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ABSTRACT

• **Clinical Scenario:** Determining the best treatment option of an acute primary patellar dislocation to return the athlete to their sport with the lowest re-dislocation rate is a commonly discussed topic. **Focused Clinical Question:** With patients who have sustained an acute primary patellar dislocation, what are the effects of surgical treatment with physical therapy versus conservative treatment on re-dislocation rate? **Search Strategy:** Inclusion criteria consisted of the injury needing to be an acute primary patellar dislocation, no previous history of knee surgeries on the effected knee and a positive apprehension test. Exclusion criteria was history of chronic patellar instability, previous surgeries on the effected, or a history of a major lesion on the effected side. Databases used were PubMed, Cochrane summaries, CINAHL complete, and ProQuest Nursing Collection. Search terms used were patellar dislocation treatment, Patellar dislocation, surgical treatment, conservative treatment, operative treatment, non-operative treatment. Nine articles were selected after the search was complete. **Evidence Quality Assessment:** All studies received either a 6/10 or a 7/10 on the PEDro scale. The studies were rated a level 2 or level 3 on the 2011 Oxford Centre for Evidence-Based Medicine levels of evidence scale. **Results and Summary of Search:** The studies show that there were no significant differences between the surgical and conservative treatments in re-dislocation rate. Although conservative treatment was found to be a viable treatment choice, surgical reconstruction and repair of the medial structures showed to have better results. The results showed that re-dislocation with surgery ranged between 0% to 67% while conservative treatment showed re-dislocation rates between 4% to 75%. Strengths of the studies are having very similar physical therapy regimens and similar surgical procedures. Weakness in these studies are that there is a wide range of ages between the patients which other factors such as anatomical factors may play a role in weakness of stabilization. With younger populations ligaments and muscles have not fully developed leading to weakened stabilization. With older population, ligaments and muscles may become weaker as people begin to slow down in life and become less active. **Clinical Bottom Line:** 5 of the 9 studies found no significant differences between the two treatments in regards to re-dislocation rate. This study received a SORT score of B. **Implications:** As athletic trainers commonly work with acute injuries, they may encounter acute patellar dislocations throughout their careers. They will need to be able to recognize the injury then determine whether surgery or conservative treatment will lead to the lowest re-dislocation rate for the patient. Having the knowledge of which treatment is will have better results for re-dislocation rates will enable the athletic trainer to know when to refer the patient for follow-up with an orthopedic surgeon. **Word Count:** 446

CLINICAL SCENARIO

- Acute primary patellar dislocation: Displacement of the patella laterally
- S/S: Pain, muscle spasms, altered gait and range of motion (ROM), ¹ and gross deformity.
- Acute patellar dislocation accounts for 2 – 3% of acute knee injuries. ^{2,3}
- Common treatments of acute primary patellar dislocation include conservative treatment consisting of physical therapy or surgery combined with physical therapy.
- Conservative has been commonly used as an initial treatment for patellar dislocation until the end of the twentieth century. ²
- Determines if surgery and physical therapy or physical therapy leads to the lowest re-dislocation rate.
- This is important to AT's because they need to know which treatment leads to the best outcomes and when to refer the patient.
- Acronyms:

FOCUSED CLINICAL QUESTION

- With patients who have sustained an acute primary patellar dislocation, what are the effects of surgical treatment with physical therapy versus conservative treatment on re-dislocation rate?

SEARCH STRATEGY & EVIDENCE QUALITY ASSESSMENT

- Inclusion Criteria**
 - Acute primary dislocation
 - No previous injury or surgery to knee
 - Positive apprehension test
- Exclusion Criteria**
 - Positive history patellar instability
 - Major lesions on the effected side
- Databases**
 - PubMed
 - Cochrane summaries
 - CINAHL Plus with Full Text
 - ProQuest Nursing Collection
- Search Terms**
 - Patellar dislocation
 - Surgical treatment
 - Conservative treatment
 - Operative treatment
 - Non-operative treatment
- Literature Analysis**
 - All studies received either a 6/10 or a 7/10 on the PEDro scale.
 - All studies were rated as either a level 2 or level 3 on the Oxford Centre of Evidence Based Medicine scale
- Patient demographics**
 - Age range: 8 – 56 years old
 - Patients per study range: 17 - 126

Figure 1. Reconstructed MPFL

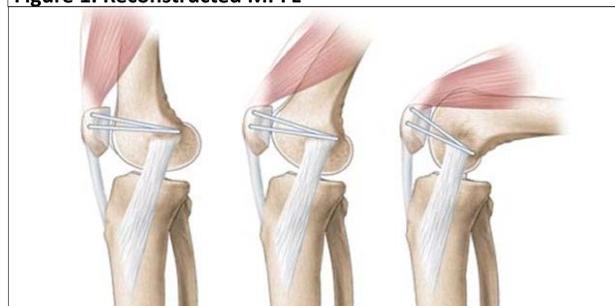


Figure 1. This image shows the medial aspect of the knee. Showing how the MPFL stabilizing the patella as the knee moves throughout flexion.

RESULTS AND SUMMARY OF SEARCH

Author/Study	Conservative Re-Dislocation Rate	Surgical Re-Dislocation Rate	P-value	Time of Last F/u
Apostolovic M, et al ²	7.14% (1/23)	8.69% (2/14)	p = 0.854	≈ 6.1 years
Palmu S, et al ⁴	71% (20/28)	67% (24/36)	p > 0.05	≈ 14 years
Buchner M, et al ⁵	27% (17/63)	26% (10/37)	p > 0.05	≈ 8.1 years
Camanho G, et al ¹	50% (8/16)	0% (0/17)	p > 0.05	≥25 months
Mostrom EB, et al ⁶	67% (22/33)	43% (3/7)	p < 0.05	≈ 7.35 years
Lee H, et al ⁷	33% (3/9)	0% (0/11)	p = 0.07	> 1 year
Petri M, et al ³	37.5% (3/8)	16.7% (2/12)	p = 0.347	≈ 2 years
Regalado G, et al ⁸	73% (11/15)	33% (5/15)	p = 0.02	≈ 6 years
Sillanpaa P, et al ⁹	29% (6/21)	0% (0/17)	p = 0.02	≈ 7 years

Table 1. This table compares the re-dislocation results between the operative and non-operative groups in each of the studies. (F/u = follow-up)

RESULTS AND SUMMARY OF SEARCH, CONT.

- Re-Dislocation rate was measured by questionnaires during follow-ups at varying time shown in Table 1.
- 4 of the 9 studies supported the use of surgical stabilization followed by physical therapy as the initial treatment for primary patellar dislocation.
- 5 of the 9 studies found no significant differences between the two treatment options with one stating a tendency of better results towards surgical treatment.
- No studies suggested conservative treatment having lower re-dislocation rates.
- A strength of this study was that each study used similar physical therapy programs between the two treatments.
- The larger age ranges of the groups in the studies can be bad due to the anatomical stability before patellar dislocation.

CLINICAL BOTTOM LINE

- 5 of 9 studies showed no significant differences between surgical and conservative treatment in re-dislocation outcomes.
- 4 of the 9 studies favored surgical treatment in regards to re-dislocations.
- One study stated finding a tendency of better results towards surgical treatment but it was not a significant finding.
- This study received a SORT score of B.

IMPLICATIONS

- Athletic trainers work with acute injuries, such as patellar dislocations, so it is likely that they will need to treat patellar dislocations.
- They need to be able to recognize patellar dislocations and know which treatment will lead to the optimal outcomes for the patients.
- Having the knowledge of which treatment is will have better results for re-dislocation rates will enable the athletic trainer to know when to refer the patient for follow-up with an orthopedic surgeon

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