Posterior cruciate ligament revision reconstruction, part 1: causes of surgical failure in 52 consecutive operations.


Abstract: BACKGROUND: Posterior cruciate ligament reconstructions have not shown uniformly predictable results in restoration of normal posterior tibial translation. The authors are unaware of any study that has assessed the causes of failure of these operations, and they investigated 52 prior unsuccessful posterior cruciate ligament procedures to determine the factors that contributed to failure of the operations. STUDY DESIGN: Case series; Level of evidence, 4. METHODS: The authors studied 52 prior failed posterior cruciate ligament surgeries that had been done in 41 knees (40 patients). Graft reconstructions had been done in 31 cases, primary repairs in 14, synthetic replacements in 4, and thermoplasties in 3. Medical records, operative notes, radiographs, and magnetic resonance imaging scans were reviewed, and a comprehensive knee examination was conducted. RESULTS: A single factor that caused the operations to fail was identified in 23 (44%) of 52 operations, and multiple factors were identified in 29 (56%). The most common probable causes of failure were associated posterolateral ligament deficiency (40%), improper graft tunnel placement (33%), associated varus malalignment (31%), and primary suture repair (25%). Sixteen of 21 (76%) prior posterolateral ligament procedures had failed, as had 9 of 19 (47%) prior anterior cruciate ligament reconstructions. Twenty-nine knees (71%) presented with pain with activities of daily living. Thirty-four knees (83%) had compounding problems of joint arthritis, prior meniscectomy, associated ligament deficiencies, or varus malalignment. Posterior cruciate revision surgery was done in 22 knees (54%). Eleven knees (27%) had severe joint damage that contraindicated revision, and 8 (19%) declined further operations. CONCLUSIONS: Failure to restore associated ligament instabilities and incorrect tunnel placement were major factors contributing to surgical failure. The results suggest the need for greater emphasis on the initial reconstruction in graft tunnel placement, correction of associated ligament instabilities, and correction of varus osseous malalignment. Failure of concurrent posterolateral ligament reconstructions was frequently encountered, suggesting the need for higher strength augmentation procedures or anatomical graft replacement.