantly negatively correlated with achieving a Patient Acceptable Symptom State and the minimal clinically important difference on the postoperative ASES form ($P < .001$ and $P = .009$, respectively).

Conclusion: Postoperative patient thought patterns and their perception of pain are correlated with postoperative outcomes after rotator cuff repair. This correlation suggests a role for counseling and expectation management in the postoperative setting. Conversely, preoperative thought patterns regarding pain, as measured by the NPTQ-SF, do not correlate with postoperative patient-reported outcome measures. Therefore, the NPTQ-SF should not be used as a preoperative tool to aid the prediction of outcomes after rotator cuff repair.

BACK

Similar Healing Rates of Arthroscopic Rotator Cuff Repair With and Without Bone Marrow Stimulation: A Systematic Review and Meta-analysis of Randomized Controlled Trials

N. Thamrongskulsiri, D. Limskul

DOI: https://doi.org/10.1177/03635465231185340

Background: Bone marrow stimulation (BMS) techniques such as microfracture, nanofracture, and the crimson duvet procedure expose the bone marrow of the proximal humerus to the rotator cuff tendon footprint. The effect of performing BMS on tendon healing is a subject of interest.

Purpose: To compare studies on arthroscopic rotator cuff repair with BMS versus without BMS for rotator cuff tears according to healing rates and clinical and radiological outcomes.

Study Design: Systematic review and meta-analysis; Level of evidence, 2.

Methods: The 2020 PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines were followed in conducting a search. Studies that compared arthroscopic rotator cuff repair with and without BMS were included if they provided postoperative patient-reported outcomes and healing rates. Dichotomous outcomes were expressed as mean differences (MDs), while continuous outcomes were expressed as odds ratio.

Results: Included were 5 studies (N = 499 shoulders); 4 studies had level 1 evidence, and 1 study had level 2 evidence. The healing rate of rotator cuff repair was similar between the 2 groups (ie, with and without BMS) (odds ratio, 1.58 [95% CI, 0.63 to 4.00]; P = .33). Furthermore, there were no significant differences in the postoperative Constant score (MD, 1.41 [95% CI, –0.58 to 3.39]; P = .16), American Shoulder and Elbow Surgeons score (MD, 0.77 [95% CI, –1.43 to 2.96]; P = .49), or range of motion for forward flexion (MD, 2.45 [95% CI, –0.66 to 5.57]; P = .12) and external rotation (MD, 0.81 [95% CI, –2.35 to 3.97]; P = .62) at the final follow-up between the 2 groups.

Conclusion: The healing rate of rotator cuff repair was similar, regardless of whether BMS was performed or not. Additionally, there was no significant difference in postoperative patient-reported outcome scores, range of motion, and complications.

BACK

Arthroscopic Latarjet Versus Arthroscopic Free Bone Block Procedures for Anterior Shoulder Instability: A Proportional Meta-analysis Comparing Recurrence, Complication, and Reoperation Rates

A. Cozzolino, R. de Giovanni

DOI: https://doi.org/10.1177/03635465231188530

Background: Several arthroscopic glenoid bone augmentation techniques have been introduced to treat patients affected by anterior shoulder instability associated with critical bone loss. The efficacy of the different arthroscopic bony procedures has not been compared yet.

Purpose: To compare the recurrence, complication, and reoperation rates of the arthroscopic Latarjet (AL) and arthroscopic free bone block (ABB) procedures for anterior shoulder instability.

Study Design: Meta-analysis and systematic review; Level of evidence, 4.

Methods: A systematic search was conducted in MEDLINE/PubMed, Web of Science, and Embase to identify clinical studies reporting the outcomes of the AL and ABB procedures. The following search phrases were used: “Arthroscopic” AND “Bone Block” OR “Bone Graft,” and “Arthroscopic” AND “Glenoid Augmentation” OR “Glenoid Reconstruction,” and “Arthroscopic” AND “Latarjet” OR “Coracoid Graft” OR “Coracoid Transfer.” Exclusion criteria were <24 months of minimum follow-up, sample size <10 cases, revision after previous glenoid bone grafting, epilepsy, and multidirectional instability. Data regarding the study design, patient characteristics, surgical technique, and outcomes were extracted and analyzed. A proportional meta-analysis was conducted to compare the complication, recurrence, and reoperation rates between the 2 groups. Multiple subgroup analyses were performed to analyze the incidence of each complication and assess the weight of different fixation methods (in the whole cohort) or different graft types (in the ABB group). The modified Coleman Methodology Score was used to assess the risk of bias.

Results: Of 5010 potentially relevant studies, 18 studies regarding the AL procedure (908 cases) and 15 studies regarding the ABB procedure (469 cases) were included. The 2 groups were comparable in age (P = .07), sex (P = .14), glenoid bone loss (P = .14), number of preoperative dislocations (P = .62), proportion of primary and revision procedures (P = .95), length of follow-up (P = .81), modified Coleman Methodology Score (P = .21), and level of evidence (P = .49). There was no difference in the recurrence (P = .88), reoperation (P = .79), and complication (P = .08) rates. The subgroup analyses showed a higher rate of hardware-related complications for screw fixation compared with flexible fixation (P = .01).

Conclusion: The AL and ABB procedures had similar recurrence, reoperation, and complication rates. Screw fixation of the bone graft was related to an increased risk of complications compared with flexible fixation.

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 106, Issue 13+14

No Upper Extremity Abstracts

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 482, Issue 6

No Upper Extremity Abstracts

BACK

Bone and Joint Journal (BJJ), Volume 106-B, issue 6

No Upper Extremity Abstracts

BACK

Lower Extremity

Arthroscopy, Volume 40, Issue 6

Decreased Hip Labral Width Measured on Preoperative Magnetic Resonance Imaging Is Associated With Greater Revision Rate After Primary Arthroscopic Labral Repair for Femoroacetabular Impingement Syndrome at 5-Year Follow-Up

Z.I. Li, D.S. Shankar

DOI: https://doi.org/10.1016/j.arthro.2023.11.030

Purpose: To examine the associations between hip labral width and patient-reported outcomes, clinical threshold achievement rates, and rate of reoperation among patients with femoroacetabular impingement syndrome (FAIS) who underwent hip arthroscopy and labral repair at minimum 5-year follow-up.

Methods: Patients were identified from a prospective database who underwent primary hip arthroscopy for treatment of labral tears and FAIS. Modified Harris Hip Score (mHHS) and Nonarthritic Hip Score (NAHS) were recorded preoperatively and at 5-year follow-up. Achievement of the minimal clinically important difference (MCID), substantial clinical benefit (SCB), and patient-acceptable symptom state (PASS) was determined using previously established values. Labral width magnetic resonance imaging measurements were performed by 2 independent readers at standardized "clockface" locations. Patients were stratified into 3 groups at each position: lower-width (<½ SD below mean), middle-width (within ½ SD of mean), and upper-width (>½ SD above mean). Multivariable regression was used to evaluate associations of labral width with patient-reported outcomes and reoperation rate.

Results: Seventy-three patients (age: 41.0 ± 12.0 years; 68.5% female) were included. Inter-rater reliability for labral width measurements was high at all positions (intraclass correlation coefficient 0.94-0.96). There were no significant intergroup differences in mHHS/NAHS improvement ($P > .05$) or in achievement rates of MCID/SCB/PASS at each clockface position ($P > .05$). Eleven patients (15.1%) underwent arthroscopic revision and 4 patients (5.5%) converted to total hip arthroplasty. Multivariable analysis found lower-width groups at 11:30 (odds ratio 1.75, $P = .02$) and 3:00 (odds ratio 1.59, $P = .04$) positions to have increased odds of revision within 5 years; however, labral width was not associated with 5-year improvement in mHHS/NAHS, achievement of MCID/PASS/SCB, or conversion to total hip arthroplasty ($P > .05$).

Conclusion: Hip labral width <½ SD below the mean measured on preoperative magnetic resonance imaging at 11:30- and 3:00-clockface positions was associated with increased odds of reoperation after arthroscopic labral repair and treatment of FAIS. Labral width was not associated with 5-year improvement of mHHS, NAHS, achievement of clinical thresholds, or conversion to arthroplasty.

Level of Evidence: Level IV, case series.

BACK

Endoscopic Hip Abductor Tendon Repair Results in Successful Outcomes With 5- to 10-Year Follow-Up

J.W. Thomas Byrd, K. S. Jones

DOI: https://doi.org/10.1016/j.arthro.2023.11.031

Purpose: To report the outcomes of endoscopic repair in a consecutive series of patients with follow-up ranging from 5 to 10 years.

Methods: Sixty-five consecutive hips in 63 patients (2 bilateral) undergoing endoscopic abductor tendon repair with minimum 5-year follow-up were assessed with the modified Harris Hip Score. The minimal clinically important difference (MCID) was determined as one-half the standard deviation of the amount of improvement.

Results: The mean age was 56.6 years (standard deviation [SD], 11.3 years), with 58 female and 5 male patients. Follow-up was obtained on 64 hips (98.5%) at a mean of 85 months (SD, 15.7 months). There were 33 full-thickness and 32 partial-thickness tears, with 40 gluteus medius tears, 23 medius and minimus tears, and 2 isolated minimus tears. Concomitant arthroscopy of the hip joint was performed in 50 patients (52 hips), including 15 with correction of femoroacetabular impingement. The mean modified Harris Hip Score was 48.4 (SD, 15.7) preoperatively and 83.4 (SD, 15.9) postoperatively, reflecting a mean improvement of 34.9 (95% confidence interval, 34.9 ± 4.3), with 92.2% of patients achieving the MCID of 8.7. There were no complications. Three patients underwent further surgery: One underwent total hip replacement at 11 months after abductor repair, one underwent repeated arthroscopy for joint debridement at 12 months after repair, and one underwent revision abductor repair at 6 years postoperatively.

Conclusion: Collectively, with 5- to 10-year follow-up, patients undergoing endoscopic abductor tendon repair can respond exceptionally well, with 92.2% achieving the MCID, even among a heterogeneous group of partial- and full-thickness tears with single- and 2-tendon involvement undergoing single- and double-row repair.

Level of Evidence: Level IV, case series.

BACK

The Addition of the Gracilis Tendon to a Semitendinosus Tendon Autograft Is Not Associated With Knee Muscle Strength, Subjective Knee Function, or Revision Surgery After Anterior Cruciate Ligament Reconstruction

R. Cristiani, M. Forssblad

DOI: https://doi.org/10.1016/j.arthro.2023.10.029

Purpose: To evaluate and compare isokinetic knee muscle (extension and flexion) strength, single-leg hop (SLH) test performance, anterior knee laxity, subjective knee function, and the 2-year revision surgery risk between patients who underwent anterior cruciate ligament reconstruction (ACLR) with semitendinosus tendon (ST) autografts and patients who underwent ACLR with ST and gracilis tendon (ST-G) autografts.

Methods: We identified patients aged 16 years or older who underwent primary ACLR with hamstring tendon autografts at our institution from January 2005 to December 2020 and had no associated ligament injuries. Isokinetic knee muscle strength and SLH test performance were assessed 6 months postoperatively. Anterior knee laxity (KT-1000 arthrometer, 134 N) was assessed preoperatively and 6 months postoperatively. The Knee Injury and Osteoarthritis Outcome Score (KOOS) was collected preoperatively and 1 and 2 years postoperatively. Patients who underwent revision ACLR at any institution in Sweden within 2 years of primary surgery were identified through the Swedish National Knee Ligament Registry.

Results: A total of 6,974 patients (5,479 with ST and 1,495 with ST-G) were included. There were no significant differences in extension and flexion strength or SLH test performance between the groups. Preoperatively, there was no significant difference in knee laxity between the ST and ST-G groups. Postoperatively, the ST-G group had significantly increased mean side-to-side (STS) laxity (2.1 ± 2.3 mm vs 1.7 ± 2.2 mm, $P < .001$) and showed a trend toward increased STS laxity according to the International Knee Documentation Committee form, with significantly fewer patients with STS laxity of 2 mm or less (58.4% vs 65.8%) and significantly more patients with STS laxity between 3 and 5 mm (35.0% vs 29.9%) or greater than 5 mm (6.6% vs 4.3%) ($P < .001$). The only significant difference in subjective knee function was for the KOOS Quality of Life subscale score in favor of the ST group preoperatively (37.3 ± 21.4 vs 35.1 ± 19.9, $P = .001$). No other significant differences between the groups were found preoperatively and 1 and 2 years postoperatively for any of the KOOS subscales. The overall revision ACLR rate within 2 years of primary surgery was 2.0% (138 of 6,974 patients). The revision ACLR risk in the ST-G group (1.7%, 25 of 1,495 patients) was not significantly different from that in the ST group (2.1%, 113 of 5,479 patients) (hazard ratio, 0.80; 95% confidence interval, 0.50-1.24; $P = .32$).

Conclusion: The addition of the gracilis tendon to an ST autograft was not associated with knee muscle strength, SLH test performance, subjective knee function, or the risk of revision surgery after ACLR.

Level of Evidence: Level III, retrospective comparative study.

BACK

Patients Undergoing Revision Hip Arthroscopy With Labral Reconstruction or Augmentation Demonstrate Favorable Patient Reported Outcomes: A Systematic Review

M.S. Lee, S. Fong

DOI: https://doi.org/10.1016/j.arthro.2023.11.027

Purpose: To review current literature evaluating patient-reported outcomes (PROs) and survivorship in patients undergoing revision hip arthroscopy with labral reconstruction or augmentation.

Methods: A systematic review was performed with the following key words: (revision) AND (hip OR femoroacetabular impingement) AND (arthroscopy OR arthroscopic) AND (reconstruction OR augmentation OR irreparable). PubMed, Cochrane Trials, and Scopus were queried in October 2022 using the criteria established in the Preferred Reporting Items for Systematic Reviews and Meta-analyses. Studies were included if they involved patients undergoing revision hip arthroscopy with labral reconstruction or augmentation and reported preoperative and postoperative PROs at minimum 2-year follow-up. Only original research articles were included. Survivorship was defined as a nonconversion to total hip arthroplasty. Outcomes present in 3 or more studies underwent further statistical analysis with forest plots. Heterogeneity of studies was evaluated using the I^2 statistic.

Results: Five studies were reviewed, including 359 revision hip arthroscopies (335 with complete follow-up) with a follow-up that ranged from 2.2 to 5.2 years. Four studies reported on outcomes after revision labral reconstruction and 1 study reported on labral augmentation. Two out of 5 included studies evaluated for statistical significance between preoperative and postoperative outcomes. Three out of 5 studies reported a rate of at least 70% for achieving minimal clinically important difference in at least 1 PRO. At minimum 2-year follow-up, survivorship ranged from 93.5% to 100%.

Conclusion: Patients that underwent revision hip arthroscopy with labral reconstruction or augmentation demonstrated improvement in PROs with mixed rates of achieving clinical benefit and rates of survivorship at minimum 2-year follow-up ranging from 93.5% to 100%.

Level of Evidence: Level IV, systematic review of level III to IV studies.

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 33, issue 6

No Lower Extremity Abstracts

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 32, Issue 6

Good clinical outcomes of anterior cruciate ligament reconstruction in patients over 60 years of age

Z. Cao, C. Wang

DOI: https://doi.org/10.1002/ksa.12148

Purpose: To evaluate the clinical outcomes following arthroscopic anterior cruciate ligament (ACL) reconstruction (ACLR) in patients over 60 years and to investigate the potential impact of preoperative osteoarthritis (OA) on these outcomes.

Methods: A retrospective study included ACL-injured patients over 60 years who underwent primary arthroscopic ACLR between 2010 and 2020. The Lysholm score and the International Knee Documentation Committee (IKDC) score were assessed preoperatively and at the final follow-up. The Tegner activity scale was performed to evaluate patients' activity levels. Data on return to sports, patient satisfaction, subsequent injuries and complications were collected. Preoperative radiographs were used to grade OA according to the Kellgrene–Lawrence classification. Correlation analysis between OA and clinical outcomes was performed. The rates of achieving the minimal clinically significant difference and patient-acceptable symptoms state were documented.

Results: A total of 37 patients were included in this study. The mean age at surgery was 62.3 ± 2.3 years, with a mean follow-up of 6.3 ± 3.2 years (range: 2.1–12.4). Patients showed statistically significant (all $p < 0.001$) improvements in the mean IKDC (38.9 ± 9.4–66.8 ± 12.5), Lysholm (48.8 ± 15.4–83.0 ± 12.8) and Tegner (1–3) scores. Fourteen patients (37.8%) returned to sports. No correlation was observed between the degree of preoperative OA and clinical outcomes (n.s.).

Conclusion: Patients over 60 years with symptomatic ACL-deficient knees could benefit from ACLR, even when mild to moderate OA is present preoperatively.

Level of Evidence: Level IV.

BACK

Ambulatory knee arthroscopic surgery yields cost savings and improved health outcomes

P. Luksameesate, R. Watcharopas

DOI: https://doi.org/10.1002/ksa.12157

Purpose: This study measured the health-related quality of life (HRQoL) and costs and conducted a cost–utility analysis and budget impact analysis of ambulatory knee arthroscopic surgery compared with inpatient knee arthroscopic surgery in Thailand from a societal perspective.

Methods: Health outcomes were measured in units of quality-adjusted life year (QALY) based on the Thai version of the EQ-5D-5L Health Questionnaire, and costs were obtained from an electronic database at a tertiary care hospital (Ramathibodi Hospital). A cost–utility analysis was performed to evaluate ambulatory and inpatient surgery using the societal perspective and a 2-week time horizon. The incremental cost-effectiveness ratio was applied to examine the costs and QALYs. One-way sensitivity analysis was used to investigate the robustness of the model. Budget impact analysis was performed considering over 5 years.

Results: A total of 161 knee arthroscopic patients were included and divided into two groups: ambulatory surgery (58 patients) and inpatient surgery (103 patients). The total cost of the inpatient surgery was 2235 United States dollars (USD), while the ambulatory surgery cost was 2002 USD. The QALYs of inpatient surgery and ambulatory surgery were 0.79 and 0.81, respectively, resulting in the ambulatory surgery becoming a dominant strategy (cost reduction of 233 USD with an increase of 0.02 QALY) over the inpatient surgery. The ambulatory surgery led to net savings of 4.5 million USD over 5 years. Medical supply costs are one of the most influential factors affecting the change in results.

Conclusion: Ambulatory knee arthroscopic surgery emerged as a cost-saving strategy over inpatient surgery, driven by lower treatment costs and enhanced HRQoL. Budget impact analysis indicated net savings over 5 years, supporting the feasibility of adopting ambulatory knee arthroscopic surgery. Our findings were advocated for its application across diverse hospitals and informed policymakers to improve reimbursement systems in low- to middle-income countries and Thailand.

Level of Evidence: Level IV.

BACK

Influence of female sex and double-quadruple semitendinosus-gracilis graft on the incidence of postoperative symptomatic cyclops lesions after ACL reconstruction

T. Arens, N. van Melick

DOI: https://doi.org/10.1002/ksa.12142

Purpose: Risk factors for the development of symptomatic cyclops lesion after anterior cruciate ligament reconstruction (ACLR) surgery are not entirely identified yet. This study aimed to investigate whether the choice of hamstring graft (semitendinosus-gracilis; STG vs. semitendinosus; ST) affects the risk of developing a symptomatic cyclops lesion after ACLR.

Methods: This retrospective cohort study included 1416 patients receiving either an ST graft (n = 1209) or an STG graft (n = 207) ACLR with a follow-up of at least 2 years. A persisting extension limitation was clinically determined, and cyclops lesions were confirmed by magnetic resonance imaging (MRI) and second-look arthroscopy. Graft-specific incidence of cyclops lesions was examined with $\chi 2$ test and combined with the factors number of graft bundles, graft diameter and sex evaluated with a binominal logistic regression model.

Results: In total, 46 patients developed symptomatic cyclops lesions (3.2%), with 36 having ACLR with an ST graft (3.0%) and 10 with an STG graft (4.8%) (n.s). The mean time from ACLR to the second-look arthroscopy for cyclops removal was 1.1 ± 0.6 years. Female patients were 2.5 times more likely to develop a cyclops lesion than male patients. Patients with an STG graft and larger graft diameters did not have a higher risk of developing cyclops lesions. Patients who received an STG graft with both tendons folded four times (double-quadruple) had significantly higher risk of developing a cyclops compared with all other numbers of graft bundles combined (8.3%, respectively 3.0%; p = 0.014).

Conclusion: This study could not prove an increased risk of developing a symptomatic cyclops lesion for patients with an STG graft compared with an ST graft used for ACLR. However, patients with a double-quadruple ACLR had a higher percentage of cyclops lesions compared with all other numbers of graft bundles. Female sex was associated with an increased risk of developing cyclops lesions.

Level of Evidence: Level III.

BACK

Seven percent of primary anterior crucial ligament reconstruction patients have arthroscopic resection of cyclops lesions within 2 years: A cohort study of 2556 patients

L.L. Miller, M. Lind

DOI: https://doi.org/10.1002/ksa.12165

Purpose: After anterior cruciate ligament reconstruction (ACL-R), a localised scar tissue called cyclops lesion may develop anterior to the graft causing knee extension deficits, pain, oedema, clicking and reduced knee function. This study determined the incidence of arthroscopic resection of a cyclops lesion within 2 years after ACL-R and investigated the associations of patient characteristics and surgical techniques with the need for arthroscopic resection of a cyclops lesion.

Methods: This study included patients who underwent primary ACL-R with adult surgical technique from 2005 to 2019 at Aarhus University Hospital, Denmark. The cohort was identified in a national registry. To identify patients who had resected a cyclops lesion within the first 2 years after ACL-R, patients' surgical records were reviewed.

Results: In 2005–2019, 2556 patients underwent primary ACL-R; 176 developed cyclops lesions that were resected within 2 years, equivalent to an incidence of 6.9% (95% confidence interval [CI]: 5.9–7.9). When stratified by the femoral drilling technique used, this incidence was 8.9% (95% CI: 7.7–10.3) with the anteromedial technique and 1.9% (95% CI: 1.0–3.1) with the transtibial technique. The incidence was 8.5% (95% CI: 6.8–10.3) in women and 5.7% (95% CI: 4.6–7.1) in men. Age, graft choice and the presence of cartilage or meniscal lesions did not affect the incidence.

Conclusion: The overall incidence of a cyclops lesion removal within 2 years post-ACL-R was 6.9%. This was five times higher with the anteromedial femoral drilling technique than with the transtibial technique. Women had a 47% higher incidence of cyclops lesion removal than men. This is relevant for the surgeon when planning an ACL-R.

Level of Evidence: Level II.

BACK

Noninterportal capsulotomy of hip arthroscopy showed improved outcomes in borderline hip dysplasia: A retrospective study with minimum 2-year follow-up

Y. Liu, X. Liang

DOI: https://doi.org/10.1002/ksa.12205

Purpose: The present study aimed to evaluate the functional outcomes of hip arthroscopy using a noninterportal capsulotomy technique to address labral tears in patients with borderline hip dysplasia (BHD). Additionally, we also compared these outcomes with those of patients with BHD who underwent the standard repaired interportal capsulotomy (RIPC) arthroscopy.

Methods: Data from patients with BHD were retrieved from a database of patients who underwent arthroscopic hip surgery with noninterportal capsulotomy or RIPC to treat labral tears between January 2014 and December 2020. Data collected included both pre- and postoperative patient-reported outcomes (PROs).

Results: A total of 58 patients (noninterportal capsulotomy, n = 37; RIPC, n = 21) with a mean age of 30.9 ± 5.6 and 28.6 ± 5.5 years, respectively, met the inclusion criteria. All of the patients underwent a minimal 2-year follow-up. The mean lateral centre-edge angle was 23.3 ± 1.2° in the noninterportal capsulotomy group and 23.7 ± 1.0° in the RIPC group, with no significant difference. The PROs improved from the preoperative to the latest follow-up, with a $p < 0.001$. There were no differences between the groups.

Conclusion: Using strict patient selection criteria, hip arthroscopy with noninterportal capsulotomy demonstrated significant pre- to postoperative improvements in patients with BHD and achieved results comparable to those from hip arthroscopy with RIPC.

Level of Evidence: Level III.

BACK

All-inside endoscopic semiautomatic running locked stitch technique shows favourable outcomes for acute Achilles tendon ruptures

S. Wei, Q. Li

DOI: https://doi.org/10.1002/ksa.12177

Purpose: The safety and reliability of endoscopic Achilles tendon rupture repair are still concerning aspects. This study's aim is to evaluate an all-inside endoscopic semiautomatic running locked stitch (Endo-SARLS) technique.

Methods: Forty cases with acute Achilles tendon rupture were treated with the all-inside Endo-SARLS technique between 2020 and 2021. Under endoscopic control, the proximal tendon stumps were stitched with the running locked method using a semiautomatic flexible suture passer. The threads of the high-strength suture were grasped through the paratenon subspace and then fixed into calcaneal insertion with a knotless anchor. Magnetic resonance imaging (MRI), surgical time and complications were assessed. Achilles Tendon Total Rupture Score (ATRS), Achilles Tendon Resting Angle (ATRA) and Heel Rise Height Scale (HRHS) were utilised to evaluate final outcomes.

Results: The average follow-up time was 25.4 ± 0.4 (range: 24–32) months. Appropriate tendon regeneration was observed on MRI after 12 months. At the final follow-up, the median value of ATRS score was 95 (interquartile range: 94, 98). Furthermore, there is no significant difference between the injured and contralateral side in the average ATRA (18.2 ± 1.8 vs. 18.3 ± 1.9°, ns) and median value of HRHS [14.5 (13.3, 15.5) vs. 14.8 (13.5, 15.6) cm, ns]. No infection and nerve injuries were encountered. Thirty-nine patients reported that they resumed casual sports activity after 6 months. One patient had a slight anchor cut-out, due to an addition injury, which was removed after 5 months.

Conclusions: An all-inside Endo-SARLS technique showed promising clinical results for acute Achilles tendon ruptures. This procedure reduces the risk of sural nerve injuries while establishing a reliable connection between the tendon stumps.

Level of Evidence: Level IV.

BACK

Both arthroscopic one-step Broström–Gould and Lasso-loop stitch techniques achieved favourable clinical outcomes for chronic lateral ankle instability

Z-F. Liu, T. Su

DOI: https://doi.org/10.1002/ksa.12167

Purpose: Both the arthroscopic Broström–Gould and Lasso-loop stitch techniques are commonly used to treat chronic lateral ankle instability (CLAI). The purpose of this study is to introduce an arthroscopic one-step outside-in Broström–Gould (AOBG) technique and compare the mid-term outcomes of the AOBG technique and Lasso-loop stitch technique.

Methods: All CLAI patients who underwent arthroscopic lateral ankle stabilization surgery in our department from 2018 to 2019 were retrospectively enrolled. The patients were divided into two groups according to the surgical methods employed: the AOBG technique (Group A) and the Lasso-loop technique (Group B). The visual analogue scale pain score, American Orthopaedic Foot and Ankle Society ankle hindfoot score, Tegner activity score and Karlsson–Peterson score were evaluated preoperatively and during the follow-up from June to December 2022. The surgical duration, return to sports, sprain recurrence and surgical complications were also recorded and compared.

Results: A total of 74 patients (Group A, n = 42; Group B, n = 32) were included in this study with a mean follow-up of 39 months. No statistically significant differences were observed in demographic parameters or follow-up time between the two groups. Postoperative clinical scores indicated a significant improvement (all with $p < 0.001$) with no significant difference between the two groups (not significant [n.s.]). There was no significant difference in the surgical duration (46.1 vs. 49.7 min, n.s.), return to sports (92.9% vs. 93.8%, n.s.), or sprain recurrence (4.8% vs. 6.3%, n.s.). Only two cases in Group A reported knot irritation (4.8% vs. 0, n.s.), and one case in Group A experienced local skin numbness (0 vs. 3.1%, n.s.), with no significant difference.

Conclusion: Both the AOBG and Lasso-loop stitch techniques yielded comparable favourable mid-term outcomes and return to sports with a low rate of surgical complications. Both procedures could be feasible strategies for CLAI patients.

Level of Evidence: Level III.

BACK

American Journal of Sports Medicine (AJSM), Volume 52, Issue 7

Association Between Symptoms of Anxiety and Depression, Hip Pathology, and Patient-Reported Outcomes After Hip Arthroscopy for Femoroacetabular Impingement

Q. Steiner, A.M. Watson

DOI: https://doi.org/10.1177/03635465241252821

Background: xxx In patients with femoroacetabular impingement (FAI), mental health has been implicated in both symptom severity and postoperative outcomes. However, there are limited data regarding the independent influences of baseline mental health and hip pathology on patient-reported outcomes over time after hip arthroscopy.

Purpose: To evaluate the association between mental health and structural hip pathology with pain, hip function, and quality of life (QOL).

Study Design: Cohort study; Level of evidence, 3.

Methods: Patient records from a single surgeon's hip outcomes registry were retrospectively reviewed. Mental health was evaluated using the Patient-Reported Outcomes Measurement Information System Anxiety and Depression scores. Pain was evaluated with the Single Assessment Numeric Evaluation score for Activities of Daily Living (SANE-ADL), while hip-related QOL was evaluated with the 12-item International Hip Outcome Tool (iHOT-12). Hip function was assessed with the Hip Outcome Score (HOS) Sport-Specific (SS) and ADL subscales. Separate mixed models were used to predict pain, QOL, and hip function, including hip pathology measures (size of labral tear, grade of chondral damage, preoperative alpha angle), anxiety, depression, and time as fixed effects and individuals as a random effect.

Results: A total of 312 patients were included in this study. The preoperative alpha angle, degree of intraoperative cartilage damage, and size of the labral tear were not associated with pain or QOL ($P > .05$ for all). However, higher levels of anxiety and depression were significantly associated with lower SANE-ADL scores (estimate ± SE) (anxiety: –0.59 ± 0.07, $P < .0001$; depression: –0.64 ± 0.08, $P < .0001$), iHOT-12 scores (anxiety: –0.72 ± 0.07, $P < .0001$; depression: –0.72 ± 0.08, $P < .0001$), HOS-SS scores (anxiety: –0.68 ± 0.09, $P < .0001$; depression: –0.57 ± 0.10, $P < .0001$), and HOS-ADL scores (anxiety: –0.43 ± 0.05, $P < .0001$; depression: –0.43 ± 0.06, $P < .0001$).

Conclusion: Patients had similar improvements in pain scores, QOL, and hip function after hip arthroscopy for FAI irrespective of their degree of hip pathology. Additionally, preoperative symptoms of anxiety and depression symptoms were associated with greater pain, decreased QOL, and worse hip function both pre- and postoperatively, independent of the degree of hip pathology. This suggests that efforts to directly address symptoms of anxiety and depression may improve outcomes after hip arthroscopy.

BACK

Effect of Spinopelvic Parameters on Outcomes After Hip Arthroscopy for Femoroacetabular Impingement Syndrome

C.A. Colasanti, D.S. Shankar

DOI: https://doi.org/10.1177/03635465241248447

Background: Spinopelvic parameters, including pelvic tilt (PT), sacral slope (SS), and pelvic incidence, have been developed to characterize the relationship between lumbar spine and hip motion, but a paucity of literature is available characterizing differences in spinopelvic parameters among patients with femoroacetabular impingement syndrome (FAIS) versus patients without FAIS, as well as the effect of these parameters on outcomes of arthroscopic treatment of FAIS.

Purpose: To (1) identify differences in spinopelvic parameters between patients with FAIS versus controls without FAIS; (2) identify associations between spinopelvic parameters and preoperative patient-reported outcomes (PROs); and (3) identify differences in PROs between patients with stiff spines (standing-sitting ΔSS ≤10°) versus those without.

Study Design: Cohort study; Level of evidence, 2.

Methods: The study enrolled patients ≥18 years of age who underwent primary hip arthroscopy for treatment of FAIS with cam, pincer, or mixed (cam and pincer) morphology. Participants underwent preoperative standing-sitting imaging with a low-dose 3-dimensional radiography system and were matched on age and body mass index (BMI) to controls without FAIS who also underwent EOS imaging. Spinopelvic parameters measured on EOS films were compared between the FAIS and control groups. Patients with FAIS completed the modified Harris Hip Score (mHHS) and Non-Arthritic Hip Score (NAHS) before surgery and at 1-year follow-up. Outcome scores were compared between patients with stiff spines versus those without. Associations between spinopelvic parameters and baseline outcome scores were assessed with Pearson correlations. Continuous variables were compared with Student t test and/or Mann-Whitney U test, and categorical variables were compared with Fisher exact test.

Results: A total of 50 patients with FAIS (26 men; 24 women; mean age, 36.1 ± 10.7 years; mean BMI, 25.6 ± 4.2) were matched to 30 controls without FAIS (13 men; 17 women; mean age, 36.6 ± 9.5 years; mean BMI, 26.7 ± 3.6). Age, sex, and BMI were not significantly different between the FAIS and control groups ($P > .05$). Standing PT was not significantly different between stiff and non-stiff cohorts ($P = .73$), but sitting PT in the FAIS group was more than double that of the control group (36.5° vs 15.0°; $P < .001$). Incidence of stiff spine was significantly higher in the FAIS group (62.0% vs 3.3%; $P < .001$). Among FAIS patients, those with stiff spines had a significantly higher prevalence of cam impingement, whereas those with non–stiff spines had a higher prevalence of mixed impingement ($P = .04$). No significant differences were seen in preoperative mHHS or NAHS scores or pre- to postoperative improvement in scores between FAIS patients with stiff spines versus those without ($P > .05$), but a greater sitting SS was found to be positively correlated with a higher baseline mHHS ($r = 0.36$; $P = .02$).

Conclusion: Patients with FAIS were more likely to have a stiff spine (standing-sitting ΔSS ≤10°) compared with control participants without FAIS. FAIS patients with stiff spines were more likely to have isolated cam morphology than patient without stiff spines. Although sitting SS was positively correlated with baseline mHHS, no significant differences were seen in 1-year postoperative outcomes between FAIS patients with versus without stiff spine.

BACK

Outcome Scores and Survivorship of Patients Undergoing Primary Hip Arthroscopy With Borderline Hip Dysplasia: A Propensity-Matched Study With Minimum 10-Year Follow-up

R.S. Chapman, S. Allahabadi

DOI: https://doi.org/10.1177/03635465241247287

Background: Patients with borderline hip dysplasia (BHD) and concomitant femoroacetabular impingement syndrome (FAIS) have demonstrated similar outcomes at short- and midterm follow-up compared with equivalent patients without dysplasia. However, comparisons between these groups at long-term follow-up have yet to be investigated.

Purpose: To compare long-term clinical outcomes between patients with BHD undergoing primary hip arthroscopy for FAIS versus matched control patients without BHD.

Study Design: Cohort study; Level of evidence, 2.

Methods: A retrospective cohort study was conducted on patients with BHD (lateral center-edge angle, 18°-25°) who underwent hip arthroscopy for FAIS between January 2012 and February 2013. Patients were propensity matched in a 1:3 ratio by age, sex, and body mass index to control patients without BHD who underwent primary hip arthroscopy. Groups were compared in terms of patient-reported outcomes (PROs) preoperatively and at 10 years postoperatively, including the Hip Outcome Score Activities of Daily Living subscale (HOS-ADL) and Sports subscale (HOS-SS), modified Harris Hip Score, 12-item International Hip Outcome Tool, visual analog scale (VAS) for pain and satisfaction. Achievement rates for minimal clinically important difference (MCID) and Patient Acceptable Symptom State (PASS) were compared between groups. Kaplan-Meier survivorship curves were assessed between groups.

Results: At a mean follow-up of 10.3 ± 0.3 years, 28 patients with BHD (20 women; age, 30.8 ± 10.8 years) were matched to 84 controls who underwent primary hip arthroscopy. Both groups significantly improved from preoperative assessment in all PRO measures at 10 years ($P < .001$ for all). PRO scores were similar between groups, aside from HOS-SS (BHD, 62.9 ± 31.9 vs controls, 80.1 ± 26.0; $P = .030$). Rates of MCID achievement were similar between groups for all PROs (HOS-ADL: BHD, 76.2% vs controls, 67.9%, $P = .580$; HOS-SS: BHD, 63.2% vs controls, 69.4%, $P = .773$; modified Harris Hip Score: BHD, 76.5% vs controls, 67.9%, $P = .561$; VAS pain: BHD, 75.0% vs controls, 91.7%, $P = .110$). Rates of PASS achievement were significantly lower in the BHD group for HOS-ADL (BHD, 39.1% vs controls, 77.4%; $P = .002$), HOS-SS (BHD, 45.5% vs controls, 84.7%; $P = .001$), and VAS pain (BHD, 50.0% vs controls, 78.5%; $P = .015$). No significant difference was found in the rate of subsequent reoperation on the index hip between groups. Kaplan-Meier survival analysis demonstrated comparable survivorship at long-term follow-up ($P = .645$).

Conclusion: After primary hip arthroscopy, patients with BHD in the setting of FAIS had significantly improved PRO scores at 10-year follow-up, comparable with propensity-matched controls without BHD. Rates of MCID achievement were similar between groups, although patients with BHD had lower rates of PASS achievement. Patients with BHD had similar long-term hip arthroscopy survivorship compared with controls, with no significant difference in rates of revision hip arthroscopy or conversion to total hip arthroplasty.

BACK

Modified Mason-Allen vs Two Simple Stitch Fixation for Medial Meniscus Posterior Root Tears: A Systematic Review and Meta-analysis

K. Boksh, A. Martins

DOI: https://doi.org/10.1177/03635465231190650

Background: Various suture configurations are available for medial meniscus posterior root tear (MMPRT) repair. The modified Mason-Allen (MMA) technique has been proposed as a refixation technique for MMPRT instead of the conventional 2 simple stitches (TSS). This is in view of its superior biomechanical characteristics.

Purpose: To perform a systematic review and meta-analysis to compare MMA and TSS configuration techniques for MMPRT repair and identify any differences between the 2 techniques in terms of clinical outcomes, medial meniscal extrusion (MME), and postoperative healing.

Study Design: Meta-analysis; Level of evidence, 4.

Methods: The Cochrane Controlled Register of Trials, PubMed, Medline, and Embase databases were used to perform a systematic review and meta-analysis using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) criteria with the following search terms: (“meniscus” OR “meniscal injuries”) AND (“Mason-Allen” OR “simple stitch” OR “suture techniques”). Data pertaining to all patient-reported outcome measures, postoperative complications, MME, postoperative healing, cartilage degeneration, and progression of knee osteoarthritis were extracted from each study. The pooled outcome data were analyzed using random- and fixed-effects models.

Results: After abstract and full-text screening, 6 clinical studies were included. In total, there were 291 patients; 160 underwent MMA fixation, and 131 underwent the TSS technique. The majority of studies had similar surgical techniques regarding repair technique, suture material, tibial fixation, and number and position of tibial tunnels. There were no differences between the groups in terms of patient-reported outcome measures at 14.2 months. Both techniques were also similar in the degree of postoperative MME and meniscal healing.

Conclusion: Both suture configurations were equivalent in terms of clinical outcomes, the extent of meniscal extrusion, and postoperative healing. The TSS technique may offer advantages in terms of faster learning curve and shorter operative time. However, randomized controlled trials with large sample sizes, longer follow-up and assessment of chondral degeneration, and presence of knee osteoarthritis are required to assess whether a true difference exists, as the majority of included studies were limited by their retrospective design.

BACK

Acute Anterior Cruciate Ligament Reconstruction Performed Within 10 Days of Injury Does Not Increase Risk of Postoperative Arthrofibrosis: A Systematic Review and Meta-analysis

Z.S. Aman, O.K. Blaber

DOI: https://doi.org/10.1177/03635465231192987

Background: The optimal timing of anterior cruciate ligament (ACL) reconstruction (ACLR) remains a controversial topic. Previous reviews have demonstrated that there are no differences between early and delayed ACLR; however, these studies have been limited by heterogeneous definitions of acute ACL injury.

Purpose: To evaluate postoperative patient functional outcomes and risk for arthrofibrosis after acute arthroscopic ACLR performed ≤10 days after injury.

Study Design: Systematic review; Level of evidence, 4.

Methods: A systematic review was performed according to PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines using multiple medical databases. Inclusion criteria were studies that evaluated postoperative range of motion outcomes for patients undergoing ACLR ≤10 days after initial ACL injury. For included comparative studies comparing patient groups undergoing ACLR ≤10 days and patients undergoing "delayed" ACLR after ≥3 weeks of initial injury, quantitative analysis was performed to assess for differences in postoperative arthrofibrosis, reoperation rates, and patient-reported outcomes between groups. DerSimonian-Laird binary random-effects models were constructed to quantitatively describe the association between the ACLR time period and patient outcomes by generating effect estimates in the form of odds ratios with 95% CIs. Qualitative analysis was performed to describe variably reported patient outcomes and the risk of arthrofibrosis after ACLR for noncomparative studies.

Results: Screening yielded 6 full-text articles with 448 patients who underwent ACLR (296 ACLR <10 days, 152 ACLR >3 weeks), with a pooled mean age of 28.1 years. For studies amenable to quantitative analysis, there were no significant differences between ACLR performed ≤10 days and ACLR performed at the 3-week point or after in terms of postoperative stiffness (3 studies; odds ratio, 1.27; P = .508), Tegner scores (2 studies; mean difference, –0.056; P = .155), or reoperation for stiffness (3 studies; odds ratio, 0.869; P = .462). The overall incidence of postoperative arthrofibrosis after 12 months of follow-up was 11 of 296 (3.7%) for ACLRs performed ≤10 days versus 6 of 152 (3.9%) for those performed at the 3-week point or after.

Conclusion: ACLR performed ≤10 days after the inciting injury does not increase the risk of postoperative arthrofibrosis and demonstrates similar patient-reported outcomes compared with ACLR performed at the 3-week point or after.

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 106, Issue 13+14

No Lower Extremity Abstracts

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 482, Issue 6

No Lower Extremity Abstracts

BACK

Bone and Joint Journal (BJJ), Volume 106-B, issue 6

No Lower Extremity Abstracts

BACK

Miscellaneous

Arthroscopy, Volume 40, Issue 6

No Miscellaneous Abstracts

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 33, issue 6

No Miscellaneous Abstracts

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 32, Issue 6

No Miscellaneous Abstracts

BACK

American Journal of Sports Medicine (AJSM), Volume 52, Issue 7

No Miscellaneous Abstracts

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 106, Issue 13+14

No Miscellaneous Abstracts

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 482, Issue 6

No Miscellaneous Abstracts

BACK

Bone and Joint Journal (BJJ), Volume 106-B, issue 6

No Miscellaneous Abstracts

BACK