

## A rare variant of knee dislocation

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**SUMMARY: A rare variant of knee dislocation.**

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*Knee dislocation is a rare injury. It represents less than 0.2% of orthopaedic injuries. This case reports a rare form of knee dislocation*

*caused by the impact of a high-energy trauma. In these cases the appropriate assessment and management is needed to ensure that patient receives the proper treatment.*

KEY WORDS: Knee dislocation.

### Case report

A 65-year-old man was involved in a motor vehicle accident. He fell from his motorcycle that landed on his right leg. He was unable to weight bear immediately after the incident.

Upon examination in the emergency department, there was swelling of his right knee. He kept his knee at 30-degree flexion. There were bruises over the medial aspect of his knee and skin dimpling over medial joint line (Figure 1). His patella was laterally displaced and his knee alignment was slightly in varus. Radiography assessment of the knee was done and diagnosis of the knee dislocation was made. Close manual reduction under sedation was attempted twice but failed.

Patient was subjected to open reduction under general anaesthesia. Intra-operatively we found the medial femoral condyle buttonhole through the knee capsule and medial retinacular. The soft tissue incarcerated in the intercondylar notch had made the reduction difficult. The

medial femoral condyle was unbutton from the retinacular by reducing the soft tissue from the notch (Figure 2).

### Discussion and conclusion

Knee dislocation is a rare injury. It represents less than 0.2% of orthopaedic injuries. It results from high-energy trauma. It is associated with multi-ligament tears, fractures, vascular and neurological injuries (1, 2). Persistent dislocation will further cause impingement injury to the important structure. Thus, dislocation of knee should be reduced as soon as possible. In an acute setting, knee dislocation can be reduced with sedation. Very rarely it is impossible to reduce and surgical intervention is warranted. Most of the cases is due to postero-lateral rotatory dislocation.

Postero-lateral rotatory dislocation is a rare cause of knee dislocation. It is seen in approximately 5% of knee dislocations (1-3). The mechanism of injury was suggested as a result from abduction and external rotation of a flexed knee.

Postero-lateral rotatory dislocation occurs when the medial femoral condyle buttonhole into the retinaculum, vastus muscle, medial collateral and capsule (3, 4). Soft tissue interposition becomes trapped in the intercondylar notch. This prevents reduction of the dislocation. It is usually associated with other ligament injuries such as anterior cruciate, posterior cruciate or col-

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Fig. 1 - Knee in varus position with dimpling sign over the medial aspect. Diagnosis: posterolateral rotatory dislocation.

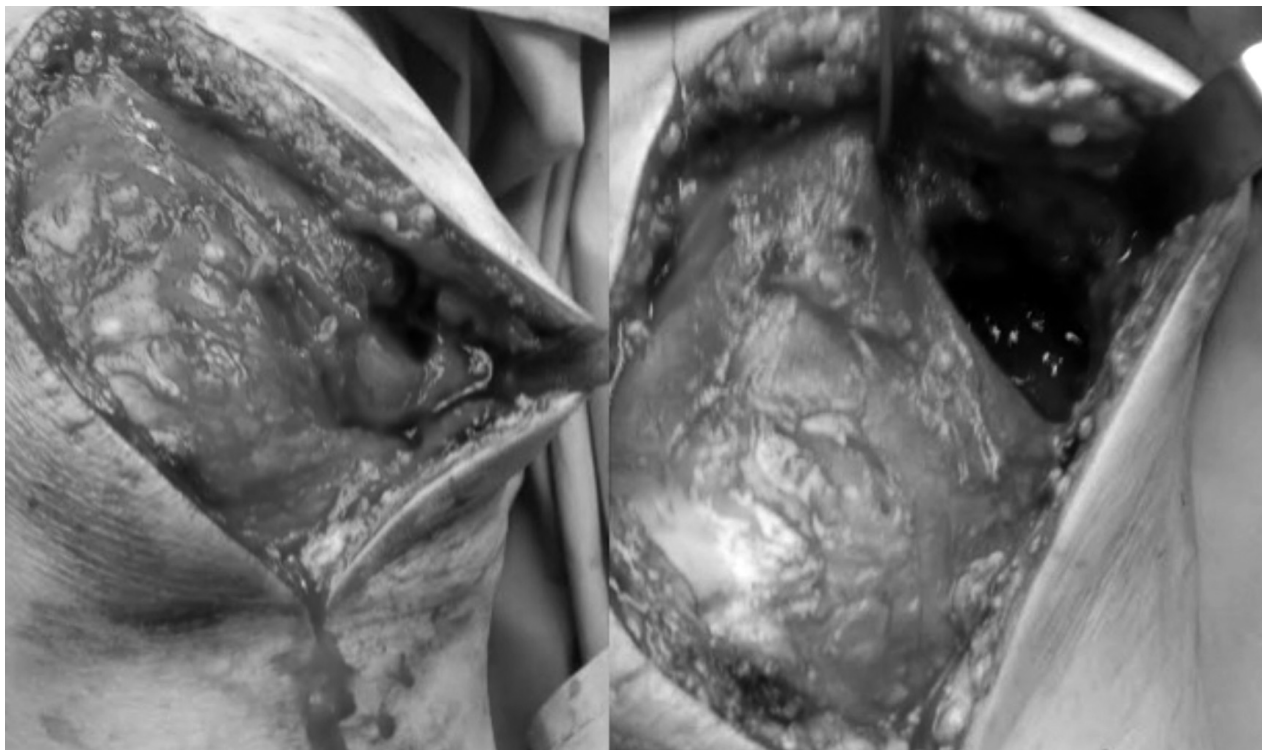


Fig. 2 - Medial femoral condyle buttonhole through the capsule and inferior part of vastus medialis (left). After reduction, capsule and muscle were repaired (right).

lateral ligament injury or meniscus injury.

Diagnosis of irreducible knee dislocation is visible during inspection. Depression over the medial joint line,

the 'dimpling sign' or sulcus sign, is what could be visualized (2-4). This sign is more evident when close manual reduction is attempted. However, this sign could

be masked in obese patient or with presence of marked swelling of the knee. The dimpling sign is a result from the tethering of the trapped capsule. The sign is suggestive that the close manual is not possible. The presence of this sign indicates the need of urgent open reduction. Failure to recognize this sign will lead to unnecessary

series of close manual reduction. This could lead to more secondary soft tissues injuries. Radiography of the knee excludes the involvement of fracture. Magnetic resonance imaging may be helpful in diagnosing other soft tissue injuries. Open reduction is the treatment of choice. Neglected case will result in skin necrosis.

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