Locked Superior Patellar Dislocation

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abstract

Superior dislocation of the patella is a rare cause of knee locking, with fewer than 20 cases reported in the English literature. The vast majority of traumatic or even atraumatic knee locking cases are due to such varied conditions as meniscal tears, osteochondral lesions, osteoarthritis, and ligamentous tears. A careful examination with proper radiographic imaging must be undertaken to properly evaluate patients who present with a locked knee, as they may have interdigitating patellofemoral osteophytes. An unusual case of a locked knee secondary to interlocking osteophytes between the femoral condyle and the inferior pole of the patella without a history of trauma is presented. The authors show how local sedation and gentle reduction are usually sufficient treatment, and that the vast majority of patients with this injury quickly return to their baseline functional level without the need for general sedation or surgical treatment. [Orthopedics. 2016; 39(2):e359-e361.]

A 53-year-old female housekeeper presented to the emergency department with left knee pain and an inability to flex her knee. She stated that she was dusting a table, and while leaning over to clean the distant side, she managed to hyperextend her knee while catching the superior aspect of the patella on the underside of the table. As she struggled to reach the far side of the table, she felt a painful catch in her knee and was suddenly unable to flex. She was unable to walk, so an ambulance delivered her to the emergency department.

On initial physical examination, she had minimal effusion. There was no palpable gap in the patellar tendon, although the superior pole of the patella was prominent anteriorly and there was a dimple visible just distal to the patella. She was able to perform a straight leg raise, but felt excruciating pain with attempted knee flexion.

Plain radiographs showed that the patella was superiorly dislocated, with interlocking of the osteophytes between the inferior pole of the patella and the anterior surface of the femur (Figure 1). Computed tomography scans also clearly showed interlocked osteophytes (Figures 2-3).

The knee was infiltrated with 10 mL of 1% lidocaine after sterile preparation. The knee was then hyperextended and the patella manipulated proximally and laterally. After this maneuver, the knee could be easily flexed both actively and passively. Imaging confirmed reduction of the patella into the trochlea with disengagement of the previously locked osteophytes (Figure 4). After a discussion cautioning proper knee positioning, the patient was monitored for 3 months without another locked superior dislocation.

Discussion

Superior patellar dislocations are extremely rare causes of knee locking, with fewer than 20 cases reported in the English literature. The causes of these locked dislocations have varied, from traumatic to atraumatic. For patients who dislocate and lock atraumatically, the postulated mechanisms have ranged from hyperextension to eccentric muscle contraction to knee subluxation associated with vastus tear. The patient discussed in this article had a locked superior patellar dislocation secondary to interlocking osteophytes between the femoral condyle and the inferior pole of the patella without a history of trauma.
due to knee hyperextension coupled with a redirection of patellar tracking, leading to a manual interlocking of osteophytes present on both the inferior pole of the patella and the medial femoral condyle. This diagnosis should be in practitioners’ differential diagnosis when presented with an atraumatic locked knee in a patient with known knee osteoarthritis. Recognition of a superior patellar dislocation and prompt radiographic examination will allow for proper management.

The majority of cases of superior patellar dislocations in the literature were successfully reduced under local or regional anesthesia and surgical treatment was not deemed necessary. However, there was one case in which reduction fractured an interdigitating osteophyte, necessitating arthroscopic removal of the loose body. Postreduction, all of the patients resumed their prior activities and did not require further treatment, except for one patient who had 3 separate episodes of locking, necessitating surgical osteophyte removal. The recommendation immediately following reduction is to keep the knee in slight flexion and to not immobilize the patient, thereby attempting to prevent the resumption of a hyper-extended knee posture with relocking of the interdigitating osteophytes.

Theoretically, risk factors associated with this rare dislocation include generalized ligamentous laxity, paralytic disorders, genu recurvatum, patella alta, and patellofemoral osteoarthritis. The vast majority of patients, including the current patient, do well after reduction and return to their baseline activity level. Occasionally, the use of a physiotherapist to achieve full passive and active knee range of motion may be applicable.

**CONCLUSION**

Superior patellar dislocation is a rare injury, which occurred in the current patient due to an atraumatic hyperextension movement. The interlocking osteophytes characteristic of the injury usually prevent spontaneous reduction; however, local or regional sedation allows for gentle reduction, usually without the need for surgical intervention.

**REFERENCES**


**Figure 1:** Prereduction lateral radiograph showing locked superior patellar dislocation.

**Figure 2:** Prereduction sagittal computed tomography scan showing locked superior patellar dislocation.

**Figure 3:** Prereduction axial computed tomography scan showing locked superior patellar dislocation.

**Figure 4:** Postreduction lateral radiograph showing reduced patellar dislocation.


