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Bilateral Knee Dislocation with Tibial Shaft Fracture

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We report a case of traumatic bilateral open knee dislocation with a type 42 A2 closed right tibial shaft fracture and right common peroneal nerve palsy.

We are not aware of any other reports of such a combination of injuries.

Keywords: bilateral, knee, dislocation, tibial shaft fracture.

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Case Report

Rafik Elafram [α], Sabri Mahjoub [σ], Emir Bassalah [ρ], Ismail Jerbi [ω], Mohamed Abdelkefi [¥], Hedi Annabi [§], Mehdi Hadj Salah [χ] & Mondher Mbarek [ν]

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I. Introduction

Acute dislocation of the knee is a limb-threatening injury that often results in extensive soft-tissue damage and disruption of the popliteal blood vessels[1,2].

We reported a case of traumatic bilateral open knee dislocation with a type 42 A2 closed right tibial shaft fracture and right common peroneal nerve palsy.

We are not aware of any other reports of such a combination of injuries.

II. Case Report

In April 2013, 25-year-old male was admitted to emergency medical service by an ambulance due to a traffic accident. He was hit by a car.

After initial examination, he had severe deformity of both knees with posterior skin injury in both popliteal fossa. Also, the patient had right limb deformity.

The pulses were palpable and symmetrical in the lower limb. The patient had right common peroneal nerve palsy.

Plain radiographies of the lower extremities were performed: they showed medial right knee dislocation with ipsilateral type 42 A2 tibial shaft fracture and fracture dislocation of the left knee.

A prompt reduction was performed. The arteriogramme was made and had not shown any sign of occlusion.

In the operation room, exploration of the knees' injury revealed: in the right knee a section of the biceps femoris, broises in the common peroneal nerve and the ACL and the PCL were intact, in the left knee, no noble element was affected. The fracture was fixed with srews.

Internal fixation of the tibial and fibular shaft were performed. The patient had bilateral knee immobilization for 45 days. Then, he begun rehabilitation. The consolidation fracture was obtained after 04 months.

In the final fellow up, the range motion of the knee was0 degree to 95 degree. He had a grade-1 anterior and posterior laxity and varus instability in the right knee.

The lateral peroneal nerve palsy was recovered.

III. Discussion

Knee dislocations are uncommon, constituting less than 0.5% of joint dislocations [3]. The documented incidence of observed knee dislocations on admission per institution per year is even less and varies from 1/10,000 to 1/100,000 [4–6].

The exact mechanism responsible for the tibial shaft fracture and knee dislocation with disruption of all knee ligaments, popliteal vessels, and the common peroneal nerve was not clear [7].

In a large review by Green and Allen, 40% of 245 knee dislocations were anterior, while posterior dislocations are the second most common at 33% and are caused by direct application of a posterior force to the anterior tibia. Lateral and medial dislocations are relatively uncommon, comprising 18% (lateral) and 4% (medial) of knee dislocations [8].

A thorough neurological examination is also essential, as peroneal nerve palsies have been noted in 14–35% of knee dislocations, most commonly in posterolateral dislocations [1,6,7].

Controversies over operative versus closed immobilization of traumatic complex, multiple ligamentous knee injury are still debated. In 2004, Chin-Ho Wong et al. investigated the results of surgical and conservative treatment of knee dislocation retrospectively. The international knee documentation committee (IKDC) scores of operatively treated patients and patient satisfactions were significantly better than conservatively treated group [10].

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The most important fear in this kind of associations is to miss diagnose one dislocated joint because the other is more spectacular or threatening the limb's vitality, especially in polytrauma patients. Moreover, these associations present an evident problem of interference in management.

Two cases of combination of ipsilateral knee dislocation and tibial shaft fracture were reported in the litterature. But no bilateral open knee dislocation was noted. Therefore, we found that it would be interesting to report such an association [7,11].

IV. Conclusion

These injuries are orthopedic emergencies that have high complication rates. An awareness of the possibility of such association should lead to an appropriate treatment.

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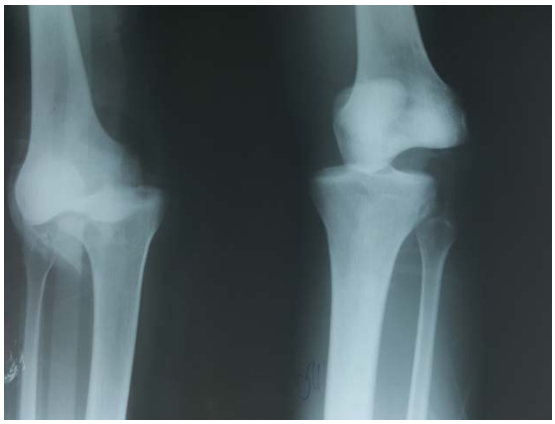

Figure 1 : Radiography showing bilateral knee dislocation.

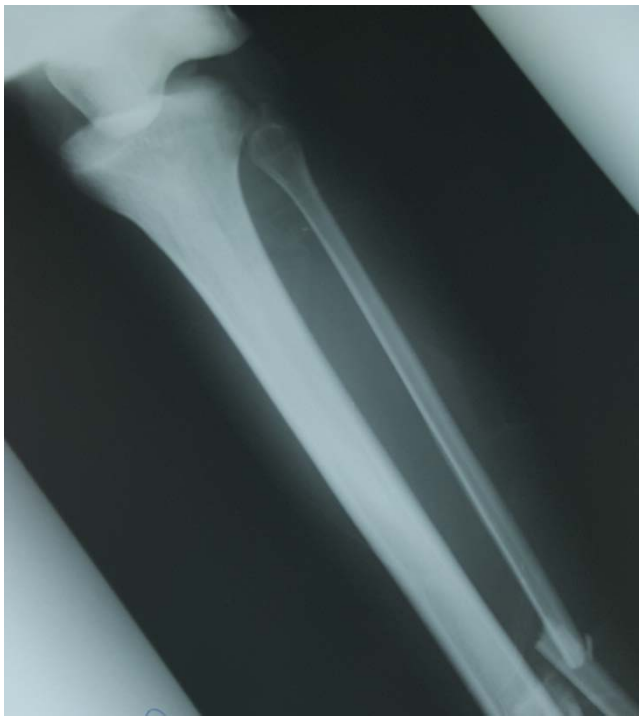

Figure 2 : Radiography showing tibial shaft with knee dislocation.

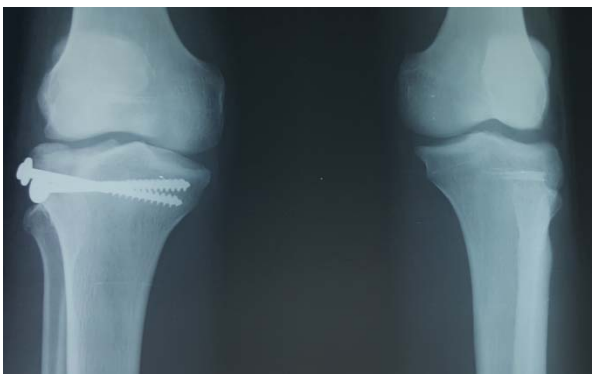

Figure 3 : Anterio-posterior radiography of the knees

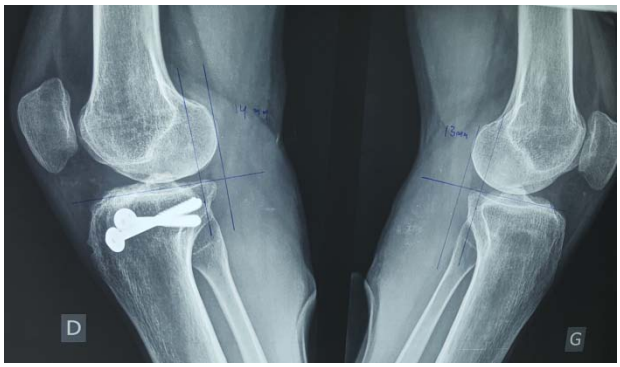

Figure 4 : latearl radiography of the knees

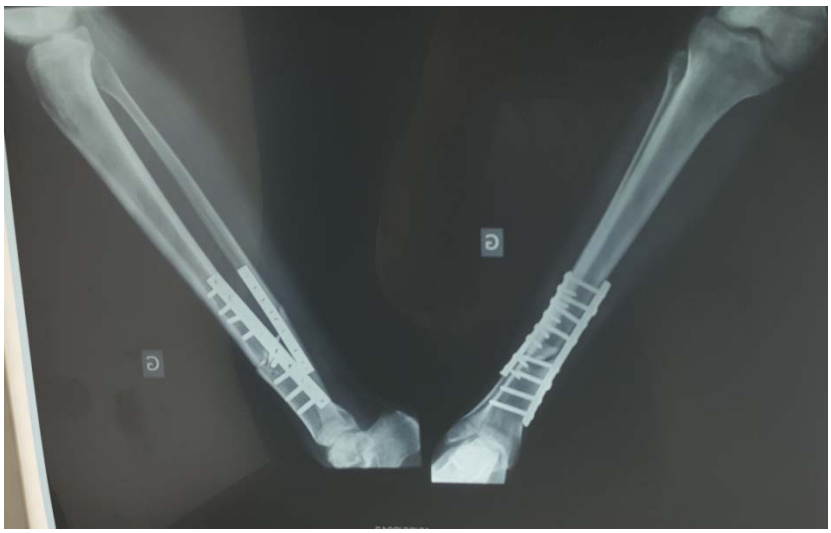

Figure 5 : Radiography of the limb.