East African Scholars Journal of Medicine and Surgery
Abbreviated Key Title: EAS J Med Surg
ISSN: 2663-1857 (Print) & ISSN: 2663-7332 (Online)
Published By East African Scholars Publisher, Kenya

OPEN ACCESS

Volume-8 | Issue-1 | Jan-2026 | DOI: https://doi.org/10.36349/easjms.2026.v08i01.005

Review Article

Traumatic Fractures of the Pelvic Limbs in Children in the Paediatric Surgery Department of Don Ka National Hospital: A Review of 35 Cases

Touré M A[1]*, Keita B[1], Barry T S[1], Barry A[1], Sylla Y[1], Condé M[1], Agbo-Panzo D[1]

[1]Paediatric Surgery Department, Donka National Hospital

Article History
Received: 09.11.2025
Accepted: 01.01.2026
Published: 19.01.2026

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: ***Introduction*:** The objective was to present the results of the management of traumatic pelvic fractures in children in the department. ***Materials and Methods***: This is a prospective 16-month study from January 2024 to July 2025 on patients admitted, hospitalised and treated for traumatic pelvic fractures. The parameters studied were epidemiological, clinical, radiological, therapeutic and evolutionary. ***Results*:** Thirty patients were registered, corresponding to 35 cases of lower limb fractures. The average age was 11.7 years (7 to 15 years). There were 13 (43.33%) boys and 17 (56.67%) girls, with a sex ratio of 0.76. The majority of patients were schoolchildren (28, or 93.33%). Only five (16.66%) patients were transported by ambulance. Road traffic accidents accounted for 25 cases (83.33%). Pain associated with functional impairment was found in all cases. The fracture was closed in 21 cases (70%). Overlap was the most commonly observed displacement in 14 cases (40%). ECMES was performed in 16 cases (45; 71%). The average length of hospitalisation was 17.46 days (1 to 140 days). The outcome was favourable in 25 patients (80.33%). The minimum follow-up period was 6 months. ***Conclusion*:** Traumatic fractures of the lower limb are common in our setting, with schoolchildren being the most affected. Only prevention can help reduce the frequency of these accidents.

Keywords: Traumatic Fractures, Lower Limbs, Paediatric Surgery, Management.

INTRODUCTION

Traumatology is one of the leading causes of hospitalisation in children [1]. Limb trauma is a common injury and most often results from road traffic accidents. Road traffic accidents are a global public health problem. According to the WHO, they are responsible for 50 million injuries and 1.2 million deaths per year, with Africa ranking first in terms of victims, with 28 deaths per 100,000 inhabitants. In addition, these injuries cause deformities, sequelae and disabilities in victims [2].

When these injuries are not fatal, they can lead to temporary or even permanent disability. Furthermore, a significant proportion of injuries in are severe enough to warrant hospitalisation. They therefore result in considerable use of healthcare services, numerous consultations with healthcare professionals, substantial direct and indirect costs, and physical or psychological sequelae that are difficult to quantify [3]. Trauma is one of the leading causes of death among children aged 5 to 9, with 20% attributed to pedestrians (Mathieu).

In Niger, 20.82% of childhood trauma affects the limbs, with the pelvic limb involved in 80.10% of cases [2].

Objective

To present the results of the management of lower limb trauma in children aged 0 to 15 years in the paediatric surgery department of Donka National Hospital.

MATERIALS AND METHODS

This is an 18-month prospective study from January 2024 to July 2025 on patients admitted, hospitalised and treated for pelvic limb trauma.

The parameters studied were epidemiological, clinical, radiological, therapeutic and evolutionary. The data were collected using a survey form and collected using Cobo-Collect and analysed using SPSS software.

Simple closed fractures without displacement, open Guistilo and Anderson type I fractures that were uninfected and had a short admission time, were

***Corresponding Author:** Mamadou Alpha Touré
Paediatric Surgery Department, Donka National Hospital

immobilised using either a pelvic-foot cast, a leg-foot cast or a plaster boot with varying degrees of trimming. Closed displaced diaphyseal fractures were treated with stable intramedullary nailing (ECMES). Open fractures of type 2 or higher with delayed consultation were treated with an external fixator or, in rare cases, combined with cross nailing, depending on the case. In cases associated with a pelvic fracture, the treatment was supplemented with a rigid splint with varying degrees of bilateral traction of the limbs in the bed plane.

The functional outcome was assessed after fracture healing based on clinical criteria (disappearance of pain, wound healing) and functional criteria (healing of lesions, resumption of walking). Using this assessment approach, the results were rated as very good, good, satisfactory, or poor.

RESULTS

During the study period, 30 patients were registered for pelvic fractures, including two patients with multiple fractures. The first had two fractures and the second had four fractures, corresponding to 34 cases of pelvic fractures. The average age of the patients was 11.7 years (7 to 15), with a median age of 12.5. There were 13 (43.33%) boys and 17 (56.67%) girls, with a sex ratio of 0.76 in favour of girls. The majority, 28 (93.33%), were schoolchildren. Nineteen cases (63.33%) were patients residing in Conakry and 11 patients (36.67%) came from the interior of the country. In 9 cases (30%), the accident occurred between 7 a.m. and 3 p.m., and in 21 cases (70%), it occurred between 4 p.m. and 9 p.m. Only five (16.66%) patients were taken to hospital by ambulance, while the majority, 25 cases (85.34%), were taken by taxi at their own expense. The admission time was less than 24 hours for 20 patients (66.67%), 4 patients (13.3%) were admitted within 48 hours and the remaining 6 (20%) patients were admitted more than 72 hours after the accident. Upon admission, 20 (66.68%) had already received medical treatment or first aid, 5 (16.66%) patients had received traditional treatment, and 5 others (16.66%) had received no treatment. The medical history was mainly medical, including 20 cases of malaria (66.66%) and 1 case (3.33%) of cerebral palsy ( ). In 29 cases, the mechanism was direct impact (96.67%). The type of accident was a road traffic accident in 25 cases (83.33%), 2 cases (6.66%) were assaults during a brawl, 2 cases (6.66%) involved firearms and 1 case (3.33%) was a workplace accident. The right lower limb was affected in 16 cases (53.33%), the left lower limb in 12 cases (40%), and both limbs in 2 cases (6.67%). Pain associated with functional impairment and swelling were found in all cases, axial deformity in 12 cases (40%), abnormal mobility in 9 cases (30%) and crepitus in 5 cases (16.66%). The fracture was closed in 21 cases (70%) and open in 9 cases (30%).*

Distribution according to associated injuries

Associated injuries	Number of cases	Percentage
Mandibular fracture	1	5.88
Multiple trauma	1	5.88
Pelvic fracture	1	5.88
Head injury	5	29.41
Tooth avulsion	1	5.88
Chest trauma	1	5.88
Devastating wound	1	5.88
Evisceration	1	5.88
Dermabrasion	4	23.52
Para-anal wound	1	5.88
Total	17	100

Frequency of anatomical pathology lesions in the bone segment on X-ray N=30

Anatomical and pathological lesions				Total	Percentages
Fracture line	Oblique 11	Transverse 12	Commutative 10	33	76.66
Seat	Mid-diaphysis 14	Proximal third 6	Distal third 3	23	76.66
Displacement	Overlap 14	Angulation 8	Translation 4	26	86.66

Distribution according to the bone segment involved

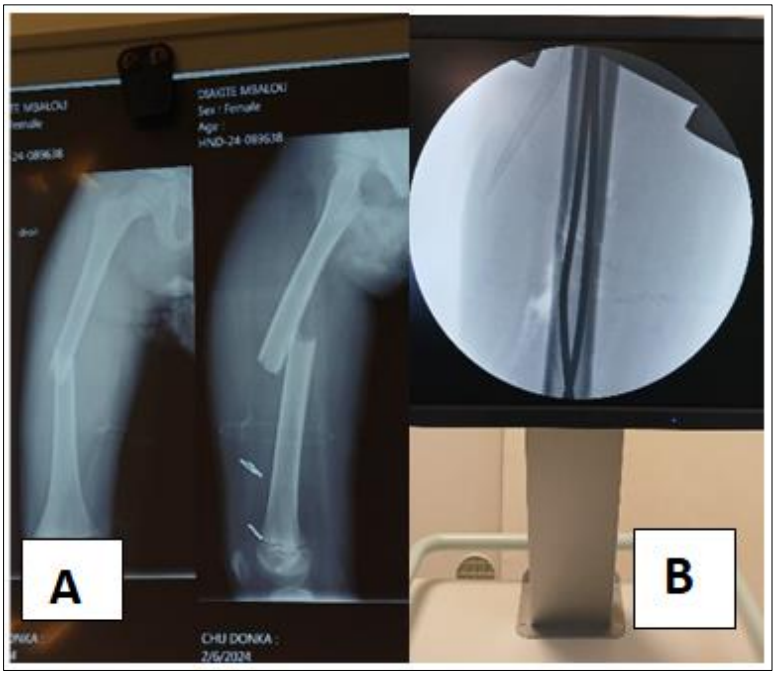
Bone segment	Number of cases	Percentages
Right femur	9	30
Left femur	6	20
Tibia	10	33.3
Fibula	7	23.33
Metatarsal	1	3.33

According to Guistilo's classification, the fracture site was type III B in 5 cases and type I in 1 case. Depending on the treatment performed, 14 (46.46%) patients underwent orthopaedic reduction followed by plaster cast immobilisation, including 11 (36.6%) with a crural-pedial cast and 3 (10%) with a pelvic-pedial cast. Four (13.33%) underwent traction in the bed plane before pelvic-foot cast im. Thirteen patients (43.43%) underwent ECMES, including 6 (20%) cases preceded by debridement.

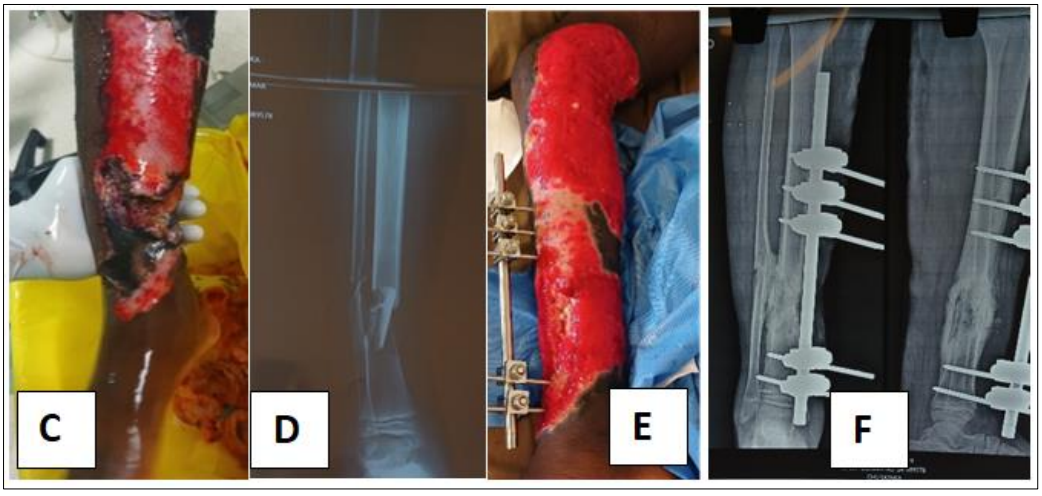
The average length of hospitalisation was 17.46 days (1 to 140 days), with a median of 15 days.

The outcome was favourable in 25 patients, or 80.33%, with a very good result in 6 patients (20%), a good result in 19 (63.33%) patients and a satisfactory result in 2 (6.66%). Three (10%) had poor outcomes with complications: one case of osteitis, one case of infection of osteosynthetic material, and one case of delayed healing.

The minimum follow-up period was 6 months and the maximum follow-up period was 22 months.



8-year-old girl, AVP mid-diaphyseal fracture in A, ECMES seen in B



12-year-old boy, type II open fracture with superinfection caused by a gas cylinder explosion, comminuted fracture in C, after trimming and application of external fixator in D, favourable progress at 2 months in F

DISCUSSION

Traumatic fractures of the pelvic limbs in children were an increasingly common reason for consultation in the paediatric surgery department. Until recently, prior to the renovation, reorganisation and

refurbishment of Donka National Hospital in 2023, trauma cases were treated by the orthopaedic trauma department, which received the majority of children. The paediatric surgery department only dealt with a few rare cases of fractures. Thanks to collaboration with colleagues in the orthopaedic trauma department, who share their experience, children are now treated exclusively in the paediatric surgery department. The average age of patients was 11.7 years (7-15) and the accidents occurred between 7 a.m. and 3 p.m., which explains why the majority of victims are schoolchildren, with a predominance of girls. However, several authors cited by Idé G [2], report a predominance of males. For Kaboro *et al*., [4], in Chad, the high frequency of accidents involving a third party could be explained by the fact that road traffic accidents were the leading cause of accidental trauma in children. The high frequency of road traffic accidents could be explained by the fact that road users often behave as if traffic regulations do not exist. Everyone drives as they please. Most vehicle drivers do not have a driving licence and therefore do not pay attention to children, who generally do not know how to cross the road [4]. In our series, only 5 (16.66%) patients were transported by ambulance. In the study by Idé G in Niger [2], 69 (40.35%) received pre-hospital transport. The average admission time was 5 hours in the Obame series [5], which was close to the result found in our series with an admission time of 6 hours. Regarding the predilection site of the pelvic limbs, Hoekman *et al*., [6], found that this could be explained by the fact that this part of the body is highly exposed to vehicles. In two cases, both limbs were affected simultaneously. The first patient had a fracture of the left femur associated with a fracture of the right tibia. The second patient had a case of bilateral floating knee due to a motorcycle accident. She was the third passenger on an overloaded motorcycle when a car collided with it from behind, resulting in head trauma with initial loss of consciousness, a closed fracture of the left femur and tibia, a type I open fracture of the right tibia, a deep contaminated contusion wound to the right knee, and a closed fracture of the right femur. In our series, the trauma was open in 6 cases (17.14%), and the first patient who was the victim of a firearm injury had a type 3B open fracture according to Guistilo and Anderson. A 13-year-old girl was sitting in the living room after returning from school when a bullet passed through a window and caused an open trauma to her left thigh and leg during a riot that was taking place in the neighbourhood. There was a fracture of the distal end of the left femur and a butterfly fracture of the tibial plateau. The bullet entered the posterior-medial aspect of the distal quarter of the thigh and exited the anterior aspect of the proximal quarter of the leg opposite the tibial plateau. Several authors have reported a higher proportion of open fractures in their studies, with Mouafo [7], Nwadinigwe [8], and Ouattara [9], in Abidjan in 2007 with 23.50%, 25.50% and 43% respectively. In terms of treatment, orthopaedic and/or surgical treatment is used. Orthopaedic treatment involves plaster cast immobilisation, continuous traction of the limb, or a combination of both. This approach is common to almost all authors. In our series, 17 patients (56.66%) underwent surgery, including 13 ECMES and 4 external fixators. In our practice, since the improvement of technical facilities such as the availability of the image intensifier, displaced diaphyseal fractures benefit from closed ECMES or converted to open ECMES if there is muscle interposition in particular. Thus, the patient with double floating knee underwent ECMES of both femurs and both tibias. The left pelvic limb had progressed favourably, but the right limb had an infected wound on the lateral side of the knee, which was close to the entry points of the femoral and lateral tibial pins. The outcome was complicated by infection of the osteosynthetic material, forcing us to remove the pins and replace them with an external fixator. The outcome improved and the patient is awaiting curettage of the femoral focus followed by iliac bone grafting on the advice of the orthopaedic mission 'Les enfants du Noma' (The Children of the Noma Hospital). As for the patient with the double open gunshot wound, we performed debridement followed by parallel pinning of the tibial plateau fracture and the application of an external fixator to immobilise the femoral focus.

In our series, the outcome was favourable in 80.33% of cases.

Our results are similar to those found by Konan KJ [10], in Ivory Coast and Abdou OR in Mali [11], who found 84.64% and 85% favourable results, respectively.

CONCLUSION

Traumatic fractures of the pelvic limbs are common at Donka National Hospital especially among students aged 7 to 15. To optimise the quality of care for pelvic limb trauma in children, emphasis must be placed on understanding the anatomical characteristics of children's bones and on raising awareness among parents to protect their children, as well as among road users to ensure compliance with traffic regulations.

REFERENCES

1. Mohamed AS, Omid A, Faye Fall AL, Mbaye PA, Seck NF, Ndour O et al (2015) Domestic accidents in children in Dakar: 555 cases. J Pédiatre Pueric 28(5):217–222.
2. Idé G, Abdoul Wahab M, Kanta OA, Bazanfaré, Illé S. Clinical profile and management of limb injuries in children aged 0 to 15 years in Niamey, Health Sci. Dis: Vol 24 (10) October 2023 pp 71-73
3. Gaudeuille A., Bobossi-Serengbe G., Kolouba J.M.; Mandaba J.L. Epidemiology of accidents in children in Bangui (Central African Republic). Revue Méd. d'Afr. Noire, 2002; 49: 557-560
4. KABORO, M., SILE, S. N., DJONGA, O., *et al.* Accidental trauma in children admitted to the emergency department of the N'Djamena General

Reference Hospital (Chad). *Rev Afr Anesth Med Urg*, 2011, vol. 16(3).
5. Obame R et al. Initial management of paediatric trauma patients in the emergency department of a referral hospital
6. Traumatology Hospital in Libreville (Gabon**).** Health Sciences and Diseases 2019; 20 (1): 1-19p.
7. Hockman P, Oumarou MT, Djia A**.** Motor vehicle accident injuries: a public health problem in Niamey, Niger. Médecine d'Afrique Noire 1996;43 (11): 596-601
8. Mouafo et al. Clinical epidemiology of traumatic fractures in children at Yaoundé Central Hospital: of 226 cases. Health Sci. Dis 2011; 12 (1): 3p.
9. Nwadinigwe C, Ihezie C, Ividiobi E. Fractures in children. Niger J Med 2006; 15 (1): 81-4
10. Ouattara O, Kouamé BD, Odehouri TH et al. Results of treatment for fractures of both bones of the forearm in Mali Médical 2007; 22 (3): 43-6.
11. Konan K J Assohoun K T, Kouassi F. Ehua S.F. Epidemiological profile of road traffic injuries in the the Yopougon University Hospital Emergency Department. Rev. Int. Sc. Méd 2006; 8 (3): 44-48.

Cite This Article: Touré M A, Keita B, Barry T S, Barry A, Sylla Y, Condé M, Agbo-Panzo D (2025). Traumatic Fractures of the Pelvic Limbs in Children in the Paediatric Surgery Department of Don Ka National Hospital: A Review of 35 Cases. *East African Scholars J Med Surg, 8*(1), 19-23.