

Paper #133

Failure and Reoperation Rates Following Arthroscopic Primary Repair versus Reconstruction of the Anterior Cruciate Ligament

Jelle P. van der List, MD, NETHERLANDS
Daan Vermeijden, BA, UNITED STATES
Anne Jonkergouw, MD, UNITED STATES
Gregory S. Difelice, MD, UNITED STATES

Hospital for Special Surgery
New York, NY, UNITED STATES

Summary:

This study noted that similar failure rates were noted following arthroscopic primary ACL repair and ACL reconstruction at minimum two-year outcomes along with less complicated revision surgery following primary repair

Abstract:

Failure and Reoperation Rates Following Arthroscopic Primary Repair Versus Reconstruction of the Anterior Cruciate Ligament

Introduction

Recently, there has been a resurgence of interest in arthroscopic primary repair of proximal anterior cruciate ligament (ACL) tears. Several small case series have reported promising outcomes of this technique, but no studies have assessed the failure and reoperation rates of arthroscopic primary ACL repair and compared these to the gold standard of ACL reconstruction. We hypothesized that the failure and reoperation rates of arthroscopic primary ACL repair are equivalent to ACL reconstruction at short-term follow-up.

Methods

This study retrospectively reviewed all patients with ACL injury treated with either arthroscopic primary repair or reconstruction of the ligament between April 2008 and May 2016 by one surgeon. All patients with good tissue quality and proximal avulsion (type I) tears were treated with primary repair consisting of reattachment with suture anchors, and reconstruction was performed using autograft or allograft tissue. Patients were included if they were treated with these techniques and if minimum 2.0-year follow-up was present, and were excluded for multiligamentous injuries (=2 ligaments) or when skeletally immature.

Charts were reviewed and patients were contacted to assess failure of the treatment (instability, graft rupture or graft revision), reoperation for any cause (other than revision), complications and contralateral failure.

Results

A total of 154 patients were included of which 56 were treated with primary repair (36.4%) and 98 with reconstruction. Mean age was 30 years (range 14 – 57), 70% was male and mean follow-up was 3 years (range 2 – 9). Patients undergoing ACL reconstruction were younger (28 vs. 33, $p=0.002$) and were more often male (77% vs. 59%, $p=0.02$).

Failure rates were lower following primary repair (10.7%) than ACL reconstruction (12.2%) but this was not statistically significant ($p=0.776$). Also, no clinical relevant or statistical significant differences were found between

Paper #133

primary repair and reconstruction in reoperation rate (7.1% each group), complication rate (1.8% vs. 3.1%, respectively) and contralateral failure (3.6% vs. 4.1%, respectively) (all $p>0.99$). With revision surgery, no complications were noted following primary repair revision (primary reconstruction; 0%) but 25% of revision reconstructions failed while 1 needed reoperation (8%).

Conclusions

This study is the first study to compare the failure and reoperation rates following arthroscopic primary repair versus reconstruction in a large cohort of patients. With the treatment algorithm of primary repair for proximal avulsion tears and reconstruction of midsubstance tears, it was noted that patients with repairable tears were older and more often female. Failure and reoperation rates following both treatments were similar in this cohort, as well as complications and contralateral failure. Arthroscopic primary ACL repair is a safe and good treatment for ACL injuries and has similar failure and reoperation rates when compared to the gold standard of ACL reconstruction.