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BACK

Content
September

Upper Extremity

Arthroscopy
Volume 39, issue 10

- Extreme Medialized Repair for Challenging Large and Massive Rotator Cuff Tears Reveals Healing and Significant Functional Improvement
- Improved Yet Varied Clinical Outcomes Observed With Comparison of Arthroscopic Superior Capsular Reconstruction Versus Arthroscopy-Assisted Lower Trapezius Transfer for Patients With Irreparable Rotator Cuff Tears

Journal of Shoulder and Elbow Surgery (JSES)
Volume 32, issue 10

- Factors associated with healing failure after early repair of acute, trauma-related rotator cuff tears
- Massive rotator cuff tears with short tendon length can be successfully repaired using synthetic patch augmentation
- Risk factors for 30-day readmission following shoulder arthroscopy: a systematic review
- Outcomes of subacromial balloon spacer implantation for irreparable rotator cuff tears: a systematic review and meta-analysis

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 31, Issue 10

- Superior capsular reconstruction using the long head of the biceps to treat massive rotator cuff tears improves patients shoulder pain, mobility and function
- The arthroscopic treatment of anterior shoulder instability with glenoid bone loss shows similar clinical results after Latarjet procedure and iliac crest autograft transfer
- Similar outcomes between transtendon repair and tear completion repair techniques for partial articular-sided supraspinatus tendon avulsion lesions: a systematic review and meta-analysis

American Journal of Sports Medicine (AJSM)
Volume 51, Issue 12

- Arthroscopic Remplissage Combined With Bankart Repair Results in a Higher Rate of Return to Sport in Athletes Compared With Bankart Repair Alone or the Latarjet Procedure: A Systematic Review and Meta-analysis

Journal of Bone and Joint Surgery (JBJS)
Volume 105, Issue 19+20

- No Upper Extremity Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 481, Issue 10

- No Upper Extremity Abstracts

Bone and Joint Journal (BJJ)
Volume 105-B, issue 10

- No Upper Extremity Abstracts

Lower Extremity

Arthroscopy
Volume 39, issue 10

BACK

- Concomitant Subchondral Bone Cysts Negatively Affect Clinical Outcomes Following Arthroscopic Bone Marrow Stimulation for Osteochondral Lesions of the Talus
- Outcomes After Hip Arthroscopy Show No Differences Between Sexes: A Systematic Review

Journal of Shoulder and Elbow Surgery (JSES)
Volume 32, issue 10

- No Lower Extremity Abstracts

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 31, Issue 10

- Poorer patient-reported outcome and increased risk of revision at a 5-year follow-up among patients with septic arthritis following anterior cruciate ligament reconstruction: a register-based cohort study of 23,075 primary anterior cruciate ligament reconstructions
- Low early complication rates after arthroscopic meniscus repair and meniscectomy
- Bone bridge technique for lateral meniscal allograft transplantation: no difference in clinical outcome compared to the soft tissue technique
- Outside-in repair technique is effective in traumatic tears of the meniscus in active adults: a systematic review
- Technology-assisted anterior cruciate ligament reconstruction improves tunnel placement but leads to no change in clinical outcomes: a systematic review and meta-analysis
- Surgical techniques for medial Patellofemoral ligament reconstruction: a systematic review and meta-analysis of level I and II studies
- Superior outcomes after arthroscopic treatment of femoroacetabular impingement and labral tears with closed versus open capsule
- Patients aged 50–75 years take longer to achieve the patient acceptable symptom state than patients aged 20–34 years following primary hip arthroscopy for femoroacetabular impingement syndrome
- Ability to return to sports after early lateral ligament repair of the ankle in 147 elite athletes

American Journal of Sports Medicine (AJSM)
Volume 51, Issue 12

- Arthroscopic Lysis of Adhesions for Arthrofibrosis After Anterior Cruciate Ligament Reconstruction

Journal of Bone and Joint Surgery (JBJS)
Volume 105, Issue 19+20

- No Lower Extremity Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 481, Issue 10

- No Lower Extremity Abstracts

Bone and Joint Journal (BJJ)
Volume 105-B, issue 10

- No Lower Extremity Abstracts

Miscellaneous
Arthroscopy
Volume 39, issue 10

- No Miscellaneous Abstracts

Journal of Shoulder and Elbow Surgery (JSES)
Volume 32, issue 10

- No Miscellaneous Abstracts

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA)
Volume 31, Issue 10

- The number of arthroscopies performed by trainees does not deduce the level of their arthroscopic proficiency

American Journal of Sports Medicine (AJSM)
Volume 51, Issue 12

- No Miscellaneous Abstracts

Journal of Bone and Joint Surgery (JBJS)
Volume 105, Issue 19+20

- No Miscellaneous Abstracts

Clinical Orthopaedics and Related Research (CORR)
Volume 481, Issue 10

- No Miscellaneous Abstracts

Bone and Joint Journal (BJJ)
Volume 105-B, issue 10

- No Miscellaneous Abstracts

BACK

Upper extremity

Arthroscopy, Volume 39, Issue 10

Extreme Medialized Repair for Challenging Large and Massive Rotator Cuff Tears Reveals Healing and Significant Functional Improvement

Y. Mizuki, T. Senjyu

DOI: https://doi.org/10.1016/j.arthro.2023.03.030

Purpose: To evaluate range of motion, muscle strength, clinical outcomes, and radiographic results of the extreme medialized procedure on rotator cuff tears that were initially irreparable.

Methods: From arthroscopic rotator cuff repair cases performed at our institution (June 2017 and August 2020), we retrospectively reviewed cases in which the rotator cuff was (1) unable to be withdrawn to the greater tuberosity, (2) repaired using the extreme medialized procedure, and (3) followed up for a minimum of 2 years. Patients with a history of previous surgery were excluded. Preoperative and postoperative scores were used for clinical evaluation. Imaging evaluation used 2-year postoperative magnetic resonance (MR) images.

Results: Sixty-four patients met the criteria; mean age 68.2 ± 7.9 (range 51–82) years; mean follow-up period 26 ± 2 (24-37) months. Tear size: 45 ± 7.1 (30-70) mm in medial to lateral diameters, 40 ± 9.3 (30-60) mm in anteroposterior diameter; suture anchor number: 5.5 ± 1.2 (4-8). The visual analog scale score (50.7 to 11.8), the University of California, Los Angeles, score (12 to 31), constant score (45 to 31), and the American Shoulder and Elbow Surgeons score (53 to 31) at the final follow-up improved compared with preoperative values (all $P < .0001$). Preoperative and postoperative changes in range of motion also showed improvement in anterior elevation (107° to 151°, $P < .0001$), abduction (100° to 154°, $P < .0001$), external rotation (41° to 47°, $P = .0238$), and internal rotation (L1 to Th10, $P < .0001$). Muscle strength was also improved in abduction (from 1.9 kg to 5.0 kg, $P < .0001$) and external rotation (from 3.5 kg to 7.7 kg, $P < .0001$). MR imaging evaluation revealed 2 cases (3.1%) of retears that fell into type 4 Sugaya classification.

Conclusions: Extremely medialized repair of large and massive tears not able to be repaired using conventional techniques led to improved clinical outcomes compared to preoperative conditions.

Level of evidence: Level IV, therapeutic case series.

BACK

Improved Yet Varied Clinical Outcomes Observed With Comparison of Arthroscopic Superior Capsular Reconstruction Versus Arthroscopy-Assisted Lower Trapezius Transfer for Patients With Irreparable Rotator Cuff Tears

E.M. Marigi, J.R. Jackowski

DOI: https://doi.org/10.1016/j.arthro.2023.04.012

Purpose: To evaluate the outcomes of arthroscopic superior capsular reconstruction (SCR) and arthroscopy-assisted lower trapezius tendon transfer (LTT) for posterosuperior irreparable rotator cuff tears (IRCTs).

Methods: Over an almost 6-year period (October 2015 to March 2021), all patients who underwent IRCT surgery with a minimum 12-month follow-up period were identified. For patients with a substantial active external rotation (ER) deficit or lag sign, LTT was preferentially selected. Patient-reported outcome scores included the visual analog scale (VAS) pain score, strength score, American Shoulder and Elbow Surgeons Standardized Shoulder Assessment Form (ASES) score, Single Assessment Numeric Evaluation (SANE) score, and Quick Disabilities of the Arm, Shoulder and Hand (QuickDASH) score.

Results: We included 32 SCR patients and 72 LTT patients. Preoperatively, LTT patients had more advanced teres minor fatty infiltration (0.3 vs 1.1, $P = .009$), a higher global fatty infiltration index (1.5 vs 1.9, $P = .035$), and a higher presence of the ER lag sign (15.6% vs 48.6%, $P < .001$). At a mean follow-up of 2.9 ± 1.3 years (range, 1.0-6.3 years), no differences in patient-reported outcome scores were observed. Postoperatively, SCR patients had a lower VAS score (0.3 vs 1.1, $P = .017$), higher forward elevation (FE) (156° vs 143°, $P = .004$), and higher FE strength (4.8 vs 4.5, $P = .005$) and showed greater improvements in the VAS score (6.8 vs 5.1, $P = .009$), FE (56° vs 31°, $P = .004$), and FE strength (1.0 vs 0.4, $P < .001$). LTT patients showed greater improvement in ER (17° vs 29°, $P = .026$). There was no statistically significant between-cohort difference in complication rate (9.4% vs 12.5%, $P = .645$) or reoperation rate (3.1% vs 10%, $P = .231$).

Conclusions: With adequate selection criteria, both SCR and LTT provided improved clinical outcomes for posterosuperior IRCTs. Additionally, SCR led to better pain relief and restoration of FE whereas LTT provided more reliable improvement in ER.

Level of Evidence: Level III, treatment study with retrospective cohort comparison.

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 32, issue 10

Factors associated with healing failure after early repair of acute, trauma-related rotator cuff tears

K.E. Aagaard, K. Lunsjö

DOI: https://doi.org/10.1016/j.jse.2023.03.027

Background: Healing failure after rotator cuff repair is a challenging problem. Acute, trauma-related tears are considered a separate entity and are often treated surgically. The aim of this study was to identify factors associated with healing failure in previously asymptomatic patients with trauma-related rotator cuff tears treated with early arthroscopic repair.

Methods: This study included 62 consecutively recruited patients (23% women; median age, 61 years; age range, 42-75 years) with acute symptoms in a previously asymptomatic shoulder and a magnetic resonance imaging–verified full-thickness rotator cuff tear after shoulder trauma. All patients were offered, and underwent, early arthroscopic repair, during which a biopsy specimen was harvested from the supraspinatus tendon and analyzed for signs of degeneration. Of the patients, 57 (92%) completed 1-year follow-up and underwent assessment of repair integrity on magnetic resonance images according to the Sugaya classification. Risk factors for healing failure were investigated using a causal-relation diagram where age, body mass index, tendon degeneration (Bonar score), diabetes mellitus, fatty infiltration (FI), sex, smoking, tear location regarding integrity of the rotator cable, and tear size (number of ruptured tendons and tendon retraction) were included and analyzed.

Results: Healing failure at 1 year was identified in 37% of patients (n = 21). A high degree of FI of the supraspinatus muscle (P = .01), a tear location including disruption of rotator cable integrity (P = .01), and old age (P = .03) were associated with healing failure. Tendon degeneration as determined by histopathology was not associated with healing failure at 1-year follow-up (P = .63).

Conclusion: Older age, increased FI of the supraspinatus muscle, and a tear including disruption of the rotator cable increased the risk of healing failure after early arthroscopic repair in patients with trauma-related full-thickness rotator cuff tears.

Level of evidence: Level I, prospective cohort design, prognosis study

BACK

Massive rotator cuff tears with short tendon length can be successfully repaired using synthetic patch augmentation

L.M. Dommer, A. Chlasta

DOI: https://doi.org/10.1016/j.jse.2023.03.037

Background: Choosing the optimal treatment for massive rotator cuff tears (MRCTs) still poses a surgical problem. In MRCTs with good muscle quality, but short tendon length, nonaugmented repairs lead to high failure rates of up to 90%. The aim of the study was to evaluate midterm clinical and radiologic outcomes of massive rotator cuff tears with good muscle quality, but short tendon length, which were repaired with synthetic patch augmentation.

Methods: A retrospective study of patients who underwent arthroscopic or open rotator cuff repairs with patch augmentation between 2016 and 2019 was performed. We included patients older than 18 years, who presented with an MRCT confirmed by an magnetic resonance imaging (MRI) arthrogram showing good muscle quality (Goutallier ≤ II) and short tendon length (length <15 mm). Constant-Murley score (CS), Subjective Shoulder Value (SSV), and range of motion (ROM) were compared pre- and postoperatively. We excluded patients older than 75 years or with presence of rotator cuff arthropathy Hamada stage ≥2a. Patients were followed up for 2 years minimum. Clinical failures were defined by reoperation, forward flexion <120° or a relative CS < 70. Structural integrity of the repair was assessed using an MRI scan. Comparison between different variables and outcomes was performed using Wilcoxon-Mann-Whitney and $\chi 2$ tests.

Results: Fifteen patients (mean age 57 years, 13 [86.7%] male, 9 [60%] right shoulders) were reevaluated with a mean follow-up of 43.8 months (27-55 months). There was a significant improvement in the absolute CS (from 33 to 81 points, P = .03), the relative CS (from 41% to 88%, P = .04), the SSV (from 31% to 93%, P = .007), and forward flexion (from 111° to 163°, P = .004) but not in external rotation (from 37° to 38°, P = .5). There were 3 clinical failures (1 atraumatic, 2 traumatic) with reoperations (2 reverse total shoulder arthroplasties and 1 refixation). Structurally, there were 3 Sugaya grade 4 and 5 Sugaya grade 5 reruptures resulting in a retear rate of 53%. The presence of a complete or partial rerupture was not associated with inferior outcomes compared with intact cuff repairs. There were no correlations between the grade of retraction, muscle quality, or rotator cuff tear configuration and rerupture or functional outcomes.

Conclusion: Patch augmented cuff repair leads to a significant improvement of functional and structural outcomes. Partial reruptures were not associated with inferior functional outcomes. Prospective randomized trials are needed to confirm the results found in our study.

Level of evidence: Level IV, case series, treatment study

BACK

Risk factors for 30-day readmission following shoulder arthroscopy: a systematic review

R. Sumbal, A. Sumbal

DOI: https://doi.org/10.1016/j.jse.2023.04.027

Background: Recently, there has been a rapid shift from open shoulder surgery to arthroscopic shoulder procedures for treating several shoulder pathologies. This shift is mainly due to reduced postoperative complications and 30-day readmission. Although the 30-day readmission rate is low, the risk still exists. One way to minimize the risk factors is to analyze all the risk factors contributing to the 30-day readmission following shoulder arthroscopy.

Methods: Electronic databases such as PubMed, Google Scholar, and Cochrane library were searched. Studies were selected based on predefined inclusion and exclusion criteria. Newcastle–Ottawa score was used for the quality assessment of individual studies. Two reviewers extracted data from the selected studies. Results were evaluated through narrative analysis and presented as an odds ratio with 95% confidence interval. A meta-analysis was not possible due to the heterogeneity in the available data.

Results: A total of 12 studies evaluating 494,038 patients were selected in our review. All the studies have a low risk of bias (median = 8). Significant factors predicting readmission included age, gender, COPD (chronic obstructive pulmonary disorder), steroid use, smoking, preoperative opioid use, higher American Society of Anesthesiologists (ASA) score (3 or higher), and general and regional anesthesia vs. regional anesthesia alone.

Conclusion: Through our systematic review, we tried to identify risk factors that can predict 30-day readmission following shoulder arthroscopy. These include age > 65 years, COPD, steroid use, opioid use, and OR time > 90 mins. These high-risk patients could be triaged earlier by identifying these parameters, and effective pre and post-operative surveillance could minimize 30-day readmission risk following shoulder arthroscopy.

Level of evidence: Level III, systematic review

BACK

Outcomes of subacromial balloon spacer implantation for irreparable rotator cuff tears: a systematic review and meta-analysis

A.N. Berk, W.M. Cregar

DOI: https://doi.org/10.1016/j.jse.2023.04.016

Background: The management of irreparable rotator cuff tears remains a topic of considerable debate among orthopedic surgeons. Currently, there is little consensus regarding the gold-standard treatment; however, an emerging option involves the use of a biodegradable subacromial spacer. The purpose of this study, therefore, was to systematically review and synthesize the current literature reporting on the clinical outcomes following implantation of a subacromial balloon spacer (SABS) for the treatment of patients with irreparable rotator cuff tears.

Methods: A systematic review of the PubMed Central, MEDLINE, Embase, Scopus, and Cochrane Library databases from inception through December 2022 was performed. Clinical outcome studies reporting on functional and clinical outcomes, as well as postoperative complications, were included.

Results: A total of 127 studies were initially identified, of which 28 were deemed eligible for inclusion in our review. Of these studies, 17 reported adequate preoperative and postoperative data (mean and a measure of variance) and thus were included in the meta-analysis. Among the included studies, a total of 894 shoulders (886 patients) were included; the mean age was 67.4 years (range, 61.7-76.2 years). The average follow-up period was 30.4 months (range, 12-56 months). All postoperative patient-reported outcomes improved significantly from baseline, including the Constant score (mean difference, 33.53; $P < .001$), American Shoulder and Elbow Surgeons score (mean difference, 40.38; $P < .001$), Oxford Shoulder Score (mean difference, 12.05; $P = .004$), and visual analog scale pain score or Numeric Pain Rating Scale score (mean difference, –3.79; $P < .001$). Forward elevation (mean difference, 24°; $P < .001$), abduction (mean difference, 52°; $P = .02$), and external rotation (mean difference, 15°; $P < .001$) improved. Device-related complications occurred at a rate of 3.6%, the most common of which were balloon migration (1.0%) and synovitis (0.6%). Ultimately, 5% of patients required salvage reverse shoulder arthroplasty.

Conclusion: Short-term outcomes suggest that SABS implantation can be a safe and effective treatment and appears to be associated with early improvements in postoperative pain and function. Clinical heterogeneity, use of concomitant procedures, and variations in patient selection limit our ability to conclusively interpret the available evidence. We do not yet know the potential therapeutic value of SABS implantation relative to other currently accepted treatment strategies, the length of symptomatic improvement that can be expected, or the long-term implications of SABS use on the outcomes of further salvage procedures.

Level of evidence: Level IV, systematic review

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 31, Issue 10

Superior capsular reconstruction using the long head of the biceps to treat massive rotator cuff tears improves patients shoulder pain, mobility and function

Q. Gae, Y. Qiao

DOI: https://doi.org/10.1007/s00167-023-07489-7

Purpose: Arthroscopic superior capsule reconstruction (SCR) with the long head of the biceps (LHBT) was performed to restore structural stability, force couple balance, and shoulder joint function. This study aimed to evaluate the functional outcomes of SCR using the LHBT over at least 24 months of follow-up.

Method: This retrospective study included 89 patients with massive rotator cuff tears who underwent SCR using the LHBT, met the inclusion criteria and underwent follow up for at least 24 months. The preoperative and postoperative shoulder range of motion (forward flexion, external rotation, and abduction), acromiohumeral interval (AHI), visual analog scale (VAS) score, American Shoulder and Elbow Surgeons (ASES) score and Constant–Murley score were obtained, and the tear size, and Goutallier and Hamada grades were also investigated.

Results: Compared with those measured preoperatively, the range of motion, AHI, and VAS, Constant–Murley, and ASES scores were significantly improved immediately postoperatively ($P < 0.001$) and at the 6-month, 12-month, and final follow-ups ($P < 0.001$). At the last follow-up, the postoperative ASES score and Constant-Murley score increased from 42.8 ± 7.6 to 87.4 ± 6.1, and 42.3 ± 8.9 to 84.9 ± 10.7, respectively; with improvements of 51 ± 21.7 in forward flexion, 21.0 ± 8.1 in external rotation, and 58.5 ± 22.5 in abduction. The AHI increased 2.1 ± 0.8 mm and the VAS score significantly changed from 6.0 (5.0, 7.0) to 1.0 (0.0, 1.0), at the final follow-up. Eleven of the 89 patients experienced retears, and one patient needed reoperation.

Conclusion: In this study with at least 24-months of follow-up, SCR using the LHBT for massive rotator cuff tears could effectively relieve shoulder pain, restore shoulder function and increase shoulder mobility to some extent.

Level of evidence: IV.

BACK

The arthroscopic treatment of anterior shoulder instability with glenoid bone loss shows similar clinical results after Latarjet procedure and iliac crest autograft transfer

B. Bockmann, W. Nebelung

DOI: https://doi.org/10.1007/s00167-023-07480-2

Purpose: Recurrent anterior shoulder instability caused by critical bone loss of the glenoid is a challenging condition for shoulder surgeons. The purpose of this prospective multicenter trial was to compare the arthroscopic transfer of the coracoid process (Latarjet procedure) with the arthroscopic reconstruction of the glenoid using iliac crest autografts.

Methods: A prospective multi-center trial was performed in nine orthopaedic centres in Austria, Germany and Switzerland between July 2015 and August 2021. Patients were prospectively enrolled and received either an arthroscopic Latarjet procedure or an arthroscopic iliac crest graft transfer. Standardized follow-up after 6 months and mimimum 24 months included range of motion, Western Ontario stability index (WOSI), Rowe score and subjective shoulder value (SSV). All complications were recorded.

Results: 177 patients (group Latarjet procedure: n = 110, group iliac crest graft: n = 67) were included in the study. WOSI (n.s.), SSV (n.s.) and Rowe score (n.s.) showed no difference at final follow-up. 10 complications were seen in group Latarjet procedure and 5 in group iliac crest graft; the frequency of complications did not differ between the two groups (n.s.).

Conclusion: The arthrosopic Latarjet procedure and arthroscopic iliac crest graft transfer lead to comparable results regarding clinical scores, frequency of recurrent dislocations and complication rates.

Level of evidence: Level II.

BACK

Similar outcomes between transtendon repair and tear completion repair techniques for partial articular-sided supraspinatus tendon avulsion lesions: a systematic review and meta-analysis

N. Thamrongskulsiri, D. Limskul

DOI: https://doi.org/10.1007/s00167-023-07502-z

Purpose: This study aimed to review studies comparing transtendon repair (TTR) with tear completion repair (TCR) techniques for partial articular-sided supraspinatus tendon avulsion (PASTA) lesions according to postoperative patient-reported outcomes and complications.

Methods: Databases, including PubMed, Embase, Scopus, and Cochrane, were searched for studies published between 2008 and 2022 that directly compared the postoperative patient-reported outcomes and complications of the TTR and TCR techniques for PASTA lesions. Odds ratios (ORs) were calculated for dichotomous outcomes, while mean differences (MDs) were calculated for continuous outcomes.

Results: A total of seven studies (497 shoulders) were analysed. No statistically significant differences in the postoperative clinical outcomes at the final follow-up were observed between the TTR and TCR techniques for PASTA lesions. The overall retear rates of the TTR and TCR techniques were 7.7% and 11.6%, respectively (corresponding healing rates were 92.3% and 88.4%), whereas the overall occurrence rates of adhesive capsulitis were 4.7% and 3.3%, respectively. Furthermore, no significant difference was observed in postoperative range of motion (forward flexion, MD = − 1.22, 95% confidence interval (95%CI) − 5.28 to 3.34, n.s.; external rotation, MD = − 1.39, 95% CI − 3.19 to 0.42, n.s.), overall retear rate (OR 0.72, 95% CI 0.29–1.08, n.s.), and occurrence rate of adhesive capsulitis (OR 1.11, 95% CI 0.35–3.52, n.s.) between the two techniques.

Conclusion: Both techniques improve clinical outcomes while having a low complication rate and a high rate of healing. No significant difference in clinical outcomes was observed between the two techniques.

Level of evidence: III.

BACK

American Journal of Sports Medicine (AJSM), Volume 51, Issue 12

Arthroscopic Remplissage Combined With Bankart Repair Results in a Higher Rate of Return to Sport in Athletes Compared With Bankart Repair Alone or the Latarjet Procedure: A Systematic Review and Meta-analysis

W.H. Davis, J.A. DiPasquale

DOI: https://doi.org/10.1177/03635465221138559

Background: Traumatic anterior shoulder instability affects athletes at a higher rate compared with the general population. In recent years, indications for arthroscopic remplissage, an adjunct procedure classically used to reduce the recurrence of anterior shoulder instability in patients with off-track Hill-Sachs lesions, have expanded.

Purpose: To investigate return-to-sport (RTS) rates, functional outcomes, and adverse events in athletes who underwent arthroscopic Bankart repair with remplissage compared with surgical alternatives such as Bankart repair alone or the Latarjet procedure.

Study Design: Systematic review and meta-analysis; Level of evidence, 4.

Methods: A literature review of the Embase, PubMed (MEDLINE), and Web of Science databases was conducted for articles published before May 22, 2022. For the systematic review, 16 of 457 studies that reported RTS rates at any time point after remplissage were deemed eligible for inclusion in quantitative analysis and 17 of 457 studies in qualitative analysis. For the meta-analysis, 8 of 457 studies reported RTS rates after remplissage compared with surgical alternatives including Bankart repair alone or the Latarjet procedure and were deemed eligible for inclusion.

Results: In total, 538 athletes underwent remplissage and were included in the study. RTS at any level was achieved by 86% (395/457) of patients, and the odds of RTS at any level were significantly higher after remplissage compared with surgical alternatives (odds ratio [OR], 2.71 [95% CI, 1.14-6.43]; P = .02). The odds of RTS at a previous or higher level were also significantly higher after remplissage compared with surgical alternatives (OR, 2.07 [95% CI, 1.29-3.31]; P = .002). The mean Rowe score increased significantly from 43.9 ± 7.77 preoperatively (n = 173) to 92.2 ± 4.02 after remplissage (n = 397) (P < .001), but there was no significant difference in Rowe scores between remplissage and surgical alternatives (P = .54). After remplissage, the recurrence rate was 5.0% for athletes (n = 220) and 7.3% for all patients (n = 634), with a mean time to recurrence of 24.0 ± 12.5 months. Reoperations occurred in 3.6% of athletes (n = 110) and 4.1% of all patients (n = 445). Recurrence and reoperations were significantly less likely after remplissage compared with surgical alternatives (OR, 0.18 [95% CI, 0.08-0.39]; P < .001 and OR, 0.17 [95% CI, 0.06-0.50]; P = .001, respectively).

Conclusion: Arthroscopic Bankart repair with remplissage augmentation significantly improved RTS rates among athletes, both at any level and at previous levels of play. Additionally, remplissage appeared to significantly decrease recurrence and reoperation rates compared with surgical alternatives such as Bankart repair alone or the Latarjet procedure.

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 105, Issue 19+20

No Upper Extremity Abstracts.

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 481, Issue 10

No Upper Extremity Abstracts.

BACK

Bone and Joint Journal (BJJ), Volume 105-B, issue 10

No Upper Extremity Abstracts.

BACK

Lower Extremity

Arthroscopy, Volume 39, Issue 10

Concomitant Subchondral Bone Cysts Negatively Affect Clinical Outcomes Following Arthroscopic Bone Marrow Stimulation for Osteochondral Lesions of the Talus

X. Cheng, T. Su

DOI: https://doi.org/10.1016/j.arthro.2023.03.029

Purpose: To study the effects of concomitant subchondral bone cysts (SBCs) on prognosis after arthroscopic bone marrow stimulation (BMS) for osteochondral lesions of the talus (OLTs) less than 100 mm^2 and to further assess the correlation between cystic OLT area, depth, or volume and postoperative outcomes.

Methods: We retrospectively analyzed consecutive patients with OLTs (<100 mm^2) who received BMS between April 2017 and May 2020 with a minimum follow-up of 24 months. Lesion area, depth, and volume were collected on preoperative magnetic resonance imaging. Visual analog scale (VAS), American Orthopedic Foot and Ankle Society, Karlsson-Peterson, Tegner, Foot and Ankle Ability Measure (FAAM)–Activities of Daily Life and Sports scores were assessed before surgery and at the latest follow-up. Additionally, a general linear model (GLM) and a Pearson correlation analysis (PCA) were performed to investigate the effects of concomitant cysts on postoperative results.

Results: Eighty-two patients with a mean follow-up of 39.22 ± 12.53 months were divided into non-cyst (n = 45; 39.91 ± 13.03 months) and cyst (n = 37; 38.37 ± 12.02 months) groups. There was no significant difference in the OLT area between the non-cyst and cyst groups (46.98 ± 19.95 mm^2 vs 56.08 ± 22.92 mm^2; $P = .093$), but the cyst group showed significantly greater depth (6.06 ± 1.99 mm vs 3.96 ± 1.44 mm; $P = .000$) and volume (248.26 ± 156.81 mm^3 vs 134.58 ± 89.68 mm^3; $P = .002$). The non-cyst group showed significantly more improvement in VAS pain, Karlsson-Peterson, Tegner, and FAAM scores than the cyst group ($P < .05$). The GLM indicated that SBCs negatively affected VAS pain and Tegner scores ($P < .05$). For OLTs with cysts, the PCA showed that an area of 90.91 mm^2, depth of 7.56 mm, and volume of 428.13 mm^3 were potential cutoff values associated with poor outcomes.

Conclusions: The concomitant SBCs negatively affected the prognosis of OLTs after BMS. For OLTs with cysts, an area of 90.91 mm^2, depth of 7.56 mm, and volume of 428.13 mm^3 were the potential cutoff values associated with poor outcomes after BMS.

Level of Evidence: Level III, retrospective comparative study.

BACK

Outcomes After Hip Arthroscopy Show No Differences Between Sexes: A Systematic Review

H. Crofts, C. Proceviat

DOI: https://doi.org/10.1016/j.arthro.2023.03.034

Purpose: To assess differences in postoperative outcomes between male and female patients following hip arthroscopy.

Methods: A systematic review was performed following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Medline, Embase, Cochrane, and PubMed databases were searched. Key words included “hip,” “arthroscopy,” “outcome,” “gender difference,” “sex difference,” “gender,” and “patient-reported outcome.” Studies were included that reported sex-specific analysis of outcomes following primary hip arthroscopy with minimum 2-year follow-up. Methodological Index for Non-Randomized Studies criteria were applied to each study. Data collected included patient-reported outcome measures (PROMs), complications, rates of revision arthroscopy (RA), and conversion to total hip arthroplasty (THA). Forest plots were generated for the most frequently reported PROMs, RA, and THA rates.

Results: In total, 38 studies met the inclusion criteria, with 40,194 (57% female) hips included. The most common indications for hip arthroscopy were femoroacetabular impingement and labral tears. Eighteen studies reported PROMs, with no clear trend towards sex differences. Eleven studies reported on RA rates, with 4 showing a significantly greater rate of RA in female patients. Seventeen studies reported on conversion to THA, with an overall conversion rate of 9.64%. There were no clear sex differences in conversion to THA.

Conclusions: There was no difference between sexes for postoperative PROM scores. Male patients were less likely to reach the MCID for the HOS-SSS than female patients in the majority of studies, and there were no sex differences for PASS rates. There were no significant differences between sexes in revision arthroscopy rates and conversion to total hip arthroplasty.

Level of Evidence: Level IV, systematic review of Level II, III and IV studies.

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 32, issue 10

No Lower Extremity Abstracts.

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 31, Issue 10

Poorer patient-reported outcome and increased risk of revision at a 5-year follow-up among patients with septic arthritis following anterior cruciate ligament reconstruction: a register-based cohort study of 23,075 primary anterior cruciate ligament reconstructions

J.K. Schmitz, O. Omar

DOI: https://doi.org/10.1007/s00167-023-07498-6

Purpose: The primary aim of this study is to analyse the patient-reported outcomes after ACLR complicated by septic arthritis. The secondary aim is to examine the 5-year risk of revision surgery after primary ACLR complicated by septic arthritis. The hypothesis was that patients with septic arthritis after ACLR are more likely to have lower PROMs scores and an increased risk of revision, compared with patients without septic arthritis.

Materials and methods: All primary ACLRs, with a hamstring or patellar tendon autograft (n = 23,075), in the Swedish Knee Ligament Register (SKLR) between 2006 and 2013 were linked with data from the Swedish National Board of Health and Welfare to identify patients with postoperative septic arthritis. These patients were verified in a nationwide medical records analysis and compared with patients without infection in the SKLR. The patient-reported outcome was measured using the Knee injury and Osteoarthritis Index Score (KOOS) and the European Quality of Life Five Dimensions Index (EQ-5D) at 1, 2 and 5 years postoperatively and the 5-year risk of revision surgery was calculated.

Results: There were 268 events of septic arthritis (1.2%). The mean scores on the KOOS and EQ-5D index were significantly lower for patients with septic arthritis on all subscales on all follow-up occasions compared with patients without septic arthritis. Patients with septic arthritis had a revision rate of 8.2% compared with 4.2% in patients without septic arthritis (adjusted hazard ratio 2.04; confidence interval 1.34–3.12).

Conclusion: Patients suffering from septic arthritis following ACLR are associated with poorer patient-reported outcomes at 1-, 2- and 5-year follow-ups compared with patients without septic arthritis. The risk of revision ACL reconstruction within 5 years of the primary operation for patients with septic arthritis following ACLR is almost twice as high, compared with patients without septic arthritis.

Level of evidence: III.

BACK

Low early complication rates after arthroscopic meniscus repair and meniscectomy

W.C. Lai, T.R. Mange

DOI: https://doi.org/10.1007/s00167-023-07507-8

Purpose: To evaluate the 30-day complication rates after arthroscopic meniscus repair and meniscectomy using the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database, with subgroup analysis of patients aged > 40 years.

Methods: NSQIP registries between 2006 and 2019 were queried using Current Procedural Terminology codes to identify patients undergoing arthroscopic meniscus repair (CPT 29882, 29883) and meniscectomy (29880, 29881). The following 30-day complications were assessed: pulmonary embolism (PE), venous thromboembolism (VTE), surgical site infection (SSI), reoperation, and readmission. Complications rates between treatment groups were compared using multivariate logistic regression analyses adjusted for sex, age, steroid use, and smoking/dyspnoea/COPD. A subgroup analysis was performed for patients aged > 40 years.

Results: A total 6354 meniscus repairs and 99,372 meniscectomies were identified. Complication rates were < 1% for both meniscus repair and meniscectomy. Meniscus repair was associated with significantly higher rates of PE, VTE, and readmission compared to meniscectomy: PE (0.2% vs 0.1%, $p < 0.001$), VTE (0.8% vs 0.4%, $p < 0.001$), superficial SSI (0.1% vs 0.2%, n.s), deep SSI (0.07% vs 0.1%, n.s), reoperation (0.5% vs 0.4%, n.s), and readmission (0.9% vs 0.8%, $p = 0.003$). Among patients aged > 40 years, complication rates were < 1.3% for both meniscus repair and meniscectomy. Similar trends and rates were found in patients aged > 40 years undergoing meniscus repair versus meniscectomy: PE (0.38% vs 0.12%, $p < 0.001$), VTE (1.07% vs 0.46%, $p < 0.001$), superficial SSI (0.03% vs 0.19%, n.s), deep SSI (0.1% vs 0.06%, n.s), reoperation (0.48% vs 0.43%, n.s), and readmission (1.2% vs 0.85%, $p = 0.01$).

Conclusion: Arthroscopic meniscus repair and meniscectomy are both low-risk procedures with 30-day complication rates < 1% overall and < 1.3% among patients aged > 40 years. These findings support meniscus repair whenever feasible in the setting of preserved articular cartilage. Understanding of the short-term complication rates after arthroscopic meniscus repair and meniscectomy can aid surgeons in providing comprehensive preoperative counselling to patients considering such treatments, specifically when discussing the risks and benefits of meniscus repair.

Level of evidence: III.

BACK

Bone bridge technique for lateral meniscal allograft transplantation: no difference in clinical outcome compared to the soft tissue technique

R. Bhattacharyya, H. Krishnan

DOI: https://doi.org/10.1007/s00167-023-07443-7

Purpose: There is considerable debate regarding the optimal method of fixation for lateral meniscus allograft transplantation (MAT), with bone bridge techniques technically harder but allowing maintenance of root attachments, while soft tissue techniques are potentially more challenging for healing. The aim of this study was to compare the clinical results of the bone bridge and soft tissue techniques for lateral MAT in terms of failure, re-operation rate, complications and patient reported outcomes.

Methods: Retrospective analysis of prospectively collected data for patients undergoing primary lateral MAT with a minimum of 12-month follow-up. Patients following surgery utilising the bone bridge technique (BB) were compared with historical control patients who underwent MAT with the soft tissue technique (ST). Outcome was assessed by failure rate, defined as removal or revision of the meniscus transplant, survivorship by Kaplan–Meir analysis, re-operation rates, and other adverse event. Patient-reported outcome measures (PROMs) were compared using data at the 2-year point or 1 year if not reached 2 years.

Results: One-hundred and twelve patients following lateral meniscal transplants were included, 31 in the BB group and 81 in the ST historical control group, with no differences in demographics between both groups. Median follow-up for the BB group was 18 (12–43) months compared to 46 (15–62) months for the ST group. There were 3 failures (9.6%) in the BB group v 2 (2.4%) in the ST group (n.s.) with a mean time to failure of 9 months in both groups. 9 patients (29%) required a re-operation (all cause) in the BB group v 24 patients (29.6%) in the ST group (n.s). There was no difference in complications between both groups. There was significant improvement ($p < 0.0001$) in all PROMs (Tegner, IKDC, KOOS and Lysholm) between baseline and 2-year follow-up for both groups but no between-group differences.

Conclusion: Lateral MAT has a high success rate for symptomatic meniscal deficiency with significant benefits irrespective of the fixation technique. There is no advantage in performing the more technically demanding BB technique over ST fixation.

Level of evidence: Level 2.

BACK

Outside-in repair technique is effective in traumatic tears of the meniscus in active adults: a systematic review

F. Migliorini, M. Pilone

DOI: https://doi.org/10.1007/s00167-023-07475-z

Purpose: Meniscal injuries are common. Outside-in meniscal repair is one of the techniques advocated for the management of traumatic meniscal tears. This systematic review investigated the outcomes of the outside-in repair technique for the management of traumatic tears of the menisci. The outcomes of interest were to investigate whether PROMs improved and to evaluate the rate of complications.

Methods: Following the 2020 PRISMA statement, in May 2023, PubMed, Web of Science, Google Scholar, and Embase were accessed with no time constraints. All the clinical investigations which reported data on meniscal repair using the outside-in technique were considered for inclusion. Only studies which reported data on acute traumatic meniscal tears in adults were considered. Only studies which reported a minimum of 24 months of follow-up were eligible.

Results: Data from 458 patients were extracted. 34% (155 of 458) were women. 65% (297 of 458) of tears involved the medial meniscus. The mean operative time was 52.9 ± 13.6 min. Patients returned to their normal activities at 4.8 ± 0.8 months. At a mean of 67-month follow-up, all PROMs of interest improved: Tegner scale ($P = 0.003$), Lysholm score ($P < 0.0001$), International Knee Documentation Committee ($P < 0.0001$). 5.9% (27 of 458) of repairs were considered failures. Four of 186 (2.2%) patients experienced a re-injury, and 5 of 458 (1.1%) patients required re-operation.

Conclusion: Meniscal repair using the outside-in technique can be effectively performed to improve the quality of life and the activity level of patients with acute meniscal tears.

Level of evidence: Level IV.

BACK

Technology-assisted anterior cruciate ligament reconstruction improves tunnel placement but leads to no change in clinical outcomes: a systematic review and meta-analysis

E. Yavari, S. Moosa

DOI: https://doi.org/10.1007/s00167-023-07481-1

Purpose: To investigate the effect of technology-assisted Anterior Cruciate Ligament Reconstruction (ACLR) on post-operative clinical outcomes and tunnel placement compared to conventional arthroscopic ACLR.

Methods: CENTRAL, MEDLINE, and Embase were searched from January 2000 to November 17, 2022. Articles were included if there was intraoperative use of computer-assisted navigation, robotics, diagnostic imaging, computer simulations, or 3D printing (3DP). Two reviewers searched, screened, and evaluated the included studies for data quality. Data were abstracted using descriptive statistics and pooled using relative risk ratios (RR) or mean differences (MD), both with 95% confidence intervals (CI), where appropriate.

Results: Eleven studies were included with total 775 patients and majority male participants (70.7%). Ages ranged from 14 to 54 years (391 patients) and follow-up ranged from 12 to 60 months (775 patients). Subjective International Knee Documentation Committee (IKDC) scores increased in the technology-assisted surgery group (473 patients; P = 0.02; MD 1.97, 95% CI 0.27 to 3.66). There was no difference in objective IKDC scores (447 patients; RR 1.02, 95% CI 0.98 to 1.06), Lysholm scores (199 patients; MD 1.14, 95% CI − 1.03 to 3.30) or negative pivot-shift tests (278 patients; RR 1.07, 95% CI 0.97 to 1.18) between the two groups. When using technology-assisted surgery, 6 (351 patients) of 8 (451 patients) studies reported more accurate femoral tunnel placement and 6 (321 patients) of 10 (561 patients) studies reported more accurate tibial tunnel placement in at least one measure. One study (209 patients) demonstrated a significant increase in cost associated with use of computer-assisted navigation (mean 1158€) versus conventional surgery (mean 704€). Of the two studies using 3DP templates, production costs ranging from $10 to $42 USD were cited. There was no difference in adverse events between the two groups.

Conclusion: Clinical outcomes do not differ between technology-assisted surgery and conventional surgery. Computer-assisted navigation is more expensive and time consuming while 3DP is inexpensive and does not lead to greater operating times. ACLR tunnels can be more accurately located in radiologically ideal places by using technology, but anatomic placement is still undetermined because of variability and inaccuracy of the evaluation systems utilized.

Level of evidence: Level III.

BACK

Surgical techniques for medial Patellofemoral ligament reconstruction: a systematic review and meta-analysis of level I and II studies

H. Kahlon, P. Vivekanantha

DOI: https://doi.org/10.1007/s00167-023-07494-w

Purpose: To determine the most optimal surgical technique for medial patellofemoral ligament reconstruction (MPFLR).

Methods: Three databases MEDLINE, PubMed, and EMBASE were searched from inception to December 13th, 2022, for level I or II studies comparing MPFLR techniques. The authors adhered to the PRISMA and R-AMSTAR guidelines as well as the Cochrane Handbook for Systematic Reviews of Interventions. Data on patient-reported outcome measures were recorded. Quality assessment was carried out using the MINORS and Cochrane Risk of Bias assessment tools. Certainty of evidence was carried out with the GRADE assessment tool.

Results: Ten studies comprising 723 patients (723 knees) were included in this review. The weighted mean difference in Kujala, Lysholm, and IKDC scores comparing single- and double-tunnel patellar drilling techniques was 2.66 (95% CI −1.05–6.37, $p = 0.16$, $I2 = 0\%$) with moderate certainty, 0.78 (95% CI −9.02–10.58, $p = 0.88$, $I2 = 87\%$) with low certainty, and 1.71 (95% CI −2.43–5.86, $p = 0.42$, $I2 = 0\%$) with low certainty, respectively. Double-suture anchor patellar fixation demonstrated greater Kujala scores than transpatellar fixation (87.1 ± 2.8 vs 84.0 ± 3.8, $p < 0.001$) with moderate certainty. Y-shaped graft patellar fixation demonstrated superior Kujala scores to C-shaped graft patellar fixation (95.9 ± 4.7 vs 91.3 ± 9.7, $p = 0.001$) with moderate certainty. Augmentation of femoral fixation with polyester sutures demonstrated superior Kujala scores (97.8 ± 6.4. vs 88.0 ± 6.3, $p < 0.005$) with low certainty. Four-stranded grafts demonstrated greater Kujala scores than two-stranded grafts (93.5 ± 2.6 vs 91.6 ± 3.5, $p = 0.01$) with low certainty.

Conclusion: The optimal MPFLR surgical technique is likely to utilize a four-stranded graft using either endobutton, double-suture anchor, or transosseous suture patellar fixation with polyester suture augmented interference screw femoral fixation. Orthopedic surgeons can consider employing such a technique to improve patient outcomes by conferring greater graft stability, strength, and function.

Level of evidence: Level II.

BACK

Superior outcomes after arthroscopic treatment of femoroacetabular impingement and labral tears with closed versus open capsule

M.F. Tahoun, X. Lizano-Diéz

DOI: https://doi.org/10.1007/s00167-022-07266-y

Purpose: The purpose of the study was the clinical evaluation of the capsular management with arthroscopic treatment of femoroacetabular impingement and labral tears by comparing the functional outcomes of closed versus open capsule.

Methods: Patients with a median age of 38 years (18–55), clinical and radiological features of FAI and/or labral tear, and non-arthritic non-dysplastic hips were selected for arthroscopic treatment. Capsulotomy was performed primarily as an interportal section, then a distal extension preserving the zona orbicularis was added. The study compared two matched groups: patients with open capsule versus patients with closed capsule. Clinical outcomes were assessed by Non-Arthritic Hip Score, hip outcome scores of daily living activities and sports-specific scales. Scores were collected preoperatively and 6 months, 2 years and 5 years postoperatively. Rate of revision arthroscopy and conversion to total hip arthroplasty were used for comparing groups. Minimal clinically important differences were calculated for both groups.

Results: The study included 42 patients in the OC group and 44 patients in the CC group. Significant improvement of postoperative PROMs was recorded in both groups compared to preoperative scores. CC group significantly improved more than the OC group based on NAHS, HOS-ADL and HOS-SSS over all check points except for NAHS and HOS-ADL at 6 months, which were statistically non-significant. A non-significant difference was observed in the percentage of patients who met the MCID for all reported outcome scores at 5 years in both groups. The rate of reoperation was similar in both groups, but with different indications.

Conclusion: Arthroscopic treatment of FAI and labral repair with complete closure of the hip capsule led to significantly improved functional outcomes after 5 years follow-up compared with open capsule. Closed capsule can provide greater improvement in the sports-specific outcomes at early follow-up. Controlled capsulotomy limited by zona orbicularis did not produce instability at any postoperative stage. Similar proportions of patients achieved minimal clinically important difference, and similar rates of reoperation were reported in both groups.

Level of evidence: III

BACK

Patients aged 50–75 years take longer to achieve the patient acceptable symptom state than patients aged 20–34 years following primary hip arthroscopy for femoroacetabular impingement syndrome

D.S. Shankar, N. Rao

DOI: https://doi.org/10.1007/s00167-023-07478-w

Purpose: Though an increasing number of adults older than 50 years are undergoing hip arthroscopy for treatment of Femoroacetabular Impingement Syndrome (FAIS), it is unclear how their timeline for functional outcome improvement compares to that of younger patients. The purpose of this study was to assess the impact of age on time to achieving the Minimum Clinically Important Difference (MCID), Substantial Clinical Benefit (SCB), and Patient Acceptable Symptom State (PASS) following primary hip arthroscopy for FAIS.

Methods: A retrospective comparative single-surgeon cohort study of primary hip arthroscopy patients with minimum 2-year follow-up was conducted. Age categories were 20–34 years, 35–49 years, and 50–75 years. All subjects completed the modified Harris Hip Score (mHHS) prior to surgery and at 6-month, 1-year, and 2-year follow-up. MCID and SCB cutoffs were defined as pre-to-postoperative increases in mHHS by ≥ 8.2 and ≥ 19.8, respectively. PASS cutoff was set at postoperative mHHS ≥ 74. Time to achievement of each milestone was compared using interval-censored survival analysis. The effect of age was adjusted for Body Mass Index (BMI), sex, and labral repair technique using an interval-censored proportional hazards model.

Results: Two hundred eighty-five patients were included in the analysis with 115 (40.4%) aged 20–34 years, 92 (32.3%) aged 35–49 years, and 78 (27.4%) aged 50–75 years. There were no significant differences between groups in time to achievement for the MCID (n.s.) or SCB (n.s.). However, patients in the oldest group had significantly longer time to PASS than those in the youngest group, both in the unadjusted analysis ($p = 0.02$) and after adjusting for BMI, sex, and labral repair technique (HR 0.68, 95% CI 0.48–0.96, $p = 0.03$).

Conclusion: Achievement of the PASS, but not the MCID or SCB, is delayed among FAIS patients aged 50–75 years who undergo primary hip arthroscopy compared to those aged 20–34 years. Older FAIS patients should be counseled appropriately about their longer timeline to achieving hip function comparable to their younger counterparts.

Level of evidence: III.

BACK

Ability to return to sports after early lateral ligament repair of the ankle in 147 elite athletes

C.C. Hong, J. Calder

DOI: https://doi.org/10.1007/s00167-022-07270-2

Purpose: The literature on elite athletes' ability to return to sports (RTS) after early lateral ligament repair of the ankle remains inadequate. The time needed to RTS after modified Broström repair for acute grade III lateral ligament injuries in a large cohort of elite athletes was evaluated while assessing the impact of other associated injuries.

Methods: Prospective data from 147 elite athletes who underwent a primary lateral ligament repair for acute grade III injuries with clinical ankle instability from 2015 to 2019 with a minimum of 2-year follow-up were reviewed. Pertinent details such as characteristics of injury, time taken to RTS, impact of associated injuries on RTS and complications were recorded and analysed.

Results: The average age was 24.4 years (S.D = 4.9) with 89.1% males. Approximately two-thirds of the elite athletes were football players (66.0%) and 21.1% were rugby players. Isolated lateral ligament complex injuries were sustained by 122 (83%) patients, while 25 (17%) had associated injuries (osteochondral lesions of the talus/deltoid injury/syndesmosis injury). All 147 athletes returned to their preinjury level of sports with a median time of 69 days (range 58–132 days). There was no significant difference found in time to RTS between gender, age, and types of sports. However, there was a statistically significant difference noted in the time taken to RTS earlier in patients with isolated lateral ligament injuries when compared to those with associated injuries (68.6 vs. 82.8 days; $p = 0.004$). Multiple conditional linear regression yielded three independent predictors of longer time taken to RTS which were associated deltoid injury (7.5 days longer; 95% CI 2.9–12.3; $p = 0.002$), associated syndesmosis injury (6.7 days longer; 95% CI 0.5–12.8; $p = 0.034$) and associated OLT (30.3 days longer; 95% CI 25.1–35.5; $p = 0.000$).

Conclusion: Early surgical repair for acute grade III lateral ligament injuries in elite athletes yielded excellent rate of RTS at 9–10 weeks and a re-injury rate of 2%. Concomitant injuries will delay RTS after surgical intervention. These findings serve as important guide to managing elite athletes following acute rupture of the lateral ligament complex.

Level of evidence: Level III.

BACK

American Journal of Sports Medicine (AJSM), Volume 51, Issue 12

Arthroscopic Lysis of Adhesions for Arthrofibrosis After Anterior Cruciate Ligament Reconstruction

A. Lamba, C.L. Holliday CL

DOI: https://doi.org/10.1177/03635465231195366

Background: Arthrofibrosis (AF) after anterior cruciate ligament reconstruction (ACLR) remains a challenge. There is a paucity of data on arthroscopic interventions for AF after ACLR.

Purpose: To (1) describe the patient, injury, and surgical characteristics and patient-reported outcomes (PROs) of those requiring an arthroscopic intervention for loss of motion after ACLR and (2) compare outcomes between patients undergoing an early intervention (within 3 months) versus those undergoing a late intervention (after 3 months).

Study Design: Case series; Level of evidence, 4.

Methods: Patients with a history of ACLR and a subsequent operative procedure for postoperative AF at a single institution between 2000 and 2018 were retrospectively identified. Arthroscopic interventions included lysis of adhesions, capsular release with or without manipulation under anesthesia, and excision of cyclops lesions. Patients were excluded if they had a knee dislocation or multiple-ligament injury, a periarticular fracture, or less than 2-year follow-up from the arthroscopic intervention. PROs including the Tegner activity score, visual analog scale pain score, and International Knee Documentation Committee score as well as knee range of motion (ROM) were recorded.

Results: A total of 40 patients were included with a mean age of 27.2 years (range, 11.0-63.8 years) at surgery and a mean follow-up of 10.0 years (range, 2.9-20.7 years). The mean preoperative flexion and extension were 102° (range, 40°-150°) and 8° (range, 0°-25°), respectively. The mean postoperative flexion and extension were 131° (range, 110° to 150°) and 0° (range, –10° to 5°), respectively. After the arthroscopic intervention, the mean ROM improved from 94° (range, 40°-140°) preoperatively to 131° (range, 107°-152°) at final follow-up ($P < .001$), and the visual analog scale pain score improved from 3.0 preoperatively to 1.2 postoperatively ($P = .001$). Overall, 13 patients (32.5%) underwent an intervention within 3 months and 27 (67.5%) after 3 months. The early intervention group had a higher postoperative International Knee Documentation Committee score compared with the late intervention group (86.8 vs 71.7, respectively; $P = .035$).

Conclusion: An arthroscopic intervention for AF after ACLR successfully improved knee ROM and pain. Patients who underwent either early or late surgery obtained satisfactory motion and function, although improved PROs were observed when the intervention occurred within 3 months of the primary procedure.

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 105, Issue 19+20

No Lower Extremity Abstracts.

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 481, Issue 10

No Lower Extremity Abstracts.

BACK

Bone and Joint Journal (BJJ), Volume 105-B, issue 10

No Lower Extremity Abstracts.

BACK

Miscellaneous

Arthroscopy, Volume 39, Issue 10

No Miscellaneous Abstracts.

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 32, issue 10

No Miscellaneous Abstracts.

BACK

Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA), Volume 31, Issue 10

The number of arthroscopies performed by trainees does not deduce the level of their arthroscopic proficiency

H. Anetzberger, A. Kugler

DOI: https://doi.org/10.1007/s00167-023-07471-3

Purpose: It is reasonable to question whether the case volume is a suitable proxy for the manual competence of an arthroscopic surgeon. The aim of this study was to evaluate the correlation between the number of arthroscopies previously performed and the arthroscopic skills acquired using a standardized simulator test.

Methods: A total of 97 resident and early orthopaedic surgeons who participated in arthroscopic simulator training courses were divided into five groups based on their self-reported number of arthroscopic surgeries: (1) none, (2) < 10, (3) 10 to 19, (4) 20 to 39 and (5) 40 to 100. Arthroscopic manual skills were evaluated with a simulator by means of the diagnostic arthroscopy skill score (DASS) before and after training. Seventy-five points out of 100 must be achieved to pass the test.

Results: In the pretest, only three trainees in group 5 passed the arthroscopic skill test, and all other participants failed. Group 5 (57 ± 17 points; n = 17) scored significantly higher than the other groups (group 1: 30 ± 14, n = 20; group 2: 35 ± 14, n = 24; group 3: 35 ± 18, n = 23; and group 4: 33 ± 17, n = 13). After a two-day simulator training, trainees showed a significant increase in performance. In group 5, participants scored 81 ± 17 points, which was significantly higher than the other groups (group 1: 75 ± 16; group 2: 75 ± 14; group 3: 69 ± 15; and group 4: 73 ± 13). While self-reported arthroscopic procedures were n.s. associated with higher log odds of passing the test ($p = 0.423$), the points scored in the pretest were found to be a good predictor of whether a trainee would pass the test ($p < 0.05$). A positive correlation was observed between the points scored in the pretest and the posttest ($p < 0.05$, $r = 0.59$, $r2 = 0.34$).

Conclusions: The number of previously performed arthroscopies is not a reliable indicator of the skills level of orthopaedic residents. A reasonable alternative in the future would be to verify arthroscopic proficiency on the simulator by means of a score as a pass–fail examination.

Level of evidence: III.

BACK

American Journal of Sports Medicine (AJSM), Volume 51, Issue 12

No Miscellaneous Abstracts.

BACK

Journal of Bone and Joint Surgery (JBJS), Volume 105, Issue 19+20

No Miscellaneous Abstracts.

BACK

Clinical Orthopaedics and Related Research (CORR), Volume 481, Issue 10

No Miscellaneous Abstracts.

BACK

Bone and Joint Journal (BJJ), Volume 105-B, issue 10

No Miscellaneous Abstracts.

BACK