

Anterior Cruciate Ligament (ACL) Reconstruction Surgery Using Hamstring And Patellar Tendon Autograft: A Review Of Functional Outcomes

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INTRODUCTION:

Anterior cruciate ligament (ACL) is one of the most commonly injured knee ligaments. It leads to knee instability which affects the knee function. Reconstruction surgery is the gold standard treatment of ACL injury especially in young and active age group. This review provides patient-reported outcomes in term of knee stability and stiffness after ACL reconstruction surgery for both hamstring and bone-patellar-tendon-bone (BPTB) autograft.

METHODS:

From August 2015 to December 2016, total 10 patients who had been diagnosed as having complete tear of ACL had undergone ACL reconstruction surgery. The 10 patients comprised of 9 male and 1 female, with age ranged from 17 to 42 years (mean, 26.5 years). The procedure was carried out arthroscopically, with use of hamstring tendon autograft in 9 patients, and use of BPTB autograft in 1 patient. The follow up range was at 1 to 18 months post-operatively (mean, 6.2 months). The functional outcomes was subjectively evaluated using questionnaire with questions "Is there any giving away or instability of your knee when doing activity?" and "How stiff is your knee now?" Choices of response given to each question were "Not at all", "Mildly", "Moderately", and "Very".

RESULTS:

Out of 10 patients, 2 patients reported symptom of mild knee instability, but it was much improved as compared to preoperative symptom. Hamstring tendon autograft was used in both cases. The rest 8 patients including the one using BPTB autograft reported no symptom of knee instability at all. In term of knee stiffness, 9 out of 10 patients responded as no stiffness. The one who responded as having mild stiffness was the female patient whom ACL reconstructed using hamstring tendon autograft.

Table 1: Profile of the study sample (n=10)

Age/Sex	Graft	Instability	Stiffness
29/M	BPTB	No	No
32/ M	Hamstring	Mild	No
26/ F	Hamstring	No	Mild
20/M	Hamstring	No	No
28/ M	Hamstring	No	No
42/M	Hamstring	No	No
32/M	Hamstring	Mild	No
20/M	Hamstring	No	No
19/M	Hamstring	No	No
17/M	Hamstring	No	No

DISCUSSIONS:

ACL reconstruction surgery is meant for restoring knee function towards the pre-injury function level. Knee stability and motion are important post-operative measures which were assessed subjectively in our review. Some literatures show that clinical assessment of knee laxity does not well reflect the instability experienced by patient post-operatively. Since dynamic knee stability is determined by both ligamentous and neuromuscular structures, post-operative rehabilitation is vital to get desirable functional outcomes. For future works, larger sample size is required and other factors contributing to functional outcomes such as size of graft, type of graft donors, and post-operative rehabilitation should be taken into account. Other post-operative outcomes such as graft donor site morbidity and objective knee laxity should be addressed as well.

CONCLUSION:

ACL reconstruction surgery using both hamstring and patellar tendon autograft results in a good functional outcomes in term of knee stability and post-operative knee motion. Reconstruction surgery remains as the favourable option in treating ACL injury mainly in demanding patients.

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