

Meniscal Repair in the Setting of Revision Anterior Cruciate Ligament Reconstruction: 6-Year Follow Up Results from the MARS Cohort

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INTRODUCTION: Meniscal preservation has been demonstrated to contribute to long-term knee health and has been a successful intervention in the isolated and anterior cruciate ligament (ACL) reconstructed patient. The long-term results of meniscus repair in the setting of revision ACL reconstruction have yet to be documented. The purpose of this study is to report the incidence of meniscal repair failures at 6-year follow up in a cohort of patients who underwent concurrent revision ACL reconstruction and meniscal repair.

METHODS: All revision ACL reconstructions with concomitant meniscal repair cases from a multicenter group between 2006 and 2011 were selected. Six-year follow up was obtained by both phone and email to determine whether any subsequent surgery had occurred to either knee since their initial revision ACL reconstruction. If so, operative reports were obtained, whenever possible, to verify pathologic condition and treatment.

RESULTS: In total, 221 patients from 1,234 revision ACL reconstructions underwent concurrent meniscal repairs (18% of the cohort). There were 238 repairs performed: 173 medial and 65 lateral. The vast majority of these repairs (n=181; 76%) were performed with an all-inside technique. Baseline patient and surgical characteristics of this group are reported (Tables 1, 2). Six-year surgical follow up was obtained on 77% (171/221) of the cohort. Overall, the meniscal repair failure rate defined as reoperation was 13% (31/235) at 6 years. Of the 31 failures, 28 were medial (24 all-inside, 4 inside-out; 16% failure rate) and 3 were lateral (2 all-inside, 1 inside-out; 4.6% failure rate; Table 2). Three medial failures were treated in conjunction with a subsequent repeat revision reconstruction. The mean (SD) time to failure for the medial repairs was 2.6 (1.7) years, while the time to failure for the lateral repairs was 1.6 (1.8) years. Medial tears underwent reoperation for failure at a statistically significant higher rate than lateral tears (16% versus 4.6%; p<0.001).

DISCUSSION AND CONCLUSION: Meniscus repair in the revision ACL setting is a successful treatment option when clinically indicated with low failure rates. At 6-year follow up, overall meniscal failure rate as defined by reoperation was 13% in this revision cohort. Failure rates for medial tears (16%) were higher than for lateral tears (4.6%), which aligns with previous studies both in the revision and primary setting.

Table 1. Baseline Patient Characteristics between the Meniscal Failures and Non-Failures

	Overall Group (n=238)	Meniscal Failures (n=31)	Non-Failures (n=207)
Sex			
• Male	60% (143)	55% (17)	61% (126)
• Female	40% (95)	45% (14)	39% (81)
Age, yrs	21 (18, 29)	21 (17, 28)	21 (18, 29)
BMI	24.9 (22.8, 27.6)	23.6 (21.9, 25.0)	25.1 (23.0, 27.9)
Smoking Status			
• Non-smoker	82% (195)	94% (29)	80% (166)
• Smoker (previous, current)	16% (39)	0	18% (37)
• Not reported/blank	2% (4)	6% (2)	2% (4)
Marx Activity Level (0-16)	13 (8, 16)	13 (7, 16)	13 (8, 16)

Key: continuous variables are listed as median (25% interquartile [IQR], 75% interquartile [IQR]); categorical variables are listed as percentage (frequency).