

J-Sign

In a patient with lateral patellofemoral instability, the “J-sign” can be observed when delayed engagement of the patella into the trochlea during knee flexion results in an abrupt shift of the patella from a lateral to a medial position. Please watch the accompanying J sign video. Conversely, as the knee is extended, the patella is observed to shift from a medial position (while it is engaged within the trochlea) to a lateral position (which may represent lateral patellofemoral subluxation or dislocation).

Patellar Translation Test

This test is performed by manually translating the patella with the knee in 0–20 degrees of flexion. With the patient lying supine and the quadriceps relaxed, the examiner places a laterally directed force on the medial aspect of the patella. The amount of lateral patellar translation is then quantified as the number of patellar quadrants of motion (e.g., < 25% translation = 1 quadrant; 25-50% translation = 2 quadrants, etc.). The test is then repeated in the opposite direction to assess the amount of medial translation.

Patellar Apprehension Test

This test is performed while performing the patellar translation test noted above. A positive test is noted when the patient either verbalizes an impending feeling of patellofemoral instability or if the patient visibly appears apprehensive or uncomfortable during the testing maneuver. The patient may ask the examiner to stop performing the maneuver or may flex the knee or activate their quadriceps in order to prevent patellar subluxation/dislocation. It is important to distinguish a true feeling of apprehension from pain since the latter is less specific for patellofemoral instability than the former.

Summary

The evaluation of pediatric knee pain or injury requires a focused but thorough physical examination guided by the clinical context obtained during the parent and patient history in order to determine an appropriate differential diagnosis and the need for advanced imaging.

Examination of the contralateral, uninjured side will help determine baseline for key maneuvers as well as increase patient and parent comfort. Performing potentially painful or difficult maneuvers at the end of the exam will improve patient compliance.

References

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