

A PROSPECTIVE STUDY OF FUNCTIONAL OUTCOME OF ACL RECONSTRUCTION WITH QUADRUPLED SEMITENDINOSUS TENDON AUTOGRAFT USING ENDOBUTTON AND BIOABSORBABLE INTERFERENCE SCREW

Orthopaedics

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ABSTRACT

Background and Objectives—A wide variety of techniques and grafts are now available for the instrumentation has enabled surgeon to achieve better result however varying opinions exists among interferencetscrew in tibial tunnel. Tibial tunnel is a literature proven excellent technique. We have undertaken this study to analyze the functional outcome and to study various complications in or experienced with this procedure and to review the previous literature based on this study **Method**—This is a prospective study of patient with ACL injury who underwent arthroscopic ACL reconstruction using quadriplett semitendinosus ang Gracilis autograft. Post operatively all patients were regular interval. LYSHOLM knee scoring was used to functionally asses the patient. **Result**—88% patients had excellent and good functional outcome. 77% patient returned to pre injury level. **Conclusion**—We conclude that the functional outcome of arthroscopic ACL reconstruction using quadriplett semi tendinosus and Gracilis graft is excellent to good (88%). With proper patientf selection and physiotherapy protocol full occupational and recreational activities can be expected or most of the patients within 6 months of procedure.

KEYWORDS

Anterior Cruciate Ligament, Lysholm score

INTRODUCTION

The knee joint is frequently involved in sports injuries, road traffic accidents and during daily living activities. Anterior cruciate ligament is a very commonly involved ligament in these injuries. More and more cases of ACL tear are being diagnosed nowadays due to the increasing awareness among orthopaedic surgeon about importance of knee ligament injuries and also increasing availability of MRI as diagnostic tool.

Anterior cruciate ligament is one of the most important intra-articular ligaments of the knee joint. It is an intra-articular, extrasynovial structure present in the central complex of knee joint. It functions in concert with all other anatomical structures in the knee joint to control and limit motion and to maintain both static and dynamic equilibrium.

Arthroscopic-assisted reconstruction of the anterior cruciate ligament (ACL) usinghamstring grafts is a well known and widely accepted surgical procedure. The use ofhamstring tendon autograft has been perceived to have less post-operative morbidities.

MATERIAL AND METHOD

The prospective study is conducted in Department of Orthopaedics, J.L.N. Medical College and Attached Group of Hospitals, Ajmer from November 2019 to October 2021.

The study was conducted on 30 patients with clinical and radiological deficiency of ACL.

Inclusion Criteria

- Age 15–45 years
- Isolated ACL injuries
- ACL injuries with meniscal injuries

Exclusion Criteria

- ACL injuries with intraarticular fractures
- Multiligamentus injuries
- Infected knee joint
- Previous surgeries in ipsilaretal knee

Clinical Assesment

The following specific tests are performed for diagnosing anterior cruciate ligament deficiency:

- 1) Lachman's test
- 2) Anterior drawer test
- 3) Lateral pivot shift maneuver

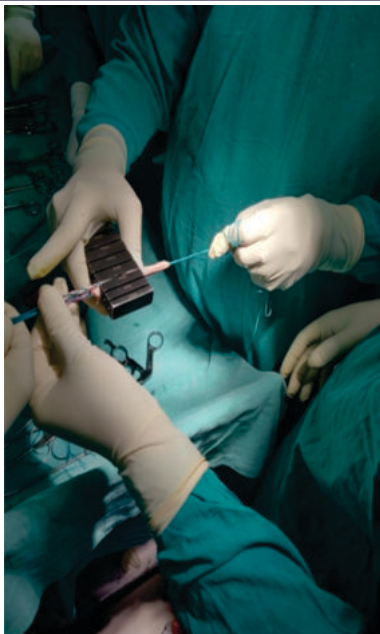
Radiographic Assesment

- Anteroposterior and lateral radiographs of affected knee
- MRI

Surgical Technique

All patients were operated by using anteromedial portal technique. Arthroscopy assisted ACL reconstruction with single bundle quadrupled semitendinosus tendon autograft from ipsilateral limb using Endobutton (Smith and Nephew), cortical suspensary fixation method for femoral side and Bioabsorbable interference screw (Smith and Nephew), Aperture fixation method for tibial side.





Follow Up

The Patients were followed up at regular intervals at 06 weeks, 3 months, 6 months, and at 1 year post operatively. A standard rehabilitation protocol was followed (after Reid, 1992) for all patients. All the patients were subjected to manual laxity testing (Lachman, pivot shift test) and objective laxity is measured by rolimeter. At these intervals all the patients were evaluated by the modified Lysholm knee scoring system (1985). All the patients were also analyzed for their symptoms pre and post operatively.

RESULTS

Score (Grading)	Pre-operative score		Post-operative score (2 year post op)	
	Number	Percentage	Number	Percentage
Less than 60 (Poor)	21	70%	1	3%
61-76 (Fair)	9	30%	3	9%
77-90 (Good)	0	0%	17	58%
> 90 (Excellent)	0	0%	9	30%
Total	120	100%	120	100%

Result of ACL reconstruction with quadrupled semitendinosus autograft were evaluated by lysolm score preoperatively And 6 month of rehabilitation and the results after 6 months were observed 30% (9 case) having excellent result with overall lysolm score greater than 90

17 cases 58% were designated as good and 3 cases were fair and one case dosent follow proper rehabilitation protocol having poor result. Thus we found that in our study 26 cases 88% were having satisfactory result in lysolm score

Complications

S. No.	Complications	No. of Patients	Percent
1	Knee Pain	7	58.33
2	Superficial stitch infection	1	8.33
3	Sensory loss	4	33.33
4	Graft faliure	0	0
	TOTAL	12	100.00

CONCLUSION

This study included 30 patients (Serving Soldiers) suffering from ACL deficiency in the age group of 15 - 45 years, with minimum of 1 year follow up. The aim of study was to evaluate functional outcome of arthroscopy assisted ACL reconstruction with quadrupled hamstring tendon graft using Endobutton and Bioabsorbable interference screw.

From this study, we conclude that anterior cruciate ligament injuries are common in younger age group individuals. Sports related injury and RTA are the most common modes of injury. Arthroscopy assisted ACL reconstruction using Semitendinosus tendon autograft provides a stable knee, reduces postoperative morbidity and enables early

rehabilitation. Graft fixation using endobutton and and Bioabsorbable interference screw will help the graft to facilitate graft tunnel healing and also maintain its strength until there is a good graft to bone healing occurs. The functional outcome is excellent to good and allows the patients to return to preinjury level of activity

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