International Journal of Research in Orthopaedics
Mahmud CI et al. Int J Res Orthop. 2026 Jul;12(4):943-949
https://www.ijoro.org

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20261870

Original Research Article

Short-term follow-up of anterior cruciate ligament reconstruction using rectus femoris autograft: a retrospective cohort study

Chowdhury I. Mahmud*, Abu Z. M. Selimullah, M. Alinoor

Department of Orthopaedic Surgery, Bangladesh Medical University, Dhaka, Bangladesh

Received: 22 May 2026
Accepted: 12 June 2026

***Correspondence:**
Dr. Chowdhury I. Mahmud,
E-mail: cimahmud@gmail.com

ABSTRACT

Background: Anterior cruciate ligament (ACL) reconstruction is widely performed to restore knee stability and function following ACL injury. Although hamstring tendon, bone-patellar tendon–bone, and quadriceps tendon (QT) autografts are commonly used, interest in rectus femoris graft (RFG) has recently increased because of its favorable graft characteristics and potentially lower donor-site morbidity. This study evaluated the short-term clinical and functional outcomes of arthroscopic ACL reconstruction (ACLR) using rectus femoris autograft.
Methods: This retrospective cohort study included 36 patients with isolated ACL injuries who underwent arthroscopic ACLR using rectus femoris autograft. Patients (n=36) aged 18-45 years were included. Functional outcomes were assessed using the Tegner-Lysholm knee score and visual analogue scale (VAS). The mean follow-up duration was 16.28 months.
Results: The mean age of the patients was 28.47 years, with males comprising 78% of the cohort. Sports injuries were the most common cause of ACL tears. The mean graft length was 30.72 cm, and mean graft diameter was 8.19 mm. The mean Lysholm score improved significantly from 57.17±7.11 preoperatively to 89.23±2.53 at 12 months ($p<0.001$). Mean VAS score decreased from 3.17±1.07 preoperatively to 0.71±0.70 at 12 months. Mild quadriceps weakness was observed in four patients and improved with physiotherapy.
Conclusions: Arthroscopic ACLR using rectus femoris autograft demonstrated favorable short-term functional outcomes with low complication rates. Further prospective studies with larger sample sizes and longer follow-up are needed to validate these findings.

Keywords: Anterior cruciate ligament reconstruction, Rectus femoris autograft, Tegner Lysholm score

INTRODUCTION

The anterior cruciate ligament (ACL) plays an important role in maintaining both static and dynamic stability of the knee joint.[1] Its primary function is to prevent anterior translation of the tibia in relation to femur. Additionally, the ACL helps control excessive extension of the knee, restricts varus and valgus stress, and limits rotational movement of the tibia. ACL injuries can have serious long-term consequences, including disability, reduced quality of life, and a significantly increased risk of osteoarthritis.[2] The standard approach for a complete tear involves arthroscopic ACLR using autografts or allografts.[3,4]

The success of ACLR depends on various factors, which includes graft type, tunnel placement and fixation method, among which graft selection plays a pivotal role in both surgical planning and postoperative management. The graft selection depends not only on the surgeon's preference but also on factors such as the graft diameter, length and strength. In addition, donor site morbidity and graft harvesting techniques are also important considerations regarding ACLR.[5,6]

Selecting the appropriate autograft is fundamental to surgical planning in arthroscopic ACLR. Traditionally, hamstring tendons (HT), bone-patellar tendon-bone

(BPTB), and QT autografts have been the primary options. Hamstring tendon autografts are widely used for ACLR, but they present several challenges. Notably, their initial fixation strength is often limited, which can result in graft micromotion and slower integration into the femoral and tibial bone tunnels. Additionally, when tunnel enlargement occurs, adjusting the graft thickness with hamstring tendons is difficult.[7]

The QT has emerged as a popular alternative for ACL autografts. Conventional graft harvesting techniques typically use the full thickness of the QT, providing a robust and versatile graft for reconstruction with minimal donor-site complications.[8-12] Incorporating the tendon fibers from the vastus lateralis, medialis and intermedius contribute mainly to graft volume rather than tensile strength, which may predispose the graft fiber rupture, elongation under load and quadriceps weakness.[13,14]

Recently, there has been growing interest in using the RFG for ACLR. The QT contains multiple fiber groups oriented in various direction from which rectus femoris tendon can be harvested through a safe surgical plane. Surgeons have developed several techniques to make harvesting the rectus femoris tendon easier, ensuring the graft is large and strong enough for reconstruction while also preserving the function of the extensor mechanism of the knee. This approach aims to keep the knee strength and flexibility after surgery, offering a promising alternative to traditional graft.[15] RFG is a versatile graft that can be tailored, divided, and configured to suit a wide range of ligament reconstruction procedures.

The rectus femoris autograft is a suitable graft option for primary and revision ACLR, with demonstrated clinical efficacy and safety. To date, only a limited number of studies regarding functional outcome and technical reports have specifically addressed the use of the rectus femoris tendon (RT) as a graft for primary ACLR.[16,17]

This aim of this study was to evaluate the clinical outcomes and potential complications associated with ACLR using a novel rectus femoris autograft. The primary objective is to assess the clinical effectiveness and safety of this technique, including patient recovery, functional results, and any adverse events observed during the follow-up.

METHODS

This retrospective cohort study was conducted in thirty-six patients of both sexes with diagnosed case of isolated ACL injury who underwent arthroscopic ACLR with Rectus femoris autograft. Purposive sampling (non-randomized) was done according to availability of the patients and strictly considering the inclusion and exclusion criteria. In this study, documentation for patients was obtained from medical records of the hospital, Bangladesh Medical University. Charts were screened, and demographic, preoperative, and intraoperative data were recorded. Patients aged 18 to 45 years (mean age 28.47 years) were included in this study. The cohort consisted predominantly of males, with 28 patients (78%) and 8 females (22%) (Table 1). All the surgeries were done by the same senior experienced surgeon in a private hospital.

The study excluded individuals with history of prior knee surgeries; concomitant ligament, meniscus or cartilage injuries; presence of intraarticular infections, osteoarthritis and arthrofibrosis. In addition, morbidly obese (BMI greater than 40 kg/m²) and patients with grossly wasted quadriceps were excluded. Each patient was assessed clinically and radiologically before surgery. Clinical examination focused on joint line tenderness, presence of effusion, range of motion (ROM) and the stability was assessed with drawer, Lachman and pivot shift test. Radiological evaluation included plain X-ray and MRI of the knee. VAS was used to assess the change in pain intensity before and after surgery. Functional outcomes were assessed using the Tegner Lysholm knee scoring scale.

After informed consent and a pre-anesthesia checkup, patients underwent surgery performed by the same senior surgeon under spinal anesthesia. An approximately 3 cm incision was made at the junction of the middle and lateral third of the upper patellar margin to expose the subcutaneous tissue covering the central portion of the QT. The sub-cutaneous tissues are dissected bluntly to expose the QT, which is then carefully separated from the surrounding subcutaneous tissues. Two parallel incisions, 6-8 mm apart, were made in the RF tendon to separate its superficial layer from the deep layer. The dissection to separate the rectus femoris (RF) from the deep part of QT layers was performed 3 to 4 cm proximal to the upper border of the patella. The tendon was then separated further distally with the scalpel and scissors to the proximal patellar pole in extended position. The superficial layer is then carefully detached from the upper border of the patella and secured with whip stitch by a non-absorbable suture. Then RF tendon was harvested in thirty degrees of knee flexion with a closed tendon stripper (Figure 1). The harvested RF tendon is then undergoing debridement of muscle tissue and a 3-fold graft was made (Figure 2). After harvesting the graft, standard transportal technique was used to reconstruct ACL by creating anterolateral, anteromedial and accessory medial portals. Endobutton and interference bioscrew was used to fix the RF autograft to femur and tibia respectively.

Upon completion of reconstruction, long knee brace was applied knee, and pain control was achieved using a multimodal analgesic regimen. All patients were discharged on postoperative day one with satisfactory pain control. Weight bearing as tolerated was permitted and range-of-motion exercises were initiated gradually using a knee brace, and quadriceps strengthening exercises commenced on the first postoperative day. The minimum follow-up period is 12 months with a mean of 16.28 months (range, 12-18 months). Only 22 patients came for

follow-up after 18 months. During each follow-up visit, clinical evaluation was performed, and Lysholm knee scoring system, Tegner activity level scale, VAS scale was used to assess the patients. Data were collected using a structured data sheet and the study was approved by the institutional ethics committee of the institution.

Statistical analysis was performed using SPSS Statistics for Windows, version 26.0 (IBM Corp., Armonk, NY, USA). Categorical variables were expressed as frequencies and percentages, while continuous variables were presented as mean±SD and range. For comparing preoperative and postoperative continuous variables (e.g., Lysholm knee score, VAS score, ROM), the paired sample t test was applied. Changes in ordinal clinical examination findings (e.g., Anterior Drawer test, Lachman test) were assessed using the Wilcoxon Signed Rank Test, while associations between categorical variables (e.g., functional outcome categories) were evaluated with the Chi-square test. A $p<0.05$ was considered statistically significant, and a 95% CI was maintained throughout the analysis.

RESULTS

A total of 36 patients who underwent arthroscopic ACLR using rectus femoris autograft were included in the study. The mean age of the cohort was 28.47 years (range, 18-45 years). The study population consisted predominantly of males (n=28, 78%), with females accounting for 22% (n=8). The majority of patients sustained ACL injuries during sports-related activities (n=28, 77.8%), while the remaining patients were injured due to road traffic accidents (n=8, 22.2%). The mean follow-up duration was 16.28 months (range, 12-18 months). All patients completed a minimum follow-up of 12 months. A total of 22 patients (61.1%) had follow-up beyond 18 months. No patients were lost to minimum follow-up; however, variation in follow-up duration was observed due to staggered review intervals (Table 1).

The average length of the RFG graft was 30.72 (range, 22-38 mm) and the diameter of the graft after 3-fold was 8.19 mm (range, 7.5-9.5 mm) in our study. The average duration of graft harvesting time was 8.92 minutes.

The mean preoperative VAS score was 3.17±1.07, which markedly dropped to 1.69±0.76 at 6 months and 0.71±0.70 at 12 months. At 18 months, based on data from 22 patients, the mean score was further reduced to 0.27±0.55. The decline from preoperative to 12 months scores was statistically significant ($p<0.001$), indicating substantial postoperative pain relief.

This study demonstrates a progressive improvement in Lysholm knee scores from the preoperative period to the 12-month follow-up. The mean preoperative score was 57.17±7.11, which increased to 83.54±3.55 at 6 months, and 89.23±2.53 at 12 months. At 18 months, available for 22 patients, the mean score reached 94.59±1.26. The improvement from preoperative to 12 months scores was statistically significant ($p<0.001$), indicating marked functional recovery after ACLR (Figure 3).

The study revealed a marked improvement in functional outcomes from the preoperative period to the 12-month postoperative follow-up. Initially, the majority of patients (83.33%, n=30) were classified as having a poor outcome, and none achieved good or excellent scores. At 12 months, 33.33% (n=12) attained excellent outcomes, and 61.11% (n=22) were rated as good. Only 5.55% (n=2) remained in the fair category, and no patients were classified as poor. The improvement was statistically significant ($p=0.031$), highlighting the effectiveness of ACLR in restoring knee function (Figure 4).

We reported mild pain or quadriceps weakness in 4 patients, which improved with physiotherapy. Two cases of hematoma at the graft site were managed with ice application.

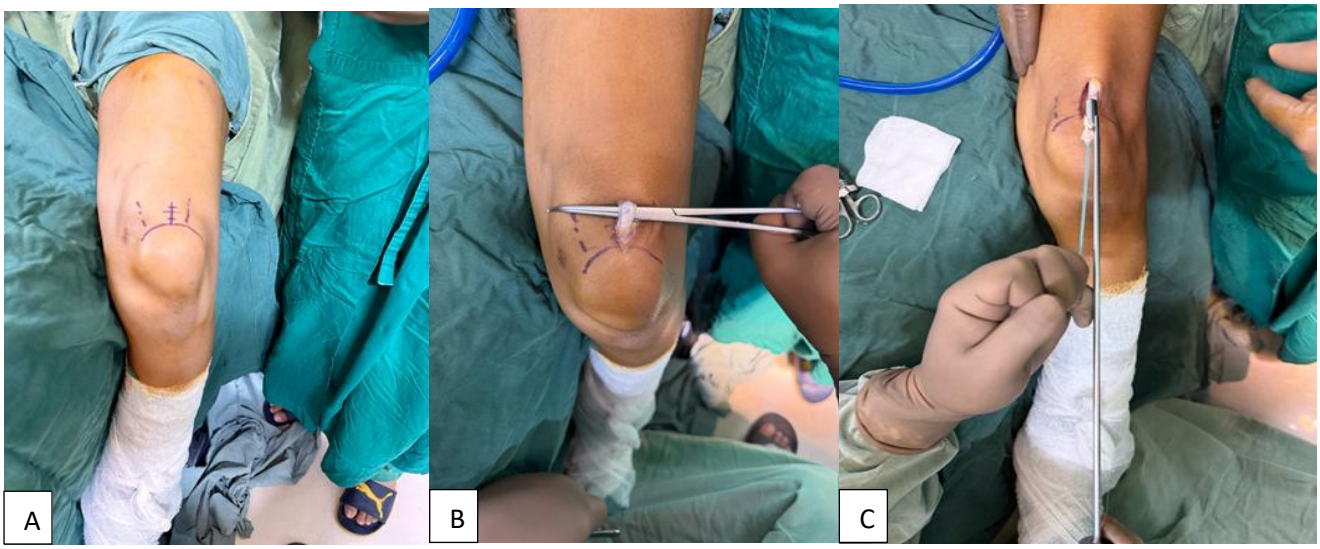

Figure 1 (A-C): Skin incision and harvesting of rectus femoris tendon autograft.

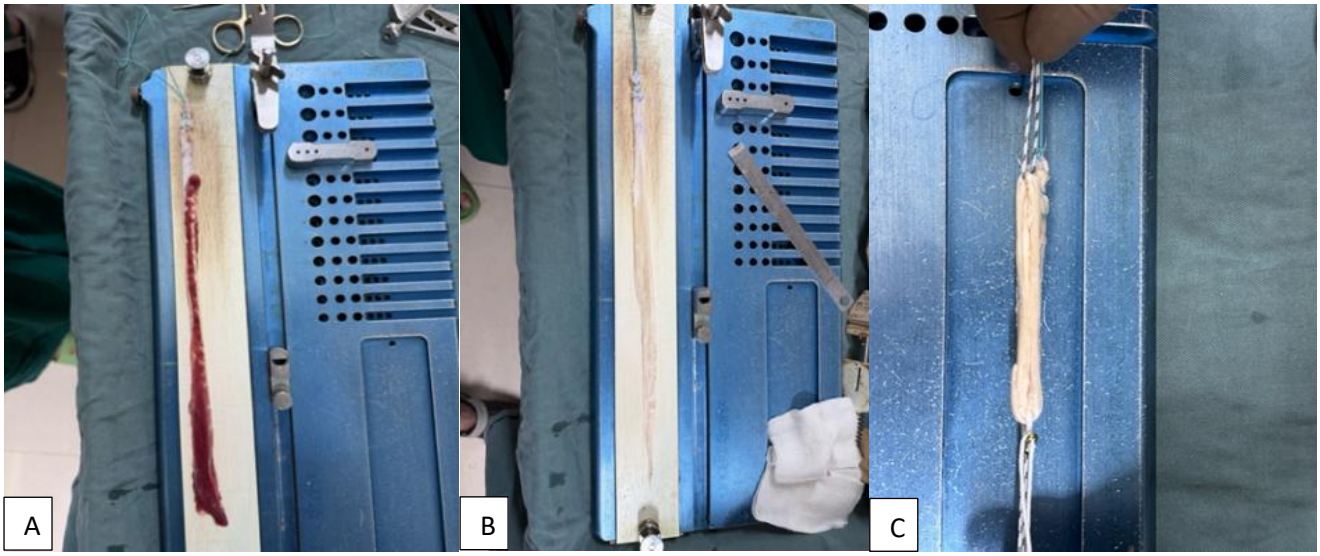

Figure 2 (A-C): Debridement of muscle tissue from the harvested RF tendon and a 3-fold graft.

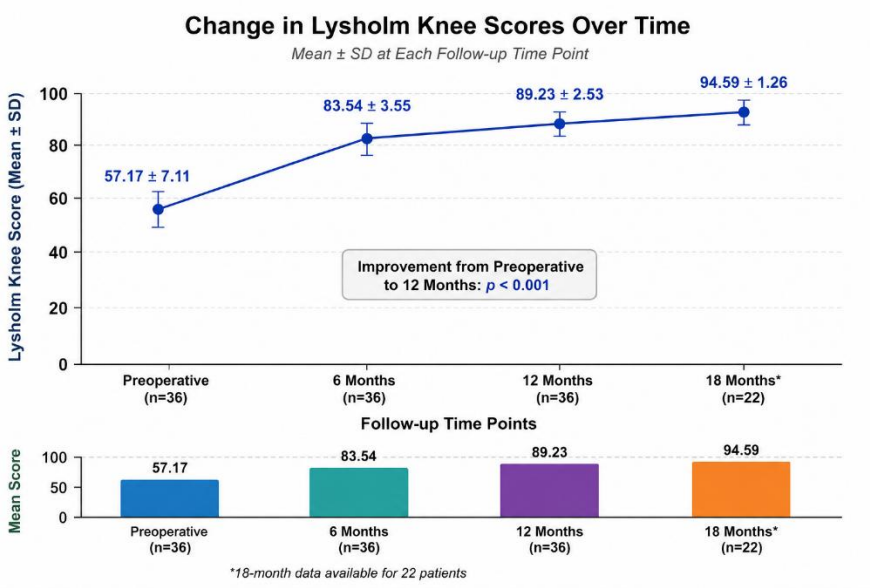

Figure 3: Pre- and post-operative Tegner Lysholm knee scores.

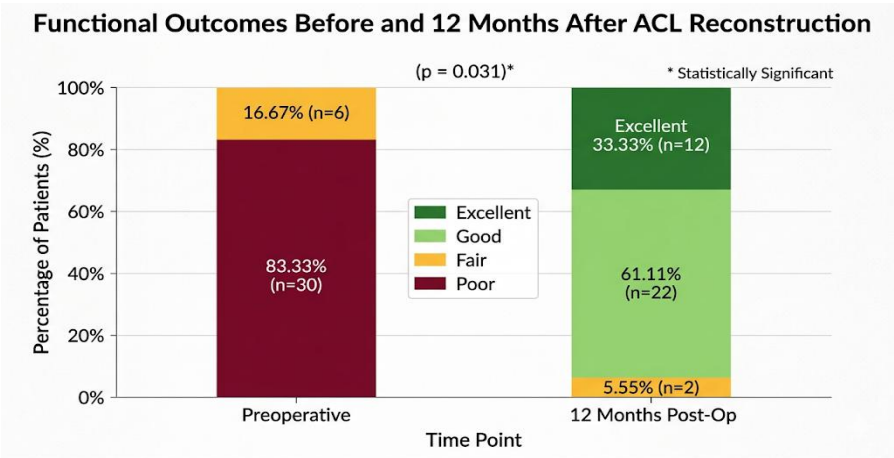

Figure 4: Functional outcome of ACLR with rectus femoris autograft.

Table 1: Characteristics of the study participants, (n=36).

Variables	Value
Total patients	36
Mean age (in years)	28.47 (18-45)
Gender	
Male	28 (78%)
Female	8 (22%)
Mechanism of injury	
Sports injury	28 (77.8%)
RTA	8 (22.2%)
Follow-up	
Mean follow-up	16.28 months
Range	12-18 months
>18 months follow-up	22 (61.1%)

DISCUSSION

Over the years, numerous grafts with their harvesting techniques have been introduced to enhance the success of ACLR. Assessing the functional outcomes of these graft options is crucial for ensuring that surgical methods remain aligned with the latest advancements. BTB was the gold standard for ACLR, particularly among the elite athletes and players. However, hamstring and other soft tissue autograft became popular later due to good functional outcomes. Recently, there has been growing interest in using the rectus femoris and superficial QT autograft for ACLR due to easier techniques of graft harvesting and better functional outcomes.[16,18-21]

There are only a few studies in the literature regarding functional outcome of ACLR using the RFG. However, many studies have shown good functional outcomes, high stability, and low harvest morbidity in case of ACLR with full thickness QT autograft.[3,5,12,22] This study evaluated the clinical and functional outcomes of arthroscopic ACLR with rectus femoris autograft in a cohort of 36 patients with isolated ACL injuries. The findings demonstrated substantial and significant improvements after ACLR with rectus femoris autograft.

Choosing the appropriate graft is essential for achieving successful functional outcomes in arthroscopic ACLR. RFG has good tendon quality with parallel fibers and adjustable thickness.[6,9,18] In this study, the average diameter of the RFG graft after 3-fold was 8.19 mm (range, 7.5-9.5 mm). Research has shown that QT grafts are often better accepted by patients who need to retain hamstring strength, such as those engaged in skiing, playing soccer or other activities requiring strong hamstrings, and even among mature individuals with physically demanding jobs. Most of the patients in our study, sports injury was the leading cause of ACL tears (n=28) and almost all of them wanted to return to sports for playing soccer.

Individuals above 45 are more likely to develop complications such as osteoarthritis and early joint stiffness after ACL surgery. These complications can be challenging to differentiate from the effects of the surgery itself or from pre-existing degenerative changes in the knee. In our study, patients with a mean age of 28.47 years (range, 18-45 years) were included and we excluded patients with age more than 45 years. By excluding this age group, the study aimed to ensure that postoperative outcomes-such as pain, ROM, and functional recovery-could be attributed more confidently to the surgical intervention rather than to age-related joint degeneration. This approach aligns with other studies, which often focus on younger, more active populations to minimize confounding factors and to better assess the efficacy and safety of new surgical techniques. Nevertheless, evidence indicates that both hamstring and QT grafts can provide good clinical outcomes in elderly patients. Although there were no professional soccer players and athletes, our research showed good functional outcomes in recreational players and athletes in ACLR with RFG.[23,24]

Out of the 36 patients included in the study, 28 (78%) were male and 8 (22%) were female, indicating a clear male predominance within the study population. This suggests that ACL injuries in this cohort were significantly more common among males than females. Similar gender distributions have been reported in previous studies.[25,26] This consistent male predominance across studies may reflect higher levels of participation in high-risk physical activities and sports among males, which are known risk factors for ACL injury.

There are only a few published studies specifically addressing the use of the rectus femoris tendon (RFG) as a graft for primary ACLR. Nevertheless, limited research available in the literature suggest that the rectus femoris autograft is a suitable option for both primary and revision ACLR, demonstrating clinical efficacy and safety.[16,17,20,21] According to Tegner Lysholm Knee scoring scale, our findings in this retrospective observation also demonstrate a steady and significant improvement in knee function following ACLR with RFG. The mean preoperative score was 57.17±7.11, increasing to 89.23±2.53 at 12 months. At 18 months, based on data from 22 patients, the mean score further improved to 94.59±1.26. The improvement from preoperative to 12-month scores was statistically significant ($p<0.001$), indicating marked functional recovery. Functional outcomes based on the Lysholm Knee Score before and after surgery show a significant improvement from the preoperative period to the 12 and 18 months postoperatively. Initially, the majority of patients (n=31) were categorized as having poor outcomes, with none achieving good or excellent scores. By 12 months post-surgery, 12 patients attained excellent outcomes, and 22 patients were classified as good. Only 2 cases remained in the fair category, and no patients were rated as poor.

Changes in VAS scores in this study shows a consistent decrease in pain following ACLR. The mean preoperative VAS score was 3.17±1.07, which slightly declined to

2.83±1.18 at 1.5 months post-surgery, then significantly dropped to 1.69±0.76 at 6 months and 0.71±0.70 at 12 months. At 18 months, data from 22 patients showed a further reduction to a mean score of 0.27±0.55. These results highlight the effectiveness of ACLR in providing progressive and sustained pain reduction, contributing to improved patient comfort and recovery over time.

The QT autograft offers several benefits, including a minimally invasive harvest technique that doesn't require additional instruments and provides a longer graft length, suitable for multi-ligament or revision cases.[18] We harvested RFT graft with a average length of 30.72 cm in our cases. Complication rates and donor site morbidity are generally lower with QTs.[27,28] Using a rectus femoris autograft, donor site complaints were rare; only a few patients reported mild pain or quadriceps weakness in our study, which improved with physiotherapy. Two cases of hematoma at the graft site were managed with ice application.

The study's strengths include a uniform patient group, strict selection criteria, and consistent surgical technique performed by a single experienced knee surgeon. This minimizes variability and ensures reliable assessment of outcomes for ACLR with rectus femoris autograft. However, this study has several limitations, including its retrospective design, relatively small sample size, absence of a control group, and limited follow-up duration. Objective postoperative laxity measurements and quadriceps strength assessments were not routinely performed. Further prospective comparative studies with longer follow-up are necessary to validate these findings

CONCLUSION

Arthroscopic ACLR using rectus femoris autograft demonstrated favorable short-term clinical and functional outcomes with low complication rates in patients with isolated ACL injuries. The graft provided adequate dimensions and satisfactory postoperative recovery during follow-up. Although early results are encouraging, larger prospective comparative studies with long-term follow-up are required to further establish the efficacy, safety, and durability of rectus femoris autografts in ACLR.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Xie H, Fu Z, Zhong M, Deng Z, Wang C, Sun Y, et al. Effects of remnant preservation in anterior cruciate ligament reconstruction: a systematic review and meta-analysis. Front. Surg. 2022;9:952930.
2. Kacprzak B, Stańczak M, Surmacz J, Hagner-Derengowska M. Biophysics of ACL injuries. Orthop Rev. 2024;16:126041.
3. Ciceklidag M, Kaya I, Ayanoglu T, Ayas IH, Ozer M, Ataoglu MB, et al. Proprioception after primary repair of the anterior cruciate ligament. Am J Sports Med. 2024;52(5):1199-208.
4. Rabie A, Arafa MS, Bahloul M, Abdelbadie A. The single antegrade sling graft: a novel hamstring autograft technique for combined anterior cruciate ligament and anterolateral ligament reconstruction. Arch Orthop Trauma Surg. 2025;145(1):126.
5. Carmichael JR, Cross MJ. Why bone-patella tendon-bone grafts should still be considered the gold standard for anterior cruciate ligament reconstruction. Br J Sports Med. 2009;43:323-5.
6. Meena A, Farinelli L, Hoser C, Abermann E, Raj A, Hepperger C, et al. Revision ACL reconstruction using quadriceps, hamstring and patellar tendon autografts leads to similar functional outcomes but hamstring graft has a higher tendency of graft failure. Knee Surg Sports Traumatol Arthrosc. 2023;31:2461-8.
7. Andersson D, Samuelsson K, Karlsson J. Treatment of Anterior Cruciate Ligament Injuries with Special Reference to Surgical Technique and Rehabilitation: An Assessment of Randomized Controlled Trials. Arthrosc J Arthrosc Relat Surg. 2009;25:653-85.
8. Hossain MS, Chowdhury AZ, Mahmud CI, Hossain S, Alam S. Evaluation of functional outcome of arthroscopic isolated anterior cruciate ligament reconstruction with quadriceps tendon. Int J Res Orthop. 2025;11(1):42-7.
9. Barié A, Ehmann Y, Jaber A, Huber J, Streich NA. Revision ACL reconstruction using quadriceps or hamstring autografts leads to similar results after 4 years: Good objective stability but low rate of return to pre-injury sport level. Knee Surg. Sports Traumatol Arthrosc. 2019;27:3527-35.
10. Eggeling L, Breer S, Drenck TC, Frosch KH, Akoto R. Double-Layered Quadriceps Tendon Autografts Provide Lower Failure Rates and Improved Clinical Results Compared With Hamstring Tendon Grafts in Revision ACL Reconstruction. Orthop J Sports Med. 2021;9:23259671211046929.
11. Lee S, Seong SC, Jo CH, Han HS, An JH, Lee MC. Anterior Cruciate Ligament Reconstruction with Use of Autologous Quadriceps Tendon Graft. J Bone J Surg. 2007;89(S3):116-26.
12. Diermeier T, Tisherman R, Hughes J, Tulman M, Coffey EB, Fink C, et al. Quadriceps tendon anterior cruciate ligament reconstruction. Knee Surg Sports Traumatol Arthrosc. 2020;28:2644-56.
13. Andrikoula S, Tokis A, Vasiliadis H.S, Georgoulis A. The extensor mechanism of the knee joint: An anatomical study. Knee Surg Sports Traumatol. Arthrosc. 2006;14:214-20.
14. Lippe J, Armstrong A, Fulkerson JP. Anatomic Guidelines for Harvesting a Quadriceps Free Tendon Autograft for Anterior Cruciate Ligament Reconstruction. Arthrosc. J. Arthrosc. Relat. Surg. 2012;28:980-4.
15. Nguyen Quang Ton Q, Pham H, Bui D. Technique for

harvest of superficial quadriceps tendon autograft. Arthrosc Tech. 2024;13:e102920.
16. Rego MCF, Mameri ES, Barroso BG, Helito C, Franciozi CES. Anterior Cruciate Ligament Reconstruction with the Rectus Femoris Autograft-Results from the First 80 Patients. Orthop J Sports Med. 2024;12:11-4.
17. Huber T, Trieb K, Rath B, Frühwirth M, Hartenbach F. Revision Anterior Cruciate Ligament Reconstruction Using Rectus Femoris or Hamstring Tendon Shows Comparable Patient-Reported Outcome Measurements at Short-Term Follow-Up: A Retrospective Cohort Study. J Clin Med. 2025;14(10):3512.
18. Cottet VS, Alayane A, Mouarbes D, Pailhe R, Cavaignac E. The Quad 2.0 Technique: A Single Rectus Femoris Tendon Autograft Solution for Combined Anterior Cruciate Ligament and Double-Bundle Anterolateral Ligament Reconstruction. Arthrosc Techn. 2025;14(8):103669.
19. Raman R, Mishra BN, Sen A. A minimally invasive and simple technique of superficial quadriceps tendon graft harvesting. Arthrosc Tech. 2022;11:e2347-55.
20. Raman R, Hazra S, Lodh U, Roy DS. Functional Outcome of Single Bundle ACL Reconstruction with Superficial Quadriceps Tendon Graft in an Indian Cohort: A 3-Year Study. Indian J Orthop. 2026;60(3):570-7.
21. Dhariwal VH, Rajamanickam P, Kannaiyan M, Iyyappan A. Comparative functional outcome study of superficial quadriceps tendon versus hamstring tendon autograft in arthroscopic anterior cruciate ligament reconstruction. J Arthroscop Surg Sports Med. 2026;7(1):51-5.
22. Slone HS, Romine SE, Premkumar A, Xerogeanes JW. Quadriceps Tendon Autograft for Anterior Cruciate Ligament Reconstruction: A Comprehensive Review of Current Literature and Systematic Review of Clinical Results. Arthrosc J Arthrosc Relat Surg. 2015;31:541-54.
23. Nuelle CW. Editorial commentary: Anterior cruciate ligament graft selection is best tailored to individual patient sport and activity level. Arthroscopy. 2025;41:1521-2.
24. Meena A, Farinelli L, D'Ambrosi R, Runer A, Attri M, Rudraraju RT, et al. Both hamstring and quadriceps tendon autografts offer similar functional outcomes after arthroscopic anterior cruciate ligament reconstruction in patients aged 50 years or older. Arthroscopy. 2024;41:1512-20.
25. Zhang Q, Zhang S, Cao X, Liu L, Liu Y, Li R. The effect of remnant preservation on tibial tunnel enlargement in ACL reconstruction with hamstring autograft: a prospective randomized controlled trial. Knee Surg Sports Traumatol Arthr. 2014;22(1):166-73.
26. Shohat N, Lindner D, Tamir E, Beer Y, Agar G. Prospective comparison between remnant-preserving augmentation and double-bundle reconstruction in anterior cruciate ligament tears. Isr Med Assoc J. 2017;19(6):355-9.
27. Lund B, Nielsen T, Faunø P, Christiansen SE; Lind M. Is Quadriceps Tendon a Better Graft Choice Than Patellar Tendon? AProspective Randomized Study. Arthrosc. J. Arthrosc. Relat. Surg. 2014;30:593-8.
28. Mouarbes D, Menetrey J, Marot V, Courtot L, Berard E, Cavaignac E. Anterior Cruciate Ligament Reconstruction:A Systematic Review and Meta-analysis of Outcomes for Quadriceps Tendon Autograft Versus Bone-Patellar Tendon-Bone andHamstring-Tendon Autografts. Am J Sports Med. 2019;47:3531-40.

Cite this article as: Mahmud CI, Selimullah AZM, Alinoor M. Short-term follow-up of anterior cruciate ligament reconstruction using rectus femoris autograft: a retrospective cohort study. Int J Res Orthop 2026;12:943-9.