Reconstruction of the medial patellofemoral ligament for treatment of patellofemoral instability: a systematic review

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CRD summary
This review concluded that there was limited but growing evidence that a medial patellofemoral ligament-based surgical approach to patellofemoral instability leads to excellent functional outcomes. The authors’ conclusions should be considered with caution as most of the evidence consisted of case series, there was a lack of information about the review methods and there was a risk of language bias.

Authors' objectives
To review functional outcomes after reconstruction of the medial patellofemoral ligament (MPFL) for the treatment of patellofemoral instability.

Searching
MEDLINE, EMBASE and The Cochrane Library were searched in October 2008. Search terms were reported. Only studies published in English or Dutch were included.

Study selection
Clinical studies of MPFL reconstruction for patellofemoral instability that reported on outcomes such as dislocation, subluxation, instability, maltracking, hyperlaxity and luxation were eligible for inclusion.

All the included studies were case series or therapeutic series. Surgical procedures varied and included artificial ligament grafts with medial reticulum slip coverage, semitendinosus grafts and gracilis tendon autografts. Mean follow-up was between 22 months and 11.9 years. Outcomes were dislocation/subluxation, postoperative functional outcomes and time to unassisted weight bearing. Functional outcomes were measured by a number of scales that included Crosby-Insall, Kujala, Lysholm, Turba and an activities of daily living scale.

The authors did not state how many reviewers performed the study selection.

Assessment of study quality
Study validity was assessed using levels of evidence from Oxford Centre for Evidence-based Medicine. This covered the relevance of the domain determinant and outcome, and the validity of the research question, sample size, baseline definition, observer blinding, adequate follow-up, amount of missing data, selection bias and standardisation of measurements. These were used to assess the overall applicability of the study design.

The authors did not state how many reviewers performed the validity assessment.

Data extraction
Details of the procedures and the results as reported by the studies were extracted.

The authors did not state how many reviewers performed data extraction.

Methods of synthesis
The results were reported narratively.

Results of the review
Fourteen studies (n=331, range 12 to 44) were included: 10 case series (n=226) and four therapeutic series (n=105). The case series were classed as level IV evidence and the therapeutic series were classed as level III.
Three studies evaluated MPFL reconstruction with or without tibial tubercle transfer and mean scores on the Lysholm scale ranged from 92.1 to 95.6. One study also reported a Turba score that was good or excellent in all patients. Two studies evaluated artificial ligament grafts with medial reticulum slip coverage and both studies reported Crosby-Insall scores of good or excellent for all except one knee evaluated; one also had a mean Kujala score of 94.2. Five studies evaluated semitendinosus grafts and reported mean Kujala scores between 83 and 96. Other studies reported similarly high scores for functional outcomes. Overall there were nine cases of dislocation or subluxation.

Authors' conclusions
There was limited but growing evidence that a medial patellofemoral ligament-based surgical approach to patellofemoral instability leads to excellent functional outcomes.

CRD commentary
This review briefly specified some inclusion criteria with respect to the intervention and participants. The literature search excluded studies not reported in English or Dutch, which increased the possibility of language bias. The authors did not report whether systematic review methods such as study selection and data extraction were performed by more than one person, so risks of error and bias could not be ruled out. Study validity was rated using levels of evidence and these were reported for each study, but the information was unclear. Each study was discussed separately without any overall synthesis of the evidence.

The authors’ conclusions should be considered with caution as most of the evidence consisted of case series, there was a lack of information about the review methods and there was a risk of language bias.

Implications of the review for practice and research
**Practice:** The authors stated that osseous realignment surgery still had an important part to play in patients with severe malalignment. In instability cases with milder malalignment, MPFL reconstruction should be considered as an adjunct. In cases of mild to moderate malalignment, careful selection of an appropriate MPFL technique potentially removed the need for major realignment surgery.

**Research:** The authors stated that further research was needed to demonstrate the relative efficacy of different reconstruction techniques with particular attention to the methodological quality of future trials.

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