

Treatment of posterior cruciate ligament tibial avulsion by a minimally-invasive open posterior approach

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ABSTRACT

Objective: To assess the surgical technique and report the outcomes following fixation of PCL bony avulsions through mini-invasive posterior knee approach as described by Burks and Schaffer.

Methods: From June 2012 to July 2015, 27 patients enrolled in the study (21 males and 6 females). Fixation of tibial PCL avulsion fractures was done with one or two cannulated screws, or sutures through Burks and Schaffer's approach. The mean interval before surgery was 16 days (1–70). Patients were followed up for an average of 51 weeks. The outcome measures evaluated at final follow-up were (1) clinical stability as assessed by posterior drawer test, (2) radiologic union, (3) functional assessment by Lysholm score, and (4) gastrocnemius muscle strength as a measure of morbidity.

Results: Average operative time was 43 min. Improvement of both subjective Lysholm score (mean 93) and objective stability testing by posterior drawer test (returns to normal in 81.1% of patients) at the final follow-up. Good radiographic union at average of 5.6 weeks. No morbidity of the gastrocnemius with few complications.

Conclusions: The approach was fast and safe with excellent visualization. It allows surgeons to address other injuries in the same setting. It can be considered as a minimally-invasive open surgery without surgery-related morbidity. It is a reproducible technique that can be done at any trauma centre by surgeons with average experience. The subjective and objective results of the technique are excellent and comparable to the arthroscopic procedures that needs more specific centres with well-trained surgeons.

Keywords: PCL avulsion, Burks and schaffer's approach, Mini-invasive posterior knee approach

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