Comparison of lateral release versus lateral release with medial soft-tissue realignment for the treatment of recurrent patellar instability: a systematic review

Ricchetti E T, Mehta S, Sennett B J, Huffman G R

CRD summary
The authors concluded that, in patients with recurrent patellar instability, surgery using isolated lateral retinacular release (LRR) demonstrated significantly inferior long-term results compared with LRR with medial soft-tissue realignment. Given some methodological limitations of the review, the reliability of the authors' conclusions is unclear.

Authors' objectives
To compare the effects of surgical treatment using lateral retinacular release (LRR) versus LRR with medial soft-tissue realignment (MR) in patients with recurrent patellar instability.

Searching
MEDLINE/PubMed was searched from 1966 to January 2006. In addition, the references of retrieved articles were checked. Publications were restricted to English language papers.

Study selection
Study designs of evaluations included in the review
Studies using any design with a minimum follow-up of 2 years were eligible for inclusion. The included studies were retrospective comparative studies or case series. The average follow-up ranged from 2 years 3 months to 8 years.

Specific interventions included in the review
Studies were eligible for inclusion if they used open or arthroscopic LRR or LRR with MR (MR was defined in the review). Studies involving distal bony realignment with tibial tubercle transfer or surgery without LRR were excluded.

Participants included in the review
Studies were eligible for inclusion if they involved patients over the age of 18 years with recurrent lateral patellar instability, defined as more than 1 episode of patellar dislocation or patellar subluxation. Studies were excluded if they identified patients with previous total knee arthroplasty or patellectomy, surgical treatment of an initial patellar instability episode, or surgical treatment of patellofemoral pain without stability. The included studies involved patients with either recurrent patellar dislocations or recurrent patellar subluxation, or patients with recurrent dislocation alone or recurrent subluxation alone.

Outcomes assessed in the review
Studies were eligible for inclusion if they reported post-operative failure as the primary outcome. Post-operative failure was defined as an episode of recurrent patellar dislocation or recurrent or persistent patellar subluxation during the post-operative period.

How were decisions on the relevance of primary studies made?
Three reviewers screened studies for relevance.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
The authors did not state how the papers were extracted for the review, or how many reviewers performed the data extraction. Data were extracted in order to calculate the odds of recurrent instability, with 95% confidence intervals (CIs), for each study.

Methods of synthesis
How were the studies combined?
The odds of recurrent instability were pooled for each type of treatment and compared using the Fisher exact test. A rank correlation test was used to investigate the potential for publication bias.

How were differences between studies investigated?
A forest plot was presented that demonstrated non-overlapping CIs for the LRR studies.

Results of the review
Thirteen retrospective comparative studies and one case series were included in the review (467 knees: 247 undergoing LRR and 220 LRR with MR).

There were 56 cases (odds 0.293) of recurrent lateral patellar instability in participants receiving LRR, 26 of which were post-operative patellar dislocations. In participants who received LRR and MR, there were 14 cases (odds 0.068) of recurrent instability, 12 of which were dislocations. The frequency-weighted mean success with respect to instability was 93.6% (95% CI: 93.0, 94.3) for LRR with MR and 77.3% (95% CI: 74.7, 80.0) for LRR alone. Patients receiving LRR alone reported significantly greater odds for recurrent instability, patellar dislocation and patellar subluxation compared to patients treated with LRR with MR (p<0.001, p=0.045 and p<0.001, respectively). There was no evidence of publication bias (p=0.138).

Authors' conclusions
Compared with LRR with MR, the use of isolated LRR demonstrated significantly inferior long-term results with respect to recurrent lateral patellar instability.

CRD commentary
The review question was clear and was supported by appropriate inclusion criteria relating to the participants, interventions, outcomes and study designs. There was no statistical evidence for publication bias. However, publications were restricted to those in English, which might have introduced language bias, and as there was no search for unpublished material it is possible that relevant papers were missed. The absence of a validity assessment means that the reliability of the included studies and their subsequent synthesis is unclear. The review process was not made explicit at each stage, thus introducing the potential for reviewer error and bias. Analyses for statistical heterogeneity was not reported, and the pooling of the results might not have been appropriate. Given the limitations of the review, the reliability of the authors' conclusions is unclear.

Implications of the review for practice and research
Practice: The authors stated that treatment with LRR may only be suitable for patients with patellofemoral pain rather than patients with instability.

Research: The authors did not state any implications for further research.

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