



Does Operative Treatment of First-Time Patellar Dislocations Lead to Increased Patellofemoral Stability? A Systematic Review of Overlapping Meta-analyses

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Purpose: To conduct a systematic review of meta-analyses comparing nonoperative and operative treatment of patellar dislocations to elucidate the cause of the variation and to determine which meta-analysis provides the current best available evidence. **Methods:** A systematic review of the literature to identify meta-analyses was performed. Data were extracted for patient outcomes and recurrent dislocations. Meta-analysis quality was assessed using the Oxman-Guyatt and Quality of Reporting of Meta-analyses systems. The Jadad algorithm was then applied to determine which meta-analysis provided the highest level of evidence. **Results:** Four meta-analyses met the eligibility criteria: 1 Level I evidence, 2 Level II evidence, and 1 Level III evidence. A total of 1,984 patients were included (997 underwent surgery whereas 987 underwent conservative treatment). Three meta-analyses found a lower subsequent patellar dislocation rate in patients managed operatively compared with nonoperatively, whereas one did not find a difference in recurrent dislocation rates between the operative and nonoperative groups. When the results of all the studies were combined, the overall redislocation rate was 29.4% and the rate of recurrent instability episodes was 32.8%. Patients treated operatively had a 24.0% rate of repeat patellar dislocation and a 32.7% rate of recurrent patellar instability, whereas patients treated nonoperatively had a 34.6% rate of repeat patellar dislocation and a 33.0% rate of recurrent instability. In addition, 1 meta-analysis found a significantly higher rate of patellofemoral osteoarthritis in the operative group. No differences in functional outcomes scores were seen between treatments. Two meta-analyses had low Oxman-Guyatt scores (<4), indicative of major flaws. **Conclusions:** According to the best available evidence, operative treatment of acute patellar dislocations may result in a lower rate of recurrent dislocations than nonoperative treatment but does not improve functional outcome scores. **Level of Evidence:** Level III, systematic review of Level I, II, and II studies.

See commentary on page 1216

Patellar dislocations account for roughly 2% to 3% of all knee injuries and are cited as the second most common cause of traumatic hemarthrosis of the knee.¹ The injuries often result from a traumatic injury but can sometimes be the result of hyperlaxity. Patients who sustain a patellar dislocation often rupture the medial

patellofemoral ligament (MPFL) because the distance the patella travels when it dislocates laterally often exceeds the distance the MPFL can stretch before rupture.²

Many studies have sought to find the most effective treatment for first-time patellar dislocations. These

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The authors report the following potential conflict of interest or source of funding: N.N.V. receives support from Minivasive, Smith & Nephew, Arthrosurface, Vindico Medical Orthopedics Hyperguide, Omeros, Arthrex, Athletico, ConMed Linvatec, Miomed, Mitek. B.J.C. receives support from Arthrex, DJ Orthopaedics, Johnson & Johnson, Regentis, Zimmer, Smith &

Nephew, DePuy. B.R.B. receives support from Arthrex, Össur, Linvatec, Smith & Nephew.

Received September 23, 2014; accepted November 26, 2014.

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© 2015 by the Arthroscopy Association of North America
0749-8063/14808/\$36.00

<http://dx.doi.org/10.1016/j.arthro.2014.11.040>

treatments include conservative therapy, knee arthroscopy, and surgical reconstruction of the MPFL with or without fixation of an osteochondral fragment.³ Several studies have attempted to determine whether surgical treatment is more effective than conservative treatment for first-time patellar dislocations. Buchner et al.³ compared 126 patients at a mean of 8.1 years after primary patellar dislocation who underwent surgical versus nonsurgical treatment, and they found no difference between redislocation and reoperation rates, functional and subjective outcomes, and level of activity. Similarly, Nikku et al.⁴ compared operative and nonoperative treatment of primary patellar dislocations in 127 patients at a mean of 7 years' follow-up and found no significant differences between treatment groups. However, Bitar et al.⁵ did find better outcomes at a minimum of 2 years' follow-up in patients treated operatively versus those treated nonoperatively for primary patellar dislocations. Other studies have also supported operative treatment.^{6,7}

Hence the purpose of this study was to perform a systematic review of overlapping meta-analyses comparing operative and nonoperative treatment of

primary patellar dislocations to determine the cause of discordance and to determine which studies provide the best available evidence on this subject. The purposes of this study were (1) to conduct a systematic review of meta-analyses comparing operative and nonoperative treatment of primary patellar dislocations, (2) to provide an analytic framework for interpreting the presently discordant best available evidence to develop treatment recommendations, and (3) to identify gaps in the literature that require continued investigation. We hypothesized that operative treatment for primary patellar dislocations would provide lower rerupture rates than nonoperative treatment.

Methods

A systematic review of the literature was performed using the Medline database, Cochrane Database of Systematic Reviews, Scopus database, and Embase database. The following search terms were used: "patella" and "dislocation." Study type limits were set to meta-analysis or systematic review in the English language, with broad search query terms used to include all possibly applicable studies. Each article was cross-referenced to ensure inclusion of all relevant articles.

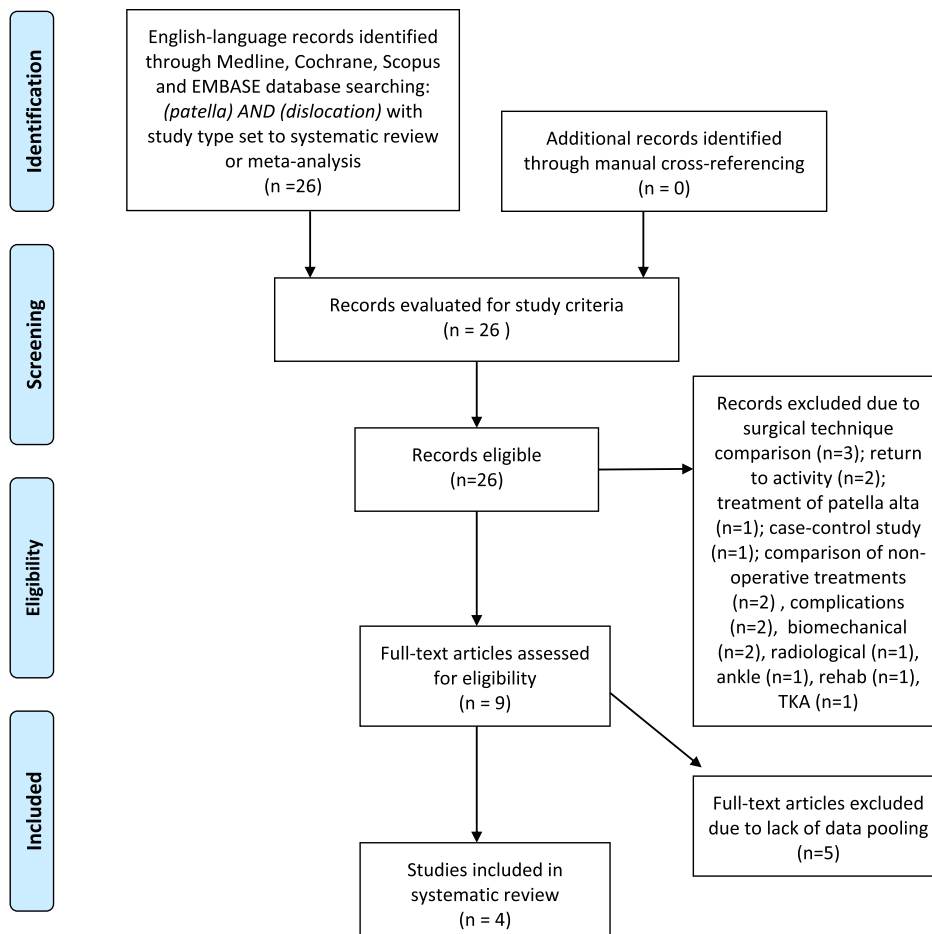


Fig 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses) flow sheet.

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