Outcomes of medial patellofemoral ligament reconstruction for patellar instability: a systematic review

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CRD summary
This generally well-conducted review found that medial patellofemoral ligament reconstruction may provide favourable clinical and radiological outcomes for patients with patellar instability. However, the paucity of available evidence and the poor quality of the included studies limits the reliability of the results of the review.

Authors’ objectives
To determine whether medial patellofemoral ligament reconstruction is a suitable procedure for patients with patellar instability.

Searching
AMED, the British Nursing Index, CINAHL, the Cochrane Library, MEDLINE, EMBASE, PEDro, PsycINFO and Zetoc were searched for English language studies from inception to May 2007. Search terms were reported. Abstracts and unpublished studies were excluded. Reference lists of retrieved articles were also searched.

Study selection
Any studies (except case reports) reporting outcomes following medial patellofemoral ligament reconstruction, with or without secondary surgery, using allograft or autograft ligament reconstructions, were eligible for inclusion. Included studies were required to provide sufficient details of patient history, indications for surgery, surgical intervention and outcome measurement or results.

Most included patients had chronic symptoms pre-operatively and the time between initial dislocation to surgery ranged from seven days to 37 years. The mean age of participants was 24 years, and most were women. The most common indications for medial patellofemoral ligament reconstruction were failure of conservative treatment, recurrent symptoms, and a positive apprehension test. The surgical interventions undertaken varied across studies.

Three independent reviewers selected studies; disagreements were resolved by discussion.

Assessment of study quality
Three independent reviewers assessed study quality using the Critical Appraisal Skill Programme (CASP) tool for observational studies; disagreements were resolved by discussion.

Data extraction
Three independent reviewers extracted: the incidence of post-operative subluxation, dislocation and apprehension; the results of a range of function-based assessments and outcome scale scores; wound problems; and patient satisfaction. Disagreements were resolved by discussion.

Methods of synthesis
The studies were combined in a narrative synthesis.

Results of the review
Eight case series met the inclusion criteria (n=174 patients; 186 medial patellofemoral ligament reconstructions). All studies clearly defined the operation undertaken and used a suitable period of follow-up. Only one study reported a clearly focused question and appropriate study design. Three studies used appropriate methods for recruiting. Seven studies measured appropriate outcomes and provided appropriate interpretation. Six studies had less than 15% dropout at final follow-up. None of the studies identified or accounted for confounding factors, presented precise statistical results, acknowledged possible bias, or had generalisable results.
Where reported, recurrent patellar dislocation or subluxation occurred in between 0 and 9% of patients (six studies). Congruence angle (four out of five studies), sulcus and lateral patellofemoral angles (one out of two studies) and radiological patellar height (two studies) improved after medial patellofemoral ligament reconstruction.

Complications reported included pain from the staple fixation site (11 patients), pain from a screw at the medial epicondyle (one patient) and a tibial tuberosity transfer screw (one patient), arthrofibrosis (one patient), haemarthrosis (one patient), wound dehiscence (one patient), minor wound infection (two patients), haematoma (one patient), and graft advancement (one patient).

Most patients were satisfied with the outcome of their operation. Results for a range of different scales and clinical examinations were also reported.

**Authors' conclusions**

Medial patellofemoral ligament reconstruction may provide favourable clinical and radiological outcomes for patients with patellar instability.

**CRD commentary**

The authors addressed a clear research question using appropriate inclusion criteria. An extensive search for published studies was undertaken, but non-English language and unpublished studies were excluded, increasing the likelihood of publication and language bias. All stages of the review were conducted in duplicate, reducing the potential for error and bias. Quality was assessed using appropriate criteria, and the results were used to help interpret the results. The decision to combine studies in a narrative synthesis seemed appropriate. This was a generally well-conducted review, but the conclusions are limited by the poor quality and paucity of evidence available.

**Implications of the review for practice and research**

**Practice:** The authors did not state implications for practice.

**Research:** The authors recommend the longer-term follow-up of patients in the included studies, prospective studies to address the methodological weaknesses of the studies included in the review, research into the optimal rehabilitation of patients, and a repeat of the systematic review once more studies become available.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.