

## Problems Related to the Patellofemoral Joint: Review Questions

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### QUESTIONS

Choose the best single answer for each question.

- 1. Which of the following soft tissue stabilizers of the patella provides the most restraint to lateral patellar displacement at 20 degrees of knee flexion?**
  - (A) Lateral facet of the trochlea
  - (B) Lateral retinaculum
  - (C) Medial patella meniscal ligament
  - (D) Medial patellofemoral ligament
  - (E) Medial retinaculum
- 2. An 18-year-old soccer player dislocates his patella during soccer practice. The patella reduces with knee extension. Subsequent radiographs demonstrate no fracture and a reduced patella on Merchant view. This is the first incident of patellar dislocation for this patient who has no history of contralateral knee problems. Based on epidemiologic studies, what is the approximate risk of recurrence of instability symptoms for this patient if he is treated nonoperatively?**
  - (A) 5%
  - (B) 15%
  - (C) 35%
  - (D) 50%
  - (E) 80%
- 3. A 20-year-old woman with longstanding patellofemoral symptoms remains symptomatic despite 3 years of physical therapy and a strengthening program. For this patient, in which of the following clinical scenarios is surgical treatment with arthroscopy and isolated lateral retinacular release most reasonable?**
  - (A) Patellofemoral pain with recurrent subluxation
  - (B) Patellofemoral pain with recurrent dislocation
  - (C) Patellofemoral pain with negative passive patellar tilt
  - (D) A palpable medial defect with excessive lateral translation
  - (E) Patellofemoral pain, crepitation, and ligamentous laxity
- 4. A 12-year-old boy presents to the emergency department with a swollen knee following a patellar dislocation playing baseball; the dislocation was reduced when the coach straightened the patient's leg. Radiographic examination shows a skeletally immature knee, significant subluxation of the patella on Merchant view, and a 2 × 3-cm osteochondral fragment in the intracondylar notch. Physical examination demonstrates a knee effusion, a negative Lachman test, tenderness around the medial patella, and a range of motion of 20/70 degrees. Which of the following is the most appropriate treatment for this patient?**
  - (A) Immobilization in 20 degrees of flexion for 4 weeks
  - (B) Arthroscopy, removal of the fragment, and early motion
  - (C) Attempted repair of the osteochondral fragment and direct repair of the medial structures
  - (D) Attempted repair of the osteochondral fragment and medialization of the tibial tubercle
  - (E) Arthroscopic lateral release

*(turn page for answers)*

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## ANSWERS AND EXPLANATIONS

1. **(D) Medial patellofemoral ligament.** Several authors have evaluated the restraints to medial and lateral translation of the patella.<sup>1,2</sup> At 20 degrees of flexion, the medial patellofemoral ligament plays the largest role in restraining the patella against lateral translation. In a study by Desio et al,<sup>1</sup> the medial patellofemoral ligament contributed 60% of the total restraining force, while the medial patellar meniscal ligament and lateral retinaculum contributed 13% and 10% of the total force. The medial patellar, tibial, and superficial fibers of the medial retinaculum were not important in preventing lateral translation.<sup>1</sup> Similarly, Conlan et al<sup>2</sup> found that the medial patellofemoral ligament contributed 53% of the total restraining force to lateral translation of the patella.
2. **(B) 15%.** Fithian et al<sup>3</sup> evaluated epidemiologic factors associated with patellar dislocation and found that patients with a first-time dislocation had an average 17% incidence of instability over a 2- to 5-year follow-up period. Patients with a previous history of dislocation had a 49% recurrence rate. Garth et al<sup>4</sup> also noted a 15% recurrence rate for patients with a first-time dislocation and a 40% redislocation rate in patients presenting with a history of prior dislocation.
3. **(C) Patellofemoral pain with negative passive patellar tilt.** Appropriate nonoperative care has been unsuccessful in relieving this patient's symptoms. Indications for arthroscopy and isolated lateral retinacular release are patellofemoral pain, mainly lateral, a negative passive patellar tilt, and a tight lateral retinaculum.<sup>5</sup> Lateral retinacular release for the treatment of instability has been shown to have a poor success rate, with the potential for recurrence of instability symptoms.<sup>6</sup> Patients with ligamentous laxity are unlikely to benefit from lateral retinacular release.
4. **(C) Attempted repair of the osteochondral fragment and direct repair of the medial structures.**

Appropriate treatment for this patient should include removal of the mechanical block to extension, which is likely the osteochondral fragment in the intracondylar notch. Additionally, the treatment of large osteochondral fractures includes attempted repair when possible.<sup>7</sup> Likely sources of these large osteochondral fragments include the medial facet of the patella as well as the lateral aspect of the trochlear groove and lateral femoral condyle.<sup>8</sup> Medialization of the tibial tubercle in a skeletally immature patient risks growth plate disturbance when there is significant subluxation. At the time of repair of the osteochondral fragment, medial repair is reasonable to restore patellofemoral congruence.

## REFERENCES

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