



Original Article

## Functional Outcomes of Arthroscopic Single Bundle Anterior Cruciate Ligament Reconstruction Using Semitendinosus Graft Augmented with Extra Articular Tenodesis in Young Patients – A Prospective Clinical Study

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### ABSTRACT

**Background:** Anterior cruciate ligament (ACL) injuries are common among young, active individuals and often lead to knee instability and functional impairment. While arthroscopic ACL reconstruction is the standard treatment, residual rotational instability remains a concern. Lateral extra-articular tenodesis (LET) has been proposed as an adjunct to improve rotational stability and functional outcomes.

**Aim:** To evaluate the functional outcomes of arthroscopic single-bundle ACL reconstruction using a semitendinosus graft augmented with lateral extra-articular tenodesis in young patients.

**Materials and Methods:** This prospective clinical study was conducted on 30 patients aged 18–45 years with ACL rupture at a tertiary care center from June 2024 to December 2025. All patients underwent arthroscopic single-bundle ACL reconstruction using a semitendinosus autograft combined with LET. Patients were followed up at 6 weeks, 3 months, 6 months, and 12 months. Clinical assessment included Lachman, anterior drawer, and pivot shift tests. Functional outcomes were evaluated using IKDC and Lysholm scores. Statistical analysis was performed using SPSS, with  $p < 0.05$  considered significant.

**Results:** The mean age of patients was  $26.57 \pm 6.279$  years, with male predominance (76.7%). Non-contact injuries accounted for 60% of cases. Significant improvement in knee stability was observed, with all patients achieving Grade 0 Lachman and negative anterior drawer tests at 12 months. The mean IKDC score improved from  $41.27 \pm 2.58$  preoperatively to  $90.80 \pm 2.80$  at 12 months ( $p < 0.001$ ), and the mean Lysholm score improved from  $47.27 \pm 2.86$  to  $93.37 \pm 4.12$  ( $p < 0.001$ ). At final follow-up, 86.7% of patients achieved excellent Lysholm scores. Complications were minimal, with only 13.4% reporting mild issues such as stiffness or rotational laxity.

**Conclusion:** Arthroscopic single-bundle ACL reconstruction with semitendinosus graft augmented by LET provides excellent functional outcomes and improved rotational stability with minimal complications. It is a safe and effective technique for managing ACL injuries in young, active patients.

## INTRODUCTION

Injuries to the anterior cruciate ligament (ACL) are among the most common ligamentous injuries of the knee, particularly affecting young, active individuals involved in sports requiring pivoting, cutting, and sudden deceleration movements. The incidence of ACL injuries has increased significantly over recent years due to greater participation in recreational and competitive sports, especially among young adults (1). These injuries often result in knee instability, functional impairment, and an increased risk of secondary meniscal and chondral damage if left untreated (2).

The ACL plays a crucial role in maintaining knee stability by preventing anterior translation of the tibia and controlling rotational movements. Rupture of the ACL leads to altered knee biomechanics, predisposing the joint to early degenerative changes and osteoarthritis (3). Consequently, restoration of knee stability and function is essential, particularly in young and physically active patients who wish to return to their pre-injury activity levels.

Arthroscopic ACL reconstruction has become the gold standard treatment for symptomatic ACL-deficient knees. Among various techniques, single-bundle reconstruction remains widely practiced due to its reproducibility, satisfactory clinical outcomes, and technical simplicity (4). Hamstring tendon autografts, particularly the semitendinosus tendon, are commonly used because of their favorable biomechanical properties, reduced donor site morbidity, and adequate graft strength (5).

Despite advances in surgical techniques, residual rotational instability remains a concern following isolated intra-articular ACL reconstruction. This has led to renewed interest in augmenting ACL reconstruction with lateral extra-articular procedures, such as lateral extra-articular tenodesis (LET), to improve rotational stability (6). LET aims to reinforce the anterolateral structures of the knee, thereby reducing pivot shift phenomena and graft failure rates, particularly in high-risk patients (7).

Recent studies have demonstrated that combining ACL reconstruction with LET can significantly improve functional outcomes and reduce the incidence of graft rupture, especially in young, active individuals engaged in high-demand sports (8). The addition of LET is particularly beneficial in patients with high-grade pivot shift, generalized ligamentous laxity, or those returning to competitive sports (9).

Functional outcome assessment following ACL reconstruction is commonly performed using validated scoring systems such as the International Knee Documentation Committee (IKDC) score, Lysholm knee score, and Tegner activity scale. These tools provide objective and subjective evaluation of knee function, stability, and return to activity (10).

Given the increasing interest in combined intra-articular and extra-articular reconstruction techniques, this study aims to evaluate the functional outcomes of arthroscopic single-bundle ACL reconstruction using semitendinosus graft augmented with lateral extra-articular tenodesis in young patients. The study focuses on clinical stability, functional recovery, and complication rates over a follow-up period of one year.

## MATERIALS AND METHODS

### Study Design and Setting

This was a prospective clinical study conducted in the Department of Orthopaedics at B.L.D.E. (Deemed to be University), Shri B.M. Patil Medical College, Hospital & Research Centre, Vijayapura, Karnataka, India. The study period extended from June 2024 to December 2025.

### Study Work Plan

The study was conducted in sequential phases as outlined below:

Work Plan	% Allocation of Study Time	Duration
Understanding the problem and preparation of questionnaire	5–10%	June 2024 – August 2024
Pilot study, validation of questionnaire, data collection and manipulation	Up to 80%	September 2024 – June 2025
Analysis and interpretation	5–10%	July 2025 – September 2025
Dissertation write-up and submission	5–10%	October 2025 – December 2025

### Sample Size

The sample size was calculated based on the anticipated proportion of positive outcomes following augmented surgery in patients with ACL tears, assumed to be **94.6%**. Using a 95% confidence level and 8% absolute precision, the minimum required sample size was **30 patients**, calculated using the formula:

$$n = \frac{Z^2 \cdot p \cdot q}{d^2} = \frac{1.96^2 \cdot 0.946 \cdot 0.054}{0.08^2} = 30$$

Where:

- **Z** = Z statistic at  $\alpha$  level of significance
- **p** = anticipated proportion of positive outcomes (94.6%)
- **q** = 100 – p
- **d** = absolute error (8%)

### Inclusion Criteria

- Patients aged 18–45 years
- Clinically and MRI-confirmed anterior cruciate ligament (ACL) rupture with rotational instability

### Exclusion Criteria

- Multi-ligament knee injuries
- Associated neurovascular injuries
- Polytrauma
- Medically unfit for surgery
- Chondral lesions modifying post-operative rehabilitation (grade III & IV)
- Meniscal injuries requiring repair

### Patient Selection and Recruitment

Patients presenting with knee injuries were evaluated clinically and radiologically. Those meeting inclusion criteria were counseled regarding their injury, treatment options, surgical procedures, risks, benefits, and follow-up requirements. Written informed consent was obtained prior to enrollment.

### Pre-Operative Rehabilitation

- Assessment of pre-operative knee strength and range of motion (ROM)
- Instruction in static and dynamic quadriceps exercises
- Explanation of post-operative rehabilitation protocols

### Anaesthesia and Pre-Operative Examination

Patients received spinal or epidural anaesthesia. Clinical tests (Lachman, anterior/posterior drawer, pivot shift) were performed after anaesthesia. A pneumatic tourniquet was applied to the proximal thigh after limb elevation and exsanguination. Ceftriaxone + sulbactam (1.5 g) was administered prophylactically.

### Arthroscopy Portals

- Anterolateral portal: Viewing portal, located lateral to patellar tendon
- Anteromedial portal: Working portal, used for probing and instrument insertion
- Accessory anteromedial portal: Created medial to the anteromedial portal for femoral tunnel drilling

### Diagnostic Arthroscopy

Performed to confirm ACL tear and identify other intra-articular lesions. Loose bodies were removed, and meniscal tears repaired as needed.

### Graft Harvest and Preparation

- Semitendinosus tendon autograft harvested via oblique incision medial to tibial tuberosity
- Tendon cleaned, trimmed, whipstitched, quadrupled, and measured using graft sizer
- Prepared graft marked for correct intra-articular placement

### Femoral Tunnel Preparation

- Identified anatomical ACL footprint on lateral femoral condyle using Resident's Ridge and Bifurcate Ridge
- Tunnel drilled using femoral aimer or freehand Beath pin at 120° hyperflexion
- Sequential reaming to match graft diameter and intra-articular length (minimum 25 mm)

### **Tibial Tunnel Preparation**

- Tibial guide used to position tunnel slightly medial to ACL tibial footprint and 2–3 mm posterior to lateral meniscus anterior horn
- Tunnel reamed to match graft diameter; edges smoothed with shaver

### **Graft Passage and Fixation**

- Quadrupled semitendinosus graft passed through adjustable loop endobutton in femoral tunnel
- Graft tensioned and cycled 20–30 times before tibial fixation
- Tibial base plate and interference screw used to secure graft with knee at 10° flexion

### **Lateral Extra-Articular Tenodesis (LET)**

- Iliotibial band (ITB) strip (1 cm × 8–10 cm) harvested while preserving distal attachment at Gerdy's tubercle
- Passed deep to lateral collateral ligament (LCL) and fixed to lateral femoral condyle using a bone tunnel and interference screw
- Knee ranged to ensure appropriate tension and full ROM

### **Postoperative Management**

- IV antibiotics for 72 hours, then oral for 5–7 days
- Pain managed with multimodal analgesia
- DVT prophylaxis as per institutional protocol
- Early exercises (ankle pumps, quadriceps setting, straight leg raises) with brace locked in extension
- Partial weight-bearing with crutches for 4 weeks
- Structured physiotherapy with phased rehabilitation:
  - Weeks 0–6: Pain control, swelling reduction, regaining passive extension, quadriceps activation
  - Weeks 6–12: Full ROM, strength and proprioception improvement, cycling, pool exercises
  - Weeks 12–24: Aggressive strengthening, sport-specific drills, running, agility training
- Return to sport after 6–9 months based on functional milestones and strength criteria

### **Follow-Up and Outcome Assessment**

- Follow-ups at 6 weeks, 3 months, 6 months, and 1 year
- Clinical examination including ROM, stability tests, and complication monitoring
- Functional outcomes assessed using:
  - IKDC subjective knee evaluation
  - Lysholm knee scoring scale
  - Tegner activity scale
- Radiographs at 6 months and 1 year to assess tunnel positions, widening, osteolysis, and degenerative changes

### **Data Management and Statistical Analysis**

- Data recorded in pre-designed case record forms and entered into Microsoft Excel
- Statistical analysis performed using SPSS 20
- Continuous variables expressed as mean ± SD or median (range); categorical variables as frequency (%)
- Repeated measures ANOVA or Friedman test used to assess changes over follow-up
- $p < 0.05$  considered statistically significant; two-tailed tests applied

### **Ethical Considerations**

- Study approved by Institutional Ethics Committee of BLDE (Deemed to be University), Shri B.M. Patil Medical College, Hospital & Research Centre, Vijayapura
- Conducted according to Declaration of Helsinki and Good Clinical Practice guidelines
- Written informed consent obtained; patient confidentiality maintained

## **RESULTS AND OBSERVATIONS**

The present study was conducted in the department of Orthopaedics at Shri Bm Patil Medical College Hospital & Research Center, Vijayapura from March 2024 to December 2025 to study the functional outcomes of arthroscopic single bundle anterior cruciate ligament reconstruction using semitendinosus graft augmented with lateral extraarticular tenodesis in young patients. Total of 30 patients were included in the study.

**Table; 1 Demographic Characteristics of Study Participants (N=30)**

Characteristic	Category	Frequency (n)	Percentage (%)
Age (years)	18–25	5	16.7
	26–30	17	56.7
	31–40	8	26.7
Mean ± SD	—	26.57	6.279
Gender	Male	23	76.7
	Female	7	23.3

The demographic analysis of the 30 patients showed that the majority were young adults, predominantly in the 26–30 years age group (56.7%, n=17), followed by 31–40 years (26.7%, n=8) and 18–25 years (16.7%, n=5). The mean age was 26.57 ± 6.279 years, indicating a cohort of predominantly young, active individuals. The gender distribution revealed a clear male predominance, with 76.7% (n=23) males and 23.3% (n=7) females.

**Table; 2 Side Affected and Occupation of Study Participants (N=30)**

Characteristic	Category	Frequency (n)	Percentage (%)
Side Affected	Right	17	56.7
	Left	13	43.3
Occupation	Student	14	46.7
	Professional	8	26.7
	Athlete	6	20.0
	Housewife	1	3.3
	Swimmer	1	3.3

The laterality of ACL injuries showed a slight predominance of the right knee (56.7%, n=17) compared to the left (43.3%, n=13), indicating no strong predilection for either side. Regarding occupational distribution, the majority of participants were students (46.7%, n=14), followed by professionals (26.7%, n=8) and athletes (20.0%, n=6). One participant each was a housewife and a swimmer (3.3% each), reflecting a diverse cohort in terms of activity levels and occupation.

**Table; 3 Injury Characteristics of Study Participants (N=30)**

Characteristic	Category	Frequency (n)	Percentage (%)
Mechanism of Injury	Non-contact	18	60.0
	Contact	12	40.0
Sport Type	Football	8	26.7
	Cricket	6	20.0
	Basketball	5	16.7
	Volleyball	3	10.0
	Handball	3	10.0
	Soccer	2	6.7
	Badminton	1	3.3
	Kabadi	1	3.3

	Running	1	3.3
Time from Injury to Surgery	—	—	Mean $\pm$ SD: 4.73 $\pm$ 1.760 months

The mechanism of ACL injury was predominantly non-contact (60.0%, n=18), with contact injuries accounting for 40.0% (n=12). Among sports, football was the most common cause (26.7%, n=8), followed by cricket (20.0%), basketball (16.7%), volleyball and handball (10.0% each), soccer (6.7%), and badminton, kabadi, and running (3.3% each), reflecting the predominance of cutting and pivoting sports in ACL injuries. The mean duration from injury to surgery was 4.73  $\pm$  1.760 months, indicating a relatively prompt surgical intervention in this cohort.

**Table; 4 Surgical Details of Study Participants (N=30)**

Parameter	Mean $\pm$ SD
Graft Diameter	8.000 $\pm$ 0.415 mm
Surgery Duration	88.53 $\pm$ 7.427 minutes

The mean graft diameter used for ACL reconstruction was 8.000  $\pm$  0.415 mm, reflecting consistent and adequate graft sizing across all patients. The mean surgical duration was 88.53  $\pm$  7.427 minutes, indicating efficient operative performance with minimal variability in procedure time.

**Table; 5 Clinical Examination Findings (N=30)**

Test	Time Period	Grade / Result	Frequency (n)	Percentage (%)
Lachman Test	Preoperative	Grade 0	0	0
		Grade 1	0	0
		Grade 2	22	73.3
		Grade 3	8	26.7
	3 Months	Grade 0	1	3.3
		Grade 1	29	96.7
		Grade 2	0	0
		Grade 3	0	0
	6 Months	Grade 0	26	86.7
		Grade 1	4	13.3
		Grade 2	0	0
		Grade 3	0	0
12 Months	Grade 0	30	100	
	Grade 1	0	0	
	Grade 2	0	0	
	Grade 3	0	0	
Anterior Drawer Test	Preoperative	Positive	30	100
		Negative	0	0
	3 Months	Positive	0	0
		Negative	30	100

	12 Months	Positive	0	0	
		Negative	30	100	
Pivot Shift Test	Preoperative	Grade 0	0	0	
		Grade 1	0	0	
		Grade 2	21	70.0	
		Grade 3	9	30.0	
	3 Months	Grade 0	26	86.7	
		Grade 1	2	6.7	
		Grade 2	2	6.7	
		Grade 3	0	0	
	12 Months	Grade 0	28	93.3	
		Grade 1	1	3.3	
		Grade 2	1	3.3	
		Grade 3	0	0	

**Table; 6 Functional Outcomes of Study Participants (N=30)**

Functional Score	Time Period	Mean ± SD	p-value	Category applicable (if applicable)	Frequency(n)	Percentage(%)
IKDC Score	Preoperative	41.27 ± 2.58	—	—	—	—
	3 Months	67.77 ± 2.97	<0.001*	—	—	—
	6 Months	82.53 ± 3.58	<0.001*	—	—	—
	12 Months	90.80 ± 2.80	<0.001*	—	—	—
Lysholm Score	Preoperative	47.27 ± 2.86	—	—	—	—
	3 Months	72.17 ± 4.00	<0.001*	—	—	—
	6 Months	86.90 ± 4.98	<0.001*	—	—	—
	12 Months	93.37 ± 4.12	<0.001*	—	—	—
Lysholm Score Category	12 Months	—	—	Fair (65–83)	2	6.7
	12 Months	—	—	Good (84–94)	2	6.7
	12 Months	—	—	Excellent (95–100)	26	86.7

**Table; 7 Postoperative Outcomes and Associations (N=30)**

Parameter	Time / Category	Mean $\pm$ SD / Frequency (n)	Percentage (%)	p-value
Range of Motion – Flexion ( $^{\circ}$ )	6 Weeks	111.63 $\pm$ 3.34	—	<0.001*
	3 Months	126.50 $\pm$ 3.29	—	<0.001*
	6 Months	132.50 $\pm$ 2.57	—	<0.001*
	12 Months	137.97 $\pm$ 2.22	—	<0.001*
Pain VAS Score	6 Weeks	2.87 $\pm$ 0.78	—	—
Complications	Rotational laxity	2	6.7	—
	Stiffness	2	6.7	—
	None	26	86.7	—
Association: Age Category vs Final Lysholm Score	18–25 years	Fair 0, Good 1, Excellent 4	0%, 50%, 15.4%	0.266
	26–30 years	Fair 1, Good 0, Excellent 16	50%, 0%, 61.5%	
	31–40 years	Fair 1, Good 1, Excellent 6	50%, 50%, 23.1%	
Association: Mechanism of Injury vs Final Lysholm Score	Contact	Fair 2, Good 2, Excellent 8	100%, 100%, 30.8%	0.006*
	Non-contact	Fair 0, Good 0, Excellent 18	0%, 0%, 69.2%	

## DISCUSSION

Anterior cruciate ligament (ACL) injuries are a significant cause of functional disability in young, active individuals, particularly those involved in sports requiring pivoting and rotational movements. The present prospective clinical study evaluated the functional outcomes of arthroscopic single-bundle ACL reconstruction using a semitendinosus graft augmented with lateral extra-articular tenodesis (LET) in 30 young patients, with follow-up up to one year.

In the present study, the majority of patients belonged to the 26–30 years age group (56.7%), with a mean age of 26.57  $\pm$  6.279 years. This finding is consistent with previous studies, which report a higher incidence of ACL injuries among young, physically active individuals (1,2). The predominance of males (76.7%) observed in this study aligns with existing literature, reflecting higher exposure of males to high-risk sports and activities (3).

Non-contact injuries accounted for 60% of cases in this study, which is in agreement with earlier reports indicating that most ACL injuries occur due to non-contact mechanisms such as sudden deceleration, pivoting, or landing from a jump (1). Football and cricket were the most common sports associated with injury, highlighting the role of high-demand athletic activities in ACL rupture.

The mean time from injury to surgery in this study was 4.73  $\pm$  1.760 months, indicating relatively early surgical intervention. Early reconstruction has been associated with improved functional outcomes and reduced risk of secondary meniscal and chondral damage (2,4).

Surgically, the use of a quadrupled semitendinosus graft with a mean diameter of 8.0 mm ensured adequate graft strength and consistency. Previous biomechanical studies have demonstrated that hamstring grafts of  $\geq$ 8 mm diameter are associated with lower failure rates and better functional outcomes (5). The mean surgical duration of 88.53  $\pm$  7.427 minutes reflects procedural efficiency and standardization of the surgical technique.

Clinical examination findings in this study demonstrated significant improvement in knee stability postoperatively. Preoperatively, all patients had positive Lachman and anterior drawer tests, indicating ACL insufficiency. At 12 months follow-up, 100% of patients achieved Grade 0 Lachman and negative anterior drawer test, reflecting excellent restoration of anterior stability. Similarly, pivot shift test results improved markedly, with 93.3% achieving Grade 0 at 12 months. These findings are comparable to studies emphasizing improved rotational stability with combined ACL reconstruction and LET (6,7).

Functional outcomes, as assessed by IKDC and Lysholm scores, showed statistically significant improvement over time ( $p < 0.001$ ). The mean IKDC score improved from 41.27 preoperatively to 90.80 at 12 months, while the Lysholm score improved from 47.27 to 93.37. These results are consistent with previous studies reporting excellent functional recovery following ACL reconstruction (8,10). Notably, 86.7% of patients achieved excellent Lysholm scores at final follow-up, indicating high levels of patient satisfaction and return to activity.

The addition of lateral extra-articular tenodesis (LET) likely contributed to enhanced rotational stability and improved functional outcomes. The STABILITY study by Getgood et al. demonstrated that the addition of LET significantly reduces graft failure rates and improves rotational control, particularly in high-risk populations (8). Similarly, Sonnery-Cottet et al. highlighted the role of LET in reducing pivot shift and improving knee biomechanics (6).

Range of motion (ROM) improved progressively in this study, with mean flexion increasing from 111.63° at 6 weeks to 137.97° at 12 months ( $p < 0.001$ ). Early rehabilitation and structured physiotherapy protocols likely contributed to these favorable outcomes. Pain levels were minimal, with a mean VAS score of 2.87 at 6 weeks, indicating effective postoperative pain management.

Complications were minimal in this study, with only 6.7% of patients experiencing rotational laxity and 6.7% experiencing stiffness. No major complications such as infection or graft failure were observed. These findings are comparable to existing literature, which reports low complication rates with arthroscopic ACL reconstruction (9).

The association analysis revealed no statistically significant relationship between age and final functional outcome ( $p = 0.266$ ), suggesting that good outcomes can be achieved across different age groups within the studied range. However, a significant association was found between mechanism of injury and functional outcome ( $p = 0.006$ ), with non-contact injuries showing better outcomes. This may be due to less associated soft tissue damage in non-contact injuries.

Overall, the findings of this study suggest that arthroscopic single-bundle ACL reconstruction using a semitendinosus graft augmented with LET provides excellent clinical and functional outcomes in young patients. The procedure effectively restores knee stability, improves functional scores, and allows return to pre-injury activity levels with minimal complications.

## CONCLUSION

This prospective study demonstrates that arthroscopic single-bundle ACL reconstruction using a semitendinosus autograft augmented with lateral extra-articular tenodesis results in significant improvement in knee stability and function. Objective stability tests normalized, and functional scores (IKDC and Lysholm) showed statistically significant improvement ( $p < 0.001$ ) over one year. A high proportion of patients achieved excellent functional outcomes with minimal complications, indicating that the addition of LET effectively enhances rotational stability.

Thus, this combined surgical approach is a safe, reliable, and effective option for managing ACL injuries in young, active patients, facilitating optimal functional recovery and return to activity.

## REFERENCES

1. Griffin LY, Agel J, Albohm MJ, et al. Noncontact anterior cruciate ligament injuries: risk factors and prevention strategies. *J Am Acad Orthop Surg.* 2000;8(3):141–150.
2. Frobell RB, Roos HP, Roos EM, et al. A randomized trial of treatment for acute ACL tears. *N Engl J Med.* 2010;363(4):331–342.
3. Lohmander LS, Englund PM, Dahl LL, Roos EM. The long-term consequence of ACL injury. *Am J Sports Med.* 2007;35(10):1756–1769.
4. Fu FH, Bennett CH, Lattermann C, Ma CB. Current trends in ACL reconstruction. *J Bone Joint Surg Am.* 1999;81(10):147–157.
5. Samuelsson K, Andersson D, Karlsson J. Treatment of ACL injuries with hamstring grafts. *Knee Surg Sports Traumatol Arthrosc.* 2009;17(3):231–238.
6. Sonnery-Cottet B, Saithna A, Cavalier M, et al. Anterolateral ligament reconstruction and LET. *Am J Sports Med.* 2015;43(2):337–345.
7. Getgood A, Brown C, Lording T, et al. The anterolateral complex of the knee. *Knee Surg Sports Traumatol Arthrosc.* 2019;27(2):363–372.
8. Getgood AMJ, Bryant DM, Litchfield R, et al. ACL reconstruction with or without LET (STABILITY study). *Lancet.* 2020;395(10221):405–415.
9. Devitt BM, Bell SW, Ardern CL, et al. The role of LET in ACL reconstruction. *Am J Sports Med.* 2017;45(2):347–354.
10. Irrgang JJ, Anderson AF, Boland AL, et al. Development and validation of IKDC score. *Am J Sports Med.* 2001;29(5):600–613.