

Revision anterior cruciate ligament reconstruction with hamstring tendon autograft: five to nine year follow up

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INTRODUCTION

As the number of primary ACL reconstruction being performed is increasing, so too is the number of patients requiring revision ACL reconstruction, either as a result of surgical errors or traumatic injury. The results of revision ACL reconstruction are limited in the current literature and no studies have previously documented the outcome of revision ACL reconstruction using solely hamstring tendon grafts.

METHODOLOGY

Fifty-seven consecutive revision ACL reconstructions were performed using a "single incision" endoscopic technique and interference screw fixation. Patients were assessed a mean time of 89 months (range 60-109) after revision ACL reconstruction. Assessment included the IKDC knee ligament evaluation, instrumented laxity testing and radiological examination.

RESULTS

Of the 50 knees reviewed, 5 (10%) had objective failure of the revision ACL reconstruction. Of the 45 patients with functional grafts, IKDC knee function was graded as normal or nearly normal in 33 patients (73%). An overall IKDC grade of normal or nearly normal was found in 56% of patients. The mean side to side difference on manual maximum testing was 2.5mm (range -1 to 4mm). Degenerative changes on radiographs were identified in 23% of patients at the time of surgery increasing to 56% of patients at review. The status of the articular cartilage at the time of revision ACL reconstruction was identified as the most significant contributor to successful outcome of revision ACL surgery. No significant relationship between the cause of primary ACL failure and the outcome of revision ACL surgery was identified.

RESULTS

Cause of primary ACL graft failure	N	%
Trauma after 6 months	26	58
Trauma before 6 months	3	7
Incorrect graft placement	10	22
Failure of graft without trauma	5	11
Fixation failure	1	2

CONCLUSION

Revision ACL reconstruction with hamstring tendon graft and interference screw fixation affords acceptable results at a minimum of 5 years follow up. Good objective results can be obtained but subjectively the results appear inferior to that of primary ACL reconstruction in the literature, which may be related to the high incidence of articular surface damage in this patient population. Failed primary ACL grafts should be revised in the sub-acute setting before further episodes of instability further damage the articular surfaces and thereby worsen the outcome of revision ACL reconstruction. We recommend that, when available, hamstring tendon autografts should be considered for revision ACL reconstruction.

Published:
 American Journal of Sports Medicine,
 2006, 34(10):1604-1614

