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Patients Frequently Change Surgeon When Undergoing Revision Anterior Cruciate Ligament Reconstruction

Simon W. Young, MD, FRACS, NEW ZEALAND

Hamish Love, FRACS, NEW ZEALAND

Kirsty Sutherland, NEW ZEALAND

Mark Clatworthy, FRACS, NEW ZEALAND

North Shore Hospital
Auckland, NEW ZEALAND

Summary:

A significant proportion of patients change surgeon when requiring revision ACL surgery.

Abstract:

Introduction

After anterior cruciate ligament (ACL) reconstruction, repeat ACL injury occurs in up to 20% of athletes, many of whom will undergo revision surgery. Prospective studies have investigated the rate of ACL graft rupture in various populations. However, surgeons' assessment of their own revision rate often relies on patients returning to the same surgeon, thus the proportion of patients who seek a different surgeon, and the true revision rate, is unknown. A cohort study was conducted to determine the rate of revision and contralateral ACL reconstructions (ACLRs) in New Zealand. The aims were to determine the proportion of patients who undergo revision and contralateral ACL procedures following primary ACL reconstruction, the proportion who see a different surgeon to their primary procedure, and the factors which may influence this outcome.

Methods

In New Zealand, the Accident Compensation Corporation (ACC) is the primary funder of all ACL reconstructions, which are covered under a no-fault injury scheme. Prospectively collected data from ACC was used to evaluate all primary ACL reconstructions performed between 1 January 2009 to 31 December 2014, and revision or contralateral ACL procedures performed between 1 January 2009 to 31 December 2016 to allow for a minimum two-year follow-up. Patient data included age, sex, ethnicity, date of injury, date of surgery, concurrent meniscal procedures, cause of injury and a surgeon identification number. Subsequent revision surgeries were identified and divided into those which had the same or different surgeon to the primary procedure. Potential factors influencing this outcome were assessed, including: age, sex, time between primary and revision procedure, and surgeon volume.

Results

A total of 15,212 primary ACL reconstructions were recorded in 14,987 patients. There were 676 subsequent revision procedures and 520 contralateral ACL during the study period, giving an adjusted revision rate and contralateral ACL reconstruction rate of $4.4\% \pm 0.002\%$ and $3.5\% \pm 0.002\%$ respectively.

Of the revision surgeries, 44.5% (n=301) were performed by a different surgeon to the primary ACL reconstruction. For primary ACLRs performed by low-volume surgeons (<10 primary ACLs/year), 77% of patients requiring revision ACLR changed surgeon compared to 23% for high-volume surgeons (>50 primary ACLs/year, OR 12.2 95%CI 7-22, $p < 0.001$). Other associations with change of surgeon included older age (OR 1.3 >20 vs <20, 95%CI 1.0-1.9, $p = 0.04$) and

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a longer time between the primary and revision surgery (OR 1.9 2-4 years vs 0-2 years, 95% CI 1.3-2.7, $p<0.001$).

Conclusion

A significant proportion of patients change surgeon when requiring revision ACL surgery. Even allowing for referrals and inter-surgeon communication, surgeons may underestimate their personal ACL revision rate in the absence of formal follow-up systems, particularly low volume surgeons.