



A PROSPECTIVE STUDY ON EFFICACY OF PERONEUS LONGUS AUTOGRAFT FOR ACL RECONSTRUCTION

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KEYWORDS :

INTRODUCTION

The knee is a modified hinge joint, a type of synovial joint, which is stabilised by various intracapsular and extracapsular ligaments. Among them, The anterior cruciate ligament (ACL) is critically important as it prevents anterior translation of tibia over femur. The incidence of ACL injury in general population is 1: 3000. If it is left untreated, can lead to knee instability, meniscal injuries and early osteoarthritic changes. Goal of anatomic reconstruction of ACL is to regenerate a stable knee that allow return to sports and daily activities.. Anterior Cruciate Ligament (ACL) reconstruction is performed using different grafts. Commonly used graft tissues for ACL reconstruction include hamstrings tendon (semi membranous and gracilis), peroneus tendon, bone-patellar tendon-bone, quadriceps tendon, Achilles tendon, tibialis anterior and tibialis posterior tendon grafts.

Use of Peroneus longus tendon autograft is a recent development in the field of ACL reconstruction. The advantages are its strength and mean thickness is nearly same as that of the native ACL and is very easy to harvest.. In this study, the efficacy of Peroneus Longus tendon as a graft for primary ACL reconstruction are evaluated

METHODS;

This study was conducted in the department of Orthopaedics , sri Raghava hospital Kakinada between January 2020 to august 2021. Patients attending to OPD are selected for the study. Clinical examination done (Lachman test, pivot shift test and anterior drawer test) and other tests were done to rule out pcl and meniscal injuries. patients were evaluated with x-rays of knee and confirmed by MRI imaging

STUDY DESIGN :

Descriptive, Prospective clinical study in which the functional outcome of complete acl tear patients managed with acl reconstruction through arthroscopy

INCLUSION CRITERIA:

Patients with primary injuries of ACL
Both males and females

EXCLUSION CRITERIA:

Patients who are <18 years old
Patients who are unfit for surgery
Patients with significant knee and ankle deformities
Multi-ligamentous injuries

SURGICAL TECHNIQUE :

Surgery was performed under spinal anesthesia .pneumatic tourniquet applied in all cases. patient in supine position incision given posterior to lateral malleolus and peroneus longus graft was identified and with the help of laheys right angle forceps and tendon stripper graft was harvested and peroneus longus sutured to peroneus brevis and skin closure done Graft preparation was done and with the help of femur and tibia guides, drill holes are placed and depending up on the graft size the drill holes reamed with reamers and acl graft passed through

the drill holes and interference screw applied for tibia tunnel ..



Follow up and assement :

On postoperative day 1 quadriceps exercises (isometric contractions and straight leg raise) passive toe movements ,ankle exercises (dorsiflexion and plantar flexion) hip abduction and hip adduction were also advised .wound examination done on day one and drain removed .patients were managed with iv antibiotics and then discharged with analgesics and oral antibiotics and followed on day 12 and suture removal done. Knee immobiliser was continued till one month post operatively

Patient advised stationary bicycling for ROM and for strengthening prone hamstring curls ,partial squats, wall slides post operative 3rd - 5th week. During 6-8 weeks squat to chair ,lateral lunges ,dead lift advised. Jogging advised to start after 3 months. and return to sport after 6 months.

Post operative knee function was evaluated by LYSHOLM Knee scoring

RESULTS:

Our Study consists of 25 patients consists of 20 males and 5 females . Road traffic accidents are the most common mode of injury in (16 cases) followed by sport related injury in (6 cases) and fall from height in (3 cases) Author have done arthroscopic ACL reconstruction on 19 right and 6 left knees. Intraoperatively, only 10 patients had partial tear of the medial menisci of whom only 8 patients required partial meniscectomy .The length of the Peroneus longus graft harvested in the study ranged from 280-310 mm. The minimum length was 260 mm and maximum length was 320 mm.

LENGTH OF THE GRAFT	NO OF PATIENTS
260-270	4
270-280	2
280-290	4
290-300	8
300-310	4
310-320	3

THICKNESS OF THE GRAFT	NO OF PATIENTS
7.5 – 8	6
8.1-8.5	4
8.6-9.0	10
>9.0	5

LACHMAN TEST	PREOPERATIVE	POST OPERATIVE
NEGATIVE	2	22

1	10	3
2	12	
3	1	

The results in this study was assessed by LYSHOLM criteria at the end of 3 months. According to the LYSHOLM, 22 cases were rated as normal or nearly normal and 3 cases cases were rated as abnormal .

DISCUSSION

Biomechanical studies shows that there is no significant difference between the hamstring graft and peroneus longus graft. Peroneus longus tendon is as strong as native ACL.the maximum tensile load of acl is 1725n.The tensile load of peroneus longus in the study of kerimoglu was 1950N. Diameter of the graft plays an important role in the functional outcome.the avg thickness of the graft in our study was above 8 which helps in achieving good functional outcome and prevent rerupture rates.the complications associated with hamstring tendon grafts and bone patellar tendon bone graft like anterior knee pain, patellar tendon rupture, numbness ,loss of extension can be prevented.the peroneus longus graft is east to harvest and has good cosmetic results..

CONCLUSION

This study concluded that peroneus longus is an ideal autograft source for ACL reconstruction. It is easy to harvest, and we have adequate size and it is cosmetically appealing..considering its excellent post-operative knee scores, it can be used as an autogenous graft in orthopedic surgeries.the complications associated with other graft options can be reduced..