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Case report

Bilateral sequential knee dislocation in a patient with connective tissue disorder: Report of an unusual case and lessons learnt

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ABSTRACT

Tibiofemoral knee dislocation is a rare but serious limb-threatening injury. Without prompt recognition and management, amputation or long-term functional impairment may result. The authors present a case of bilateral sequential knee dislocation, secondary to low-energy trauma, in a patient with Systemic Lupus Erythematosus and antiphospholipid syndrome. Adequate stability was achieved on both occasions by reconstruction of the postero-lateral corner and MCL. During the first reconstruction, ipsi-lateral autograft, as well as hamstring tendons from the contra-lateral side, were used to strengthen the graft. For the second reconstruction, allografts were used. This case highlights that, a patient with soft-tissue disorder presenting with low-energy knee dislocation may be at risk of further dislocations. Treating surgeons should anticipate these issues and consider the role of allograft in ligamentous repair.

1. Introduction

The knee is a hinge joint consisting of three articulations: the patellofemoral, the tibiofemoral and the proximal tibiofibular joints. Tibiofemoral knee dislocation is a rare but serious limb-threatening injury representing less than 0.2% of orthopaedic injuries with an estimated incidence of between 0.28 and 5.3 per year.[1] Without prompt recognition and management, amputation or long term functional impairment may result due to concomitant neurovascular injuries.[2] Approximately, 10% of tibiofemoral knee dislocation injuries are due to normal daily activities and simple falls, also known as ultra-low velocity dislocations.[3] The incidence is higher in women with high Body Mass Index (BMI) and often associated with neurovascular injuries and postoperative complications.[4,5] However, authors present an unusual case of a female patient presenting with low energy bilateral sequential knee dislocations that occurred almost 2 years apart.

2. Case history

The case of a female patient with medical history of Systemic Lupus Erythematosus (SLE), anti-phospholipids antibody syndrome (APS) and a BMI of 34 is presented.

The patient was on regular Prednisolone, Azathioprine, Hydroxychloroquine, Aspirin, Calcium and Vitamin D.

The first episode of knee dislocation occurred in 2012 after a fall from standing height whilst getting out of the bathroom. The patient was 38 years old at the time. She presented to emergency department (ED) with right knee deformity, hypoaesthesia along the common peroneal nerve distribution and absent dorsalis pedis and posterior tibial pulses. However, the foot was warm and pink. A diagnosis of anterior dislocation of the right knee was made and prompt reduction under sedation in ED was achieved (Figs. 1 and 2). Initially, her CT angiogram did not visualise anterior tibial or peroneal arteries and a vascular surgeon opinion was sought. The patient was closely monitored and no vascular intervention was necessary.

Pre-operative MRI showed complete rupture of anterior cruciate ligament (ACL), posterior cruciate ligament PCL, medial collateral ligament (MCL) and postero-lateral corner. Within 48 h, the patient underwent right knee postero-lateral corner reconstruction. Intra-operatively, use of tourniquet was avoided given the history of a potential vascular injury. Hamstring tendons autograft harvested from ipsi-lateral side was very thin and weak; therefore, contra-lateral gracilis and semitendinosus tendons were also harvested and used to reconstruct postero-lateral corner and MCL. The patient was kept on IROM brace for a total of 4 weeks postoperatively. She then commenced physiotherapy exercises and weight bearing with crutches for another 2 weeks. Within 6 months from time of surgery, she returned to her normal level of activity with no instability symptoms. There was no need to reconstruct cruciate ligaments as the patient was asymptomatic, due to her low demand.

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Fig. 1. AP right knee.

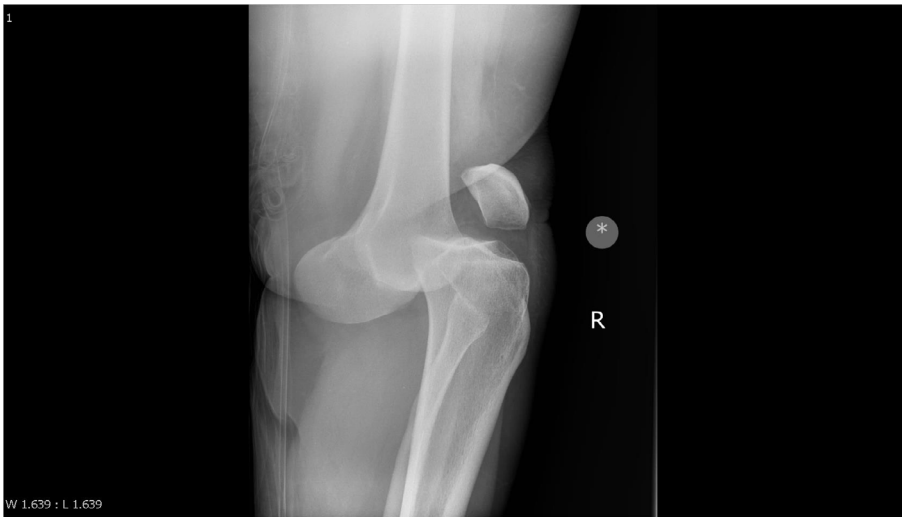

Fig. 2. Lateral view of right knee.

Fig. 3. AP left knee.

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