

Knee Dislocations at CHU Gabriel Toure

Abdoul Kadri Moussa*, Mahamadou Diallo, Louis Traore, Layes Toure, Mamadou Traore B, Loubet Unyendje and Tieman Coulibaly

Department of Orthopedics-Traumatology, CHU Gabriel Toure, Bamako, Mali

***Corresponding Author:** Abdoul Kadri Moussa, Department of Orthopedics-Traumatology, CHU Gabriel Toure, Bamako, Mali.

Received: December 12, 2019; **Published:** January 23, 2020

Abstract

Introduction: Dislocations of the knee are serious, involving the functional prognosis and sometimes the vital prognosis of the limb concerned. The aim of our work was to assess the functional results of our care.

Materials and Methods: This was a prospective study concerning patients with dislocation of the knee, treated and followed in the Department of Orthopedics-Traumatology at the CHU Gabriel TOURE from January 2015 to October 2018.

Results: We collected 30 patients with knee dislocation. The male sex predominated (60%) with a sex ratio of 1.5. The average age was 32.56 years. AVP was the main etiology with 83.3%. The mechanism was direct in 86.7%. Standard knee X-ray with front and side views was performed in all patients. Posterolateral dislocation was the most common type of pathology (20%). Associated lesions were observed in 56.6%. The response time was less than 6 hours in 100%. The treatment was orthopedic in 93.3%. Complications were dominated by knee laxity with 43%. At the average follow-up of 18.9 months, the functional results were fairly good in 53.3%.

Conclusion: Knee dislocations are the prerogative of the young subject. Accidents due to motorcycles are the main circumstances. Associated lesions are frequent. The treatment is most often orthopedic. The evolution is unpredictable despite the precocity of care.

Keywords: *Knee; Dislocations; Treatment; Laxity*

Introduction

These are rare but serious lesions that can affect all age groups [1]. The incidence of knee dislocation is low, estimated at 0.02% [2]. These lesions occur as a result of high energy trauma and are frequently accompanied by associated lesions [3-5]. Dislocations of the knee are serious, involving the functional prognosis and sometimes the vital prognosis of the limb concerned [6]. It is a trauma emergency [1-3,6].

These are highly thrombogenic lesions. The treatment is most often orthopedic. The most common late complications are instability and stiffness in the knee [2,3,6].

Aim of the Study

The aim of our work was to assess the functional results of our care.

Materials and Methods

It was a retro prospective and descriptive study which took place in the Department of Orthopedics-Traumatology CHU - Gabriel TOURE from January 1, 2015 to October 31. We included in our study all patients with knee dislocation, whose treatment and follow-up were performed in the department.

We did not select patients whose follow-up was less than 6 months and those lost to follow-up. Data collection and sampling were done from individual medical records, operating room and emergency room registers. Data management and analysis was done using SPSS 21, Word and Excel 2010 software. The results were assessed using the IKDC score.

Results

We collected 30 patients with knee dislocation. The male sex predominated (60%) with a sex ratio of 1.5. The average age of our patients was 32.56 years (range: 16 years and 70 years). The etiologies were accidents on the public highway (83.3%), accidents in the home (10%) and accidents at work (6%). Among the accidents on the public highway motorcycles were involved in 21 cases (70%). The mechanism was direct in 86.7%. Standard knee radiographs with frontal and lateral views were performed in all patients. The pathological lesions observed were posterior dislocations (15 cases with 7 posterolateral dislocations, 4 pure posterior and postero-medial dislocations), 11 cases of anterior dislocation (4 pure anterior dislocations, 4 anteromedial and 3 anterolateral) and 4 pure lateral dislocations. Associated lesions were noted in 17 cases (53.3%): osteoarticular (9 cases) (Figure 1), skin opening (6 cases) (Figure 2), 1 case of rupture of the quadriceps tendon (Figure 3) and 1 case of lesion of the common fibular nerve (axonotmesis). In addition to these immediate complications observed, we noted shock in 6 cases (20%). The treatment period was less than 6 hours in all patients. The treatment was orthopedic (the compression plastered by cruro-pedieux (Figure 4) and after trimming in case of skin lesion) in 93.3% and surgical by plugging in 2 cases (Figure 5). All our patients were subjected to a long proprioceptive reeducation protocol consisting in strengthening the muscles of the thigh muscles, especially the quadriceps muscle, which makes it possible to overcome instability and stiffness. We noted the following complications: superficial infection in 2 cases, thrombophlebitis in 1 case, 13 cases of knee laxity (43%) and 3 cases of osteoarthritis. At the average follow-up of 18.9 months, the functional results were fairly good in 53.3%.



Figure 1: Posteromedial luxation of the left knee associated with a fragmented fracture of the left condyle.



Figure 2: Posterolateral dislocation of the open right knee.



Figure 3: Open dislocation of the left knee associated with a parcel fracture of the left femoral condyle and quadriceps tendon rupture.



Figure 4: Dislocation of the left knee reduced and immobilized by a cruro-pedal plaster.

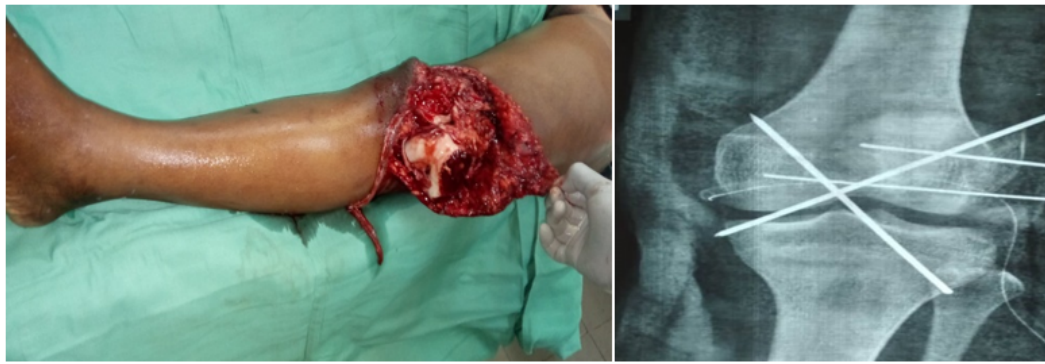


Figure 5: (a): open dislocation of the left knee, (b): reduction and femoro-tibial and lateral condyle retraction, after suture of the crusaders, repair of the capsule, reinsertion of the lateral meniscus and suture of the quadricipital tendon.

Discussion

The limits of our work: our workforce is weak, and we have not been able to use statistical tests. Nevertheless, this work allows us to compare our results with those of the literature. Male sex predominated in our series (60%). Our results are consistent with data from the Lustig literature. S and Leray E, (83, 3%) [4], Neyret., *et al.* (75%) [7]. The average age of our patients was 32, 56 years old. This average age is close to that of Lustig S., *et al.* [4], Neyret P., *et al.* [7] and Montgomery TJ., *et al.* [8], found respectively 37, 29 and 34 years old; on the other hand, lower than that of Bonneville P., *et al.* [9] who found 47 years old. Versier G., *et al.* [5] reports that the age of onset most often concerns the fourth decade, and in all series, the patients have an intense activity or an active lifestyle. The main cause of knee dislocations was road accidents (83.3%). Accidents on the public highway have been described as the main circumstance of traumatic knee dislocations in most series: Lustig S., *et al.* (40,6%) [4], Versier G., *et al.* (50%) [5]. But the frequency of dislocations related to road accidents in the latter is lower than ours. This is explained on the one hand by our small sample, and on the other hand the frequent accidents at work and violent sports in the series by Lustig S., *et al.* [4] Versier G., *et al.* [5].

From an anatomopathological point of view, posterior dislocation was the most frequent variety with 14 cases (46.6%). This frequency of posterior knee dislocation was noted in the series by Bonneville P., *et al.* [10] (9 cases/25, with in 7 cases unspecified). This is explained by the frequency of the anteroposterior shock mechanism. Associated lesions were frequent (16 cases/30) reflecting the violence of the trauma: we noted open dislocation in 6 cases (20.7%) and associated bone lesions in 9 cases (31%). Bonneville P., *et al.* [10], Rosset P., *et al.* [11], Richter M., *et al.* [12] found respectively a cutaneous opening in 19% 14%, 6%. The high rate of skin opening in our series is explained by the size of our workforce. Versier G., *et al.* [5] found bone lesions in 20% (osteochondral condyle fractures, tibial plateaus and patella). All our patients were treated within less than 6 hours for the reduction of dislocation as well as for the treatment of the wound under general anesthesia. The hemodynamic state was stabilized for patients shocked by anesthetists before reducing the dislocation and trimming the wound. Then the traumatized limb was restrained by a cruro-pedious plaster or a cruro-pedous plaster splint (orthopedic treatment) in 28 cases (93.1%) for 6 weeks, and surgery in 2 cases (6.9%). Apart from a case of ligament repair (open dislocation with rupture of the central pivot, lateral collateral ligament, quadricipital tendon and crow's feet tendons) no ligament repair was performed remotely or in an emergency. In the literature the frequency of surgical treatment is noted. Lustig S., *et al.* [13], Bonneville P., *et al.* [9] performed an orthopedic treatment respectively 61% (plastered compression / or external fixator) and 28% (cruro-pedal plaster). In

the series of Lustig S., *et al.* [13], 39% suture repair was performed. However, we recorded the complications. Among the early complications, we had 6 cases of shock managed by anesthesiologists and 6 cases of skin opening. Secondly, 2 cases of superficial infection and 1 case of thrombophlebitis were observed. These two cases of infection were resolved with antibiotic treatment and appropriate local care. As for the case of thrombophlebitis, it was treated with Enoxaparin curative dose (60mg subcutaneously) for 21 days and relay by oral anticoagulant. At a distance, we noted 13 cases (43.3%) of laxity (knee instability), despite a well-conducted rehabilitation protocol, and 3 cases of osteoarthritis (10%). At the average follow-up of 18.9 months, the functional results were fairly good in 53.3%. Our functional results are far from those of the literature: Deltour A., *et al.* (75%) [14], Neyret P., *et al.* (82%) [7]. Bonneville P., *et al.* [9] concluded that orthopedic treatment leads to significant laxity, the clinical impact of which is variable and depends on the patient's activities.

Conclusion

Dislocations of the knee are most often the prerogative of the young subject. Accidents due to motorcycles are the main circumstances. Associated lesions are frequent explaining the violence of the trauma. The care most often fits into a multidisciplinary framework. The treatment is usually orthopedic but results in a high percentage of laxity. The evolution is unpredictable despite the precocity of care.

Bibliography

1. Barsotti J., *et al.* "Dislocations of the knee". Traumatology handbook 6th edition Masson (2010).
2. Francesco L., *et al.* "Neglected Posterior Knee Dislocation: An Unusual Case Report". *Joints* 5 (2017): 1-3.
3. John M Siliski. "Dislocation and Soft Tissue Injuries of the Knee". Skeletal Trauma Basic Science, Management, and Reconstruction. Third edition, Elsevier Science (USA) (2003).
4. Lustig S., *et al.* "Biliary lesions and lesions of the knee: epidemiology and assessment of lesions in a retrospective series". *Orthopedic and Trauma Surgery Review* 95.8 (2009): 743-750.
5. Versier G., *et al.* Knee dislocation e-memoirs of the National Academy of Surgery 5.2 (2006): 1-9.
6. Lustig S., *et al.* "Recent ligamentous lesions of the adult's knee". *EMC-Locomotor Device* 8.1 (2013): 1-17.
7. Neyret P and Lobenhoffer P. "Knee injuries, serious ligament injuries, what management?" *Journal of Orthopedic and Trauma Surgery* 95S (2009): s177-s187.
8. Montgomery TJ., *et al.* "Orthopedic management of knee dislocations. Comparison of surgical reconstruction and immobilization". *American Journal of Knee Surgery* 8.3 (1995): 97-103.
9. Bonneville P., *et al.* "Traumatic dislocations of the knee associated with an interruption of the popliteal artery. Retrospective critical study of a series of 14 cases". *Orthopedic Surgery Review* 92 (2006): 768-777.
10. Bonneville P and Pidhorz L. "Trauma to the knees associated with rupture of the popliteal artery. Retrospective study of a series of 54 cases". *Orthopedic Surgery Review* 92 (2006): 508-517.
11. Rosset P. "Traumatic dislocation of the adult's knee SOO round table". *Ann Orthop West* 35 (2003): 303-336.
12. Richter M., *et al.* "Comparison of surgical repair or reconstruction of the crucial ligaments versus nonsurgical treatment in patients with traumatic knee dislocation". *American Journal of Sports Medicine* 30 (2002): 718-727.

13. Lustig S., *et al.* "Dislocations of the knee, severe ligament injuries, what management? Dislocation of knee, complex knee ligament injuries what care?" *Journal of Orthopedic and Trauma Surgery* 95S (2009): S177-S187.
14. Deltour A and Thienpont E. "Multi ligament damage to the knee". *Practical Orthopedics* (2015).

Volume 11 Issue 2 February 2020

©All rights reserved by Abdoul Kadri Moussa., *et al.*