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Arthroscopy, Volume 40, Issue 11

Atelocollagen Injection During Arthroscopic Rotator Cuff Repair for Small- to Medium-Sized Subacute or Chronic Rotator Cuff Tears Enhances Radiographic Tendon Integrity: A Propensity Score–Matched Comparative Study

H.G. Kim, S.C. Kim

DOI: https://doi.org/10.1016/j.arthro.2024.02.046

Purpose: To evaluate the clinical and structural outcomes of using injectable atelocollagen during arthroscopic rotator cuff repair (ARCR) for small- to medium-sized rotator cuff tears.

Methods: This retrospective study reviewed patients with small- to medium-sized full-thickness tears who underwent ARCR from 2016 to 2022 with a minimum 1-year follow-up. Propensity score (PS) matching was used to reduce bias. Tendon integrity was evaluated using magnetic resonance imaging (MRI) at postoperative 6 months. Clinical and structural outcomes were compared between the 2 groups.

Results: After PS matching, this study included 181 pairs of patients comparing ARCR with atelocollagen injection and without atelocollagen injection. Range of motion, muscle strength, and functional outcomes were significantly improved in both the atelocollagen group and the control group. Forward elevation and external rotation were significantly worse in the atelocollagen group compared with the control group at 2, 6, and 12 months postoperatively and at the final follow-up. In total, 125 patients (69.1%) in the atelocollagen group and 130 patients (71.8%) in the control group exceeded the minimal clinically important difference in the American Shoulder and Elbow Surgeons score without a significant difference between the 2 groups (P = .509). The mean value of Sugaya grade on postoperative MRI evaluation was 2.03 ± 0.81 for the atelocollagen group and 2.24 ± 0.97 for the control group, with a significant difference between the 2 groups (P = .027). Tendon healing failure was observed in 12 patients (6.6%) in the atelocollagen group and 19 patients (10.5%) in the control group, with no statistical difference between the 2 groups (P = .189).

Conclusion: Atelocollagen injection during ARCR for small- to medium-sized subacute or chronic rotator cuff tears did not show a benefit in clinical outcomes. However, postoperative MRI showed significantly lower Sugaya grade compared with the control group, with no significant difference in retear rate.

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

BACK

Journal of Shoulder and Elbow Surgery (JSES), Volume 33, issue 11

Improvement of coracoid process union rates: a comparative study of conventional open and arthroscopic-assisted Bristow procedures for treating anterior shoulder instability in rugby players

M. Tanaka, T. Hirose

DOI: https://doi.org/10.1016/j.jse.2024.02.041

Background: The Bristow coracoid transfer procedure is a reliable technique for treating anterior shoulder instability in patients with large glenoid bone loss or those involved in collision sports. However, its success is marred by its inferior bone union rate of the coracoid process as compared to the Latarjet procedure. This study aimed to evaluate whether arthroscopic confirmation of the secured coracoid fixation during the Bristow procedure improves the bone union rate and clinical outcomes as compared to the open procedure.

Methods: We retrospectively reviewed 104 rugby players (n = 111 shoulders) who underwent an open (n = 66 shoulders) or arthroscopy (AS)-assisted (n = 45 shoulders) Bristow procedure at our center from 2007 to April 2019. In the AS-assisted group, the screw fixation and coracoid stability and contact were confirmed under arthroscopic visualization. Graft union was evaluated through computed tomography at 3 months, 6 months, and 1 year postoperatively. Patient-reported outcome measures were assessed based on the American Shoulder and Elbow Surgeons score, Rowe score, and satisfaction rate. Recurrence, the rate of return to play (RTP), and the frequency of pain after RTP were also assessed.

Results: The mean follow-up period was 73.5 (range: 45-160) months for the open group and 32.3 (range: 24-56) months for the AS-assisted group. In the former, the rates of bone union were 50%, 72.7%, and 88.9% at 3 months, 6 months, and 1 year, respectively. In contrast, the AS-assisted group had significantly greater bone union rates—88.9%, 93.3%, and 95.6% at 3 months, 6 months, and 1 year, respectively. Both groups showed significant improvement in the American Shoulder and Elbow Surgeons and Rowe scores compared to preoperative values as well as high satisfaction rates (open: 92%; AS-assisted: 95.7%). There were no statistically significant differences in the recurrence and RTP rates as well as the frequency of pain after RTP between the 2 groups.

Conclusion: The AS-assisted procedure allows early and high bone healing without compromising the clinical outcomes.

Level of Evidence: Level III Retrospective - Cohort Comparison - Treatment Study

BACK

Outcomes of arthroscopic stabilization for posterior shoulder instability: a systematic review

J.E. Ralph, E.T. Hurley

DOI: https://doi.org/10.1016/j.jse.2024.04.006

Background: Posterior shoulder instability makes up approximately 10% of all shoulder instability cases and its diagnosis and treatment is less well understood. Recently, however, there has been increased recognition of posterior instability and posterior stabilization. The purpose of this study was to systematically review the literature to ascertain the outcomes on arthroscopic stabilization of posterior shoulder instability.

Methods: Two independent reviewers conducted a systematic literature search based on PRISMA guidelines, utilizing the MEDLINE database. Studies were eligible for inclusion if they reported postoperative outcomes for posterior shoulder instability following arthroscopic stabilization.

Results: A total of 48 studies met inclusion criteria for review including 2307 shoulders. Majority of patients were male (83.3%), with an average age of 26.1 years and a mean follow-up of 46.8 months. The functional outcome score primarily utilized for postoperative assessment was the American Shoulder and Elbow Surgeons with an average of 84.77. Overall, 90.9% of patients reported being satisfied with their arthroscopic stabilization. Recurrent instability occurred in 7.4% of patients. The total revision rate was 5.2%. 16.6% of patients reported residual pain postoperatively. The rate of return to play was 86.4% with 68.0% of patients returning to play at the same or higher level of play.

Conclusion: Arthroscopic stabilization of posterior shoulder instability resulted in good outcomes with high patient satisfaction and low rates of recurrent instability, revisions, and residual pain.

Level of Evidence: Level IV – Systematic review

BACK

Risk factors for recurrence following arthroscopic Bankart repair: a systematic review

C.H. Bulleit, E.T. Hurley

DOI: https://doi.org/10.1016/j.jse.2024.04.017

Background: Recurrent instability remains a major source of morbidity following arthroscopic Bankart repair. Many risk factors and predictive tools have been described, but there remains a lack of consensus surrounding individual risk factors and their contribution to outcomes. The purpose of this study is to systematically review the literature to identify and quantify risk factors for recurrence following arthroscopic Bankart repair.

Methods: A literature search was performed using the PubMed/MEDLINE databases based on the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines. Studies were included if they evaluated risk factors for recurrent instability following arthroscopic Bankart repair.

Results: Overall, 111 studies were included in the analysis, including a total of 19,307 patients and 2750 episodes of recurrent instability with 45 risk factors described. Age at operation was reported by 60 studies, with 35 finding increased risk at younger ages. Meta-analysis showed a 2-fold recurrence rate of 27.0% (171 of 634) for patients <20 years old compared with 13.3% (197 of 1485) for older patients ($P < .001$). Seventeen studies completed multivariable analysis, 13 of which were significant (odds ratio 1.3-14.0). Glenoid bone loss was evaluated by 39 studies, with 20 finding an increased risk. Multivariable analysis in 9 studies found odds ratios ranging from 0.7 to 35.1; 6 were significant. Off-track Hill-Sachs lesions were evaluated in 21 studies (13 significant), with 3 of 4 studies that conducted multivariable analysis finding a significant association with odds ratio of 2.9-8.9 of recurrence. The number of anchors used in repair was reported by 25 studies, with 4 finding increased risk with fewer anchors. Pooled analysis demonstrated a 25.0% (29 of 156) risk of recurrence with 2 anchors, compared with 18.1% (89 of 491) with 3 or more anchors ($P = .06$). Other frequently described risk factors included glenohumeral joint hyperlaxity (46% of studies reporting a significant association), number of preoperative dislocations (31%), contact sport participation (20%), competitive sport participation (46%), patient sex (7%), and concomitant superior labral anterior-posterior tear (0%).

Conclusion: Younger age, glenoid bone loss, and off-track Hill-Sachs lesions are established risk factors for recurrence following arthroscopic Bankart repair. Other commonly reported risk factors included contact and competitive sports participation, number of fixation devices, and patient sex.

Level of evidence: Level IV – Systematic Review

BACK

Effects of arthroscopic rotator cuff repair on isokinetic muscle function 6 months following surgery: influence of tear type, tear size, and tendon retraction

C. Drewitz, J. Arnet

DOI: https://doi.org/10.1016/j.jse.2024.02.032

Background: Rotator cuff tears are a common musculoskeletal condition which can lead to functional limitations and impairments in quality of life. The purpose of the present study was to investigate the effects of arthroscopic repair surgery on isokinetic muscle function before and 6-months after surgery. Additionally, the mediating effects of tear type, tear size and tendon retraction were examined.

Methods: Data from n = 67 patients (56 ± 9 years) with full-thickness rotator cuff tears were analyzed. Before and 6-months after surgery, isokinetic muscle function in external/internal rotation and abduction/adduction movements was assessed. Further, tear size, tear type (Collin classification) and tendon retraction (Patte classification) were analyzed using magnetic resonance imaging.

Results: After statistical analysis, a significant increase in limb symmetry index of external ($P < .001$), internal rotation ($P < .01$), abduction ($P < .001$), and adduction ($P < .001$) were observed from preto postsurgery. The results revealed that tear size and tendon tear type significantly mediated the functional outcome, with no significant effect of tendon retraction.

Conclusion: The present findings point toward the notion that the functional outcome following rotator cuff repair was significantly dependent on tear type and tear size but not tendon retraction. Patients with larger sized tears presented pronounced deficits following 6-months indicating that rehabilitation times need to be adjusted accordingly.

Level of evidence: Case Series – Treatment Study

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American Journal of Sports Medicine (AJSM), Volume 52, Issue 13

Comparing Recurrence Rates and the Cost-Effectiveness of Arthroscopic Labral Repair and Nonoperative Management for Primary Anterior Shoulder Dislocations in Young Patients: A Decision-Analytic Markov Model-Based Analysis

Oeding JF, Schulz WR, Wang AS, et al.

DOI: https://doi.org/10.1177/03635465241282342

Background: Value-based decision-making regarding nonoperative management versus early surgical stabilization for first-time anterior shoulder instability (ASI) events remains understudied.

Purpose: To perform (1) a systematic review of the current literature and (2) a Markov model–based cost-effectiveness analysis comparing an initial trial of nonoperative management to arthroscopic Bankart repair (ABR) for first-time ASI.

Study Design: Economic and decision analysis; Level of evidence, 3.

Methods: A Markov chain Monte Carlo probabilistic model was developed to evaluate the outcomes and costs of 1000 simulated patients (mean age, 20 years; range, 12-26 years) with first-time ASI undergoing nonoperative management versus ABR. Utility values, recurrence rates, and transition probabilities were derived from the published literature. Costs were determined based on the typical patient undergoing each treatment strategy at the authors' institution. Outcome measures included costs, quality-adjusted life-years (QALYs), and the incremental cost-effectiveness ratio (ICER).

Results: The Markov model with Monte Carlo microsimulation demonstrated mean (± standard deviation) 10-year costs for nonoperative management and ABR of $38,649 ± $10,521 and $43,052 ± $9352, respectively. Total QALYs acquired over the 10-year time horizon were 7.67 ± 0.43 and 8.44 ± 0.46 for nonoperative management and ABR, respectively. The ICER comparing ABR with nonoperative management was found to be just $5725/QALY, which falls substantially below the $50,000 willingness-to-pay (WTP) threshold. The mean numbers of recurrences were 2.55 ± 0.31 and 1.17 ± 0.18 for patients initially assigned to the nonoperative and ABR treatment groups, respectively. Of 1000 samples run over 1000 trials, ABR was the optimal strategy in 98.7% of cases, with nonoperative management the optimal strategy in 1.3% of cases.

Conclusion: ABR reduces the risk for recurrent dislocations and is more cost-effective despite higher upfront costs when compared with nonoperative management for first-time ASI in the young patient. While all these factors are important to consider in surgical decision-making, ultimate treatment decisions should be made on an individual basis and occur through a shared decision-making process.

BACK

Rotator Cuff Repair With or Without Acromioplasty: A Systematic Review of Randomized Controlled Trials With Outcomes Based on Acromial Type

Maguire JA, Dhillon J, Scillia AJ, Kraeutler MJ.

DOI: https://doi.org/10.1177/03635465231213009

Background: It is unclear whether the use of concomitant acromioplasty during rotator cuff repair (RCR) improves clinical outcomes and whether the outcomes are affected by acromial type.

Purpose: To perform a systematic review of randomized controlled trials comparing clinical outcomes of RCR with and without acromioplasty, with a subanalysis of outcomes based on acromial type.

Study Design: Systematic review; Level of evidence, 2.

Methods: A systematic review was conducted according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines by searching PubMed, the Cochrane Library, and Embase to identify randomized controlled trials that directly compared outcomes between RCR with versus without acromioplasty. A subanalysis was performed on the studies that provided outcomes based on acromial type. The search phrase used was rotator cuff repair (acromioplasty OR subacromial decompression) randomized. Patients were evaluated based on retear rate, reoperation rate, and patient-reported outcomes (PROs).

Results: Application of inclusion criteria yielded 5 studies (2 studies were level 1, and 3 studies were level 2) including a total of 409 patients, with 211 patients undergoing RCR alone (group A) and 198 patients undergoing RCR with acromioplasty (group B). The mean patient age was 58.5 and 58.3 years in groups A and B, respectively. The mean follow-up time was 52.9 months, and the overall percentage of male patients was 54.1%. The rotator cuff tear size was 20.7 mm and 19.8 mm for groups A and B, respectively. No significant differences were found between groups for any of the PROs at final follow-up. Overall retear rates did not significantly differ between groups based on acromial type. Between 2 studies that measured reoperation rate, a significantly higher reoperation rate was found for the nonacromioplasty group (15%) versus the acromioplasty group (4.1%) ($P = .031$). One of these studies found that 5 of 9 patients (56%) with a type III acromion in the nonacromioplasty group underwent reoperation compared with 0 of 4 patients with a type III acromion in the acromioplasty group.

Conclusion: There is some evidence that acromioplasty during RCR reduces the risk for later reoperation. This may be particularly true for patients with type III acromions, although further studies with larger sample sizes are needed to corroborate these data.

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Bone Marrow Stimulation for Arthroscopic Rotator Cuff Repair: A Meta-analysis of Randomized Controlled Trials

Hurley ET, Crook BS, Danilkowicz RM, et al.

DOI: 10.1177/03635465231213873

Background: Bone marrow stimulation (BMS) has been proposed to augment healing at the time of arthroscopic rotator cuff repair (ARCR) by creating several bone marrow vents in the footprint of the rotator cuff, allowing mesenchymal stem cells, platelets, and growth factors to cover the area as a “crimson duvet.”

Purpose: To perform a meta-analysis of randomized controlled trials (RCTs) to compare the outcomes after BMS and a control for those undergoing ARCR.

Study Design: Meta-analysis; Level of evidence, 1.

Methods: A literature search of 3 databases was performed based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines. RCTs comparing BMS and a control for ARCR were included. Clinical outcomes were compared, and a P value <.05 was considered to be statistically significant.

Results: A total of 7 RCTs with 576 patients were included. Overall, 18.8% of patients treated with BMS and 21.0% of patients treated with a control had a retear (I^2 = 43%; P = .61). With BMS, the mean Constant score was 88.2, and with the control, the mean Constant score was 86.7 (P = .12). Additionally, there was no significant difference in the American Shoulder and Elbow Surgeons score (94.3 vs 93.2, respectively; P = .31) or visual analog scale score (0.9 vs 0.9, respectively; P = .89).

Conclusion: The level 1 evidence in the literature did not support BMS as a modality to improve retear rates or clinical outcomes after ARCR.

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Bone and Joint Journal (BJJ), Volume 106, issue 11

Preoperative patient-reported outcome measures predict minimal clinically important difference and patient-acceptable symptomatic state following arthroscopic Bankart repair

Yi Long 1, Zhen-Ze Zheng 1, Xin-Hao Li 1, De-Dong Cui 1, Xing-Hao Deng 1, Jiang Guo 2, Rui Yang 1

DOI: 10.1302/0301-620x.106b10.bjj-2024-0395.r1

Aims: The aims of this study were to validate the minimal clinically important difference (MCID) and patient-acceptable symptom state (PASS) thresholds for Western Ontario Shoulder Instability Index (WOSI), Rowe score, American Shoulder and Elbow Surgeons (ASES), and visual analogue scale (VAS) scores following arthroscopic Bankart repair, and to identify preoperative threshold values of these scores that could predict the achievement of MCID and PASS.

Methods: A retrospective review was conducted on 131 consecutive patients with anterior shoulder instability who underwent arthroscopic Bankart repair between January 2020 and January 2023. Inclusion criteria required at least one episode of shoulder instability and a minimum follow-up period of 12 months. Preoperative and one-year postoperative scores were assessed. MCID and PASS were estimated using distribution-based and anchor-based methods, respectively. Receiver operating characteristic curve analysis determined preoperative patient-reported outcome measure thresholds predictive of achieving MCID and PASS.

Results: MCID thresholds were determined as 169.6, 6.8, 7.2, and 1.1 for WOSI, Rowe, ASES, and VAS, respectively. PASS thresholds were calculated as ≤ 480, ≥ 80, ≥ 87, and ≤ 1 for WOSI, Rowe, ASES, and VAS, respectively. Preoperative thresholds of ≥ 760 (WOSI) and ≤ 50 (Rowe) predicted achieving MCID for WOSI score ($p < 0.001$). Preoperative thresholds of ≤ 60 (ASES) and ≥ 2 (VAS) predicted achieving MCID for VAS score ($p < 0.001$). A preoperative threshold of ≥ 40 (Rowe) predicted achieving PASS for Rowe score ($p = 0.005$). Preoperative thresholds of ≥ 50 (ASES; $p = 0.002$) and ≤ 2 (VAS; $p < 0.001$) predicted achieving PASS for the ASES score. Preoperative thresholds of ≥ 43 (ASES; $p = 0.046$) and ≤ 4 (VAS; $p = 0.024$) predicted achieving PASS for the VAS.

Conclusion: This study defined MCID and PASS values for WOSI, Rowe, ASES, and VAS scores in patients undergoing arthroscopic Bankart repair. Higher preoperative functional scores may reduce the likelihood of achieving MCID but increase the likelihood of achieving the PASS. These findings provide valuable guidance for surgeons to counsel patients realistically regarding their expectations.

BACK

Characterization of articular lesions associated with glenohumeral instability using arthroscopy

Gonzalo Luengo-Alonso 1, Maria Valencia 1, Natalia Martinez-Catalan 1, Cristina Delgado 1, Emilio Calvo 1

DOI: 10.1302/0301-620x.106b10.bjj-2024-0262.r1

Aims: The prevalence of osteoarthritis (OA) associated with instability of the shoulder ranges between 4% and 60%. Articular cartilage is, however, routinely assessed in these patients using radiographs or scans (2D or 3D), with little opportunity to record early signs of cartilage damage. The aim of this study was to assess the prevalence and localization of chondral lesions and synovial damage in patients undergoing arthroscopic surgery for instablility of the shoulder, in order to classify them and to identify risk factors for the development of glenohumeral OA.

Methods: A total of 140 shoulders in 140 patients with a mean age of 28.5 years (15 to 55), who underwent arthroscopic treatment for recurrent glenohumeral instability, were included. The prevalence and distribution of chondral lesions and synovial damage were analyzed and graded into stages according to the division of the humeral head and glenoid into quadrants. The following factors that might affect the prevalence and severity of chondral damage were recorded: sex, dominance, age, age at the time of the first dislocation, number of dislocations, time between the first dislocation and surgery, preoperative sporting activity, Beighton score, type of instability, and joint laxity.

Results: A total of 133 patients (95%) had synovial or chondral lesions. At the time of surgery, shoulders were graded as having mild, moderate, and severe OA in 55 (39.2%), 72 (51.4%), and six (4.2%) patients, respectively. A Hill-Sachs lesion and fibrillation affecting the anteroinferior glenoid cartilage were the most common findings. There was a significant positive correlation between the the severity of the development of glenohumeral OA and the patient's age, their age at the time of the first dislocation, and the number of dislocations ($p = 0.004$, $p = 0.011$, and $p = 0.031$, respectively).

Conclusion: Synovial inflammation and chondral damage associated with instability of the shoulder are more prevalent than previously reported. The classification using quadrants gives surgeons more information about the chondral damage, and could explain the pattern of development of glenohumeral OA after stabilization of the shoulder. As the number of dislocations showed a positive correlation with the development of OA, this might be an argument for early stabilization.

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Lower Extremity

Arthroscopy, Volume 40, Issue 11

Capsular Management at the Time of Hip Arthroscopy for Femoroacetabular Impingement Syndrome Varies With Geography and Surgeon Subspecialty Training: A Cross-Sectional, Multinational Surgeon Survey

B. Kerzner, S.P.D. Dasari

DOI: https://doi.org/10.1016/j.arthro.2024.02.016

Purpose: To perform a multinational survey and identify patterns in capsular management at the time of hip arthroscopy.

Methods: An anonymous, nonvalidated survey was distributed by the American Orthopaedic Society for Sports Medicine; Arthroscopy Association of North America; European Society of Sports Traumatology, Knee Surgery & Arthroscopy; International Society for Hip Arthroscopy; and Turkish Society of Sports Traumatology, Arthroscopy, and Knee Surgery. The questions were broken down into 6 categories: demographic characteristics, capsulotomy preference, traction stitches, capsular closure, postoperative rehabilitation, and postoperative complications.

Results: The survey was completed by 157 surgeons. Surgeons who performed half or full T-type capsulotomies had 2.4 higher odds of using traction sutures for managing both the peripheral and central compartments during hip arthroscopy for femoroacetabular impingement ($P = .024$). Surgeons who believed that there was sufficient literature regarding the importance of hip capsular closure had 1.9 higher odds of routinely performing complete closure of the capsule ($P = .044$). Additionally, surgeons who practiced in the United States had 8.1 higher odds of routinely closing the capsule relative to international surgeons ($P < .001$). Moreover, surgeons who received hip arthroscopy training in residency or fellowship had 2.4 higher odds of closing the capsule completely compared with surgeons who did not have exposure to hip arthroscopy during their training ($P = .009$).

Conclusion: Geographic and surgeon-related variables correlate with capsular management preferences during hip arthroscopy. Surgeons who perform half or full T-capsulotomies more often use traction stitches for managing both the peripheral and central compartments. Surgeons performing routine capsular closure are more likely to believe that sufficient evidence is available to support the practice, with surgeons in the United States being more likely to perform routine capsular closure in comparison to their international colleagues.

Level of Evidence: not stated

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American Journal of Sports Medicine (AJSM), Volume 52, Issue 13

Platelet-Rich Plasma Injections Do Not Improve the Recovery After Arthroscopic Partial Meniscectomy: A Double-Blind Randomized Controlled Trial

Lo Presti M, Costa GG, Agrò G, et al.

DOI: https://doi.org/10.1177/03635465241283052

Background: Arthroscopic meniscectomy is one of the most performed surgical procedures in orthopaedics. Different approaches have been proposed to improve patient recovery but with unsatisfactory results. Platelet-rich plasma (PRP) augmentation has been proposed as a strategy to improve the recovery after meniscectomy.

Purpose: To investigate the clinical benefits of an intra-articular PRP injection after meniscectomy, in terms of faster and better patient recovery.

Study Design: Randomized controlled trial; Level of evidence, 1.

Methods: Ninety patients were randomized into a treatment group, with arthroscopic partial meniscectomy immediately followed by a 5-mL injection of autologous conditioned plasma, and a control group with partial meniscectomy alone. Patients were evaluated at baseline and at 15, 30, 60, and 180 days of follow-up with the visual analog scale (VAS) score for pain (primary outcome), as well as with International Knee Documentation Committee subjective score, Knee injury and Osteoarthritis Outcome Score subscales, Tegner score, and EuroQol-Visual Analog Scale score. Objective evaluation was performed analyzing knee range of motion and circumference and the International Knee Documentation Committee objective score. Complications, patient judgment, and satisfaction were documented as well.

Results: No major complications and an overall significant improvement in the clinical scores were observed in both groups. Overall, the comparative analysis did not demonstrate significant between-group differences in absolute values or improvements of both subjective and objective scores, as well as activity level. The improvement in terms of VAS pain score for the treatment group was significant already at 15 days (from 4.3 ± 2.5 to 2.5 ± 2.5; P = .014), while in the control group it became significant at 30 days (from 3.7 ± 2.3 to 2.0 ± 2.4; P = .004). No significant differences were observed between the 2 groups in terms of judgment of treatment results and satisfaction.

Conclusion: A single postoperative injection of PRP was not able to significantly improve patient recovery after arthroscopic partial meniscectomy. PRP augmentation did not provide overall benefits at a short-term follow-up (6 months) in terms of pain relief, function, objective parameters, and return-to-sport activities.

BACK

Survivorship and Outcomes of Meniscal Ramp Lesions Repaired Through a Posteromedial Portal During Anterior Cruciate Ligament Reconstruction: Outcome Study With a Minimum 10-Year Follow-up

Tanel L, Thaunat M, Lambrey P-J, et al.

DOI: https://doi.org/10.1177/03635465241288233

Background: Several studies have demonstrated suture repair of ramp lesions of the medial meniscus via a posteromedial approach was associated with a significantly lower rate of secondary meniscectomy. However, these studies are not long-term and highlight the need for extended follow-up research to better understand the outcomes over a more extended period.

Purpose: To evaluate the long-term results and reoperation rate for the failure of arthroscopic all-inside suture repair of ramp lesions of the medial meniscus via a posteromedial approach during anterior cruciate ligament (ACL) reconstruction.

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

Methods: All patients who underwent all-inside suture repair of the posterior segment of the medial meniscus (ramp lesion) via a posteromedial approach during ACL reconstruction at a minimum follow-up of 10 years were included in the study. Side-to-side anterior laxity was assessed preoperatively and postoperatively. Pre- and postoperative functional assessment was based on the subjective International Knee Documentation Committee score for activities of daily living and the Tegner activity scale for sporting ability. Reinterventions for meniscal repair failure and other complications were also recorded at the last follow-up.

Results: A total of 81 patients met the inclusion criteria for this study. Two patients had an ACL graft rupture with a new ramp lesion and were excluded from the analysis. Additionally, 15 patients were lost to follow-up, leaving a total of 64 patients in the final analysis. The mean follow-up was 124.8 months (range, 122.4-128.4 months). Mean side-to-side difference in anterior laxity significantly improved from 7.4 ± 1.5 mm (range, 5-12 mm) to 0.4 ± 1.3 mm (range, –3 to 4 mm) (P = .01). The mean subjective International Knee Documentation Committee score increased from 64.3 ± 13.4 (range, 34-92) before the operation to 91.1 ± 10.1 (range, 49-100) at the last follow-up (P = .001). The Tegner activity scale score at the last follow-up (6.3 ± 1.6) was lower than that before the trauma (7.1 ± 1.6) (P = .02). Fourteen patients (21.9%) had a failed meniscal repair and were reoperated. The mean time from initial repair to reoperation was 64.5 months (range, 13-126 months), and the median was 60.6 months. The multivariate analysis, including parameters such as lateral tenodesis (hazard ratio [HR], 1.62; P = .50), preoperative Tegner score (HR, 1.66; P = .41), preoperative laxity (HR, 1.75; P = .35), age at surgery (HR, 1.02; P = .97), and number of sutures (HR, 2.38; P = .19), did not reveal any factors associated with suture failure.

Conclusion: The results show that arthroscopic repair of ramp lesions of the medial meniscus during ACL reconstruction using a posteromedial approach has a high failure rate at the 10-year follow-up, with half of these suture failures occurring within 5 years after the initial repair.

BACK

Surgical Predictors of Clinical Outcome 6 Years After Revision ACL Reconstruction

Wright RW, Huston LJ, et al.

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Background: Revision anterior cruciate ligament (ACL) reconstruction has been documented to have inferior outcomes compared with primary ACL reconstruction. The reasons why remain unknown.

Purpose: To determine whether surgical factors performed at the time of revision ACL reconstruction can influence a patient's outcome at 6-year follow-up.

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

Methods: Patients who underwent revision ACL reconstruction were identified and prospectively enrolled between 2006 and 2011. Data collected included baseline patient characteristics, surgical technique and pathology, and a series of validated patient-reported outcome instruments: Knee injury and Osteoarthritis Outcome Score (KOOS), International Knee Documentation Committee (IKDC) subjective form, Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and Marx activity rating score. Patients were followed up for 6 years and asked to complete the identical set of outcome instruments. Regression analysis was used to control for baseline patient characteristics and surgical variables to assess the surgical risk factors for clinical outcomes 6 years after surgery.

Results: A total of 1234 patients were enrolled (716 men, 58%; median age, 26 years), and 6-year follow-up was obtained on 79% of patients (980/1234). Using an interference screw for femoral fixation compared with a cross-pin resulted in significantly better outcomes in 6-year IKDC scores (odds ratio [OR], 2.2; 95% CI, 1.2-3.9; P = .008) and KOOS sports/recreation and quality of life subscale scores (OR range, 2.2-2.7; 95% CI, 1.2-4.8; P < .01). Use of an interference screw compared with a cross-pin resulted in a 2.6 times less likely chance of having a subsequent surgery within 6 years. Use of an interference screw for tibial fixation compared with any combination of tibial fixation techniques resulted in significantly improved scores for IKDC (OR, 1.96; 95% CI, 1.3-2.9; P = .001); KOOS pain, activities of daily living, and sports/recreation subscales (OR range, 1.5-1.6; 95% CI, 1.0-2.4; P < .05); and WOMAC pain and activities of daily living subscales (OR range, 1.5-1.8; 95% CI, 1.0-2.7; P < .05). Use of a transtibial surgical approach compared with an anteromedial portal approach resulted in significantly improved KOOS pain and quality of life subscale scores at 6 years (OR, 1.5; 95% CI, 1.02-2.2; P≤ .04).

Conclusion: There are surgical variables at the time of ACL revision that can modify clinical outcomes at 6 years. Opting for a transtibial surgical approach and choosing an interference screw for femoral and tibial fixation improved patients' odds of having a significantly better 6-year clinical outcome in this cohort.

BACK

All-Inside Endoscopic Classic Bröstrom-Gould Technique: Medium-term Results

Hong CC, Charpail C, Kon Kam King C, Guillo S.

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Background: Short-term results after arthroscopic/endoscopic lateral ligament repair for chronic lateral ankle instability have been satisfactory, although medium- to longer-term results are lacking.

Purpose: The purpose of this study was to report the medium-term results of an all-inside endoscopic classic Bröstrom-Gould procedure where both the both lateral ligaments and the inferior extensor retinaculum can be approached directly, interchanging between arthroscopy for intracapsular structures and endoscopy for extracapsular structures. It was hypothesized that the all-inside endoscopic classic Bröstrom-Gould procedure would produce sustainable good outcomes at a medium term of 5 years.

Study Design: Case series; Level of evidence, 4

Methods: A prospective database for 43 patients who underwent an all-inside endoscopic classic Bröstrom-Gould repair of the anterior talofibular ligament and calcaneofibular ligament with inferior extensor retinaculum augmentation was reviewed. Patient details, American Orthopaedic Foot & Ankle Society score, Karlsson score, ankle activity score (AAS), and patient satisfaction were collected and analyzed.

Results: The study cohort of 43 patients with a mean age of 29.4 years (SD, 11.9 years) were reviewed at a mean follow-up of 63.1 months (SD, 8.5 months). The American Orthopaedic Foot & Ankle Society scores showed significant improvement from a mean of 69.6 (SD, 13.9) to 93.7 (SD, 10.7), while the Karlsson score improved from 59.7 (SD, 14.5) to 91.5 (SD, 14.5) at the final follow-up. The AAS showed that 32 (74.4%) patients maintained or had improvement in the AAS, from a mean of 5.38 (SD, 2.8) to 5.41 (SD, 2.8), with a mean satisfaction rate of 9.1 (SD, 1.3). Although the remaining 11 patients had a reduced AAS, at a mean of 4.6 (SD, 2.6), they reported a mean satisfaction rate of 7.4 (SD, 2.9). There were no surgical complications or reoperations reported in this cohort, although there were 3 patients with recurrent instability at their last follow-up, resulting in a failure rate of 7%.

Conclusion: The current study is the first to report the medium-term outcomes of an all-inside endoscopic classic Bröstrom-Gould procedure. Overall, 93% of the patients had good functional outcomes, but approximately 25% of patients had decreased ankle activity levels at a mean of 5 years postoperatively, albeit with good satisfaction rates.

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