

Fifteen-Year Audit of Anterior Cruciate Ligament Reconstructions in the Australian Football League

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Summary:

Returning to sport and pre-injury levels of performance following anterior cruciate ligament reconstruction remains a significant challenge for players in the Australian Football League, and a high rate of revision anterior cruciate ligament reconstruction following the use of synthetic grafts has become evident.

Abstract:

Introduction: Anterior cruciate ligament (ACL) injuries are prevalent among players in the Australian Football League (AFL). During the 2013 AFL season, 23 ACL injuries were recorded, which was the greatest number in over a decade and included a disproportionately high number of ACL graft ruptures. An audit of ACL reconstructions performed among AFL players from 1999 to 2013 was initiated in response to these findings.

Methods: AFL-listed players who underwent ACL reconstruction from 1999 to 2013 were identified from a registry prospectively maintained by the AFL Doctors Association. Attempts were made to contact the players, inviting them to participate in a semi-structured phone interview. Players were asked about the number and side of ACL injuries sustained, ACL graft sites, their return to play in the AFL, and complications including ACL graft rupture. Official playing statistics were obtained from Champion Data.

Results: 121 of the 158 players (77%) identified from the registry returned to play in the AFL following ACL reconstruction. Having more than 50 AFL games of experience at the time of first ACL reconstruction was a determinant of returning to play (89% vs. 65%, $p < 0.001$). Interviews were conducted with 84 of the players, who underwent 129 ACL reconstructions. Among the players interviewed, the return to sport rates were: 60 of 84 players (71%) after primary ACL reconstruction, 16 of 20 players (80%) following revision ACL reconstruction, and 8 of 16 players (50%) after undergoing a contralateral ACL reconstruction. Among players who returned to sport, half felt that they returned to pre-injury levels of performance within one season of their return, while one third felt that they never returned to pre-injury levels of performance. List management decisions and combinations of physical injuries were commonly given as reasons for players not returning to play. Revision rates were highest with the use of synthetic grafts (8 of 13 knees, 62%) compared with hamstring autografts (13 of 63 knees, 21%; $p = 0.005$) and patellar tendon autografts (7 of 48 knees, 15%; $p = 0.001$).

Conclusion: These results suggest that returning to sport following ACL reconstruction remains a significant challenge for players in the AFL, and that a substantial proportion of players who do return never reach their pre-injury level of performance. ACL graft rupture and contralateral ACL injury are both career-threatening events for AFL footballers. The high rate of revision ACL reconstruction following the use of synthetic grafts should be considered before using this treatment modality.