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Complications of the Traditional Treatment of Limb Fractures: Frequency and Management in the Orthopedics-Traumatology Department of the CHU Ignace Deen

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Abstract

Introduction: Traditional treatment of fractures is common practice in underdeveloped countries. The objective was to report our service's experience in managing complications related to the traditional treatment of limb fractures.

Patients and methods: This was a prospective descriptive study over 12 months (September 2018-August 2019). We selected all patients with complications related to the traditional treatment of limb fractures. The patients were evaluated according to Souna BS criteria with an average follow-up of 8.17 months.

Results: The frequency of complications of traditional treatment of limb fractures was 15.99%. The average age of the patients was 36.02 years, with a male predominance of 73.13% and a sex ratio of 2.72. The low income of patients was the reason for choosing traditional treatment in 34.32%. The application of poultice plus immobilization by sticks held by a bandage was the traditional treatment used in 40.30%. Pseudarthroses (28.36%) and malunions (20.90%) were the main complications after traditional treatment. Surgical treatment was performed in 95.52%. According to Souna BS criteria, our functional results were good at 52.08%, average at 29.17% and poor in 18.75% of cases.

Conclusion: The traditional treatment of fractures is a popular but unconventional practice that can lead to severe sequelae for which surgical treatment remains the best alternative.

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Introduction

Traditional treatment of fractures is a common practice in underdeveloped countries. It consists of manual reduction and compression of the fracture using mystical powers [1].

Traditional healers use a splint made of wood or millet stalks with insufficient reduction maintained by a bandage with inextensible tissue, applied circumferentially and able to perform a tourniquet on the affected limb [2].

Traditional medicine accounts for about 40% of health care in China and up to 80% in Africa [3]. This is a practice at the origin of many complications that have been the subject of publications in the international literature [4-7].

In daily practice, African medical practitioners are often confronted with complications related to the traditional treatment of fractures [8]. Frequently encountered complications include gangrene of the affected limb, pseudarthrosis, malunions, stiffness and osteitis [9].

Orthopaedic surgeons' primary objective in fracture management is to obtain anatomical reduction promoting fracture healing and functional recovery [10].

The objective of this study is to report our service's experience in managing complications related to the traditional treatment of limb fractures.

Patients and methods

This prospective descriptive study lasted 12 months, from September 1, 2018, to August 31, 2019.

The target population concerned patients presenting with a complication of fractures seen secondarily.

The study population included all patients received, hospitalized and treated in the department for complications related to traditional treatment of limb fractures.

For this, we included all patients with complications related to the traditional treatment of limb fractures. We studied both qualitative and quantitative variables.

On a clinical level, through questioning, we looked for the initial lesions. We identified the reasons for the choice of traditional treatment, the type **(Figure 1)** and duration of traditional treatment and the type of complications.

The paraclinical concerned the physical, biochemical and imaging examinations.

The care was mainly focused on three (3) components. The medical treatment was systematic in all the patients, and the orthopaedic treatment concerned the cases of ischemic complications received early. Concerning the surgical treatment, we performed debridement plus the placement of external fixators in cases of open septic fractures, open or closed stump amputation in cases of gangrene **(Figure 2)**, debridement and sequestrectomy for cases of osteitis, intermediate arthroplasty in cases of avascular necrosis of the femoral head and reduction plus osteosynthesis by (screwed plate, nail, DHS, cancellous screw, pins) in cases of pseudarthrosis **(Figure 3)** and malunion **(Figure 4)**.

We recorded some postoperative complications, particularly cases of superficial infections treated with local care and cases of deep infections requiring a return to the operating room for debridement with sampling for cytobacteriological examination plus an antibiogram. Heel pads corrected some pelvic limb length inequalities, and cases of joint stiffness were managed by physiotherapy. Cases of armed pseudarthroses and malunions were taken back to the operating room for a new osteosynthesis. We deplored 2 cases of postoperative death.

The patients were reviewed and evaluated according to the evaluation criteria of Souna BS with an average follow-up of 8.17 months and extremes of 18 days and 16 months. We were unable to assess all patients due to deaths and loss of follow-up.

Table 1: Souna BS functional results evaluation criteria [11].

Good	Consolidated fractures without functional disorders (stiffness, limb shortening) patients with no complaints.
Means	Consolidated fractures with joint stiffness or shortening of the lower limb to 2.5 cm.
Poor	Consolidated fractures with upper limb shortening of 2.5 cm, including amputations

Results

Out of 419 hospitalized patients, we found 67 complications related to the traditional treatment of limb fractures, i.e. a hospital frequency of 15.99%.

The age group of 15-23 years was the most affected, 23.88%, with an average age of 36.02 years, the extremes of 5 years and 82 years.

There was a male predominance in 73.13% against 26.87% of female subjects and a sex ratio of 2.72.

The closed fracture was the predominant initial lesion in 46 cases (68.66%) against 21 cases (31.34%) of closed fracture.

Low income was the reason for choosing traditional treatment in 34.32%, followed by parents' decision and trust in traditional healers with respective percentages of 26.86% and 16.41%.

Table 2: Distribution of patients according to the reasons for the initial choice of traditional treatment.

reasons for the initial choice of traditional treatment	Number	(%)
low income	**23**	**34,32**
decision of the parents	18	26,86
trust in traditional healers	11	16,41
advised by neighbours or friends/trial	6	8,96
ignorance of the fracture	3	4,48
distance from a hospital centre	2	2,99
habit	2	2,99
fear of intervention	2	2,99
total	**67**	**100**

The application of the poultice associated with the immobilization by rods maintained with the help of a bandage was the type of traditional treatment the most carried out in 40.30%, followed by the immobilization by rods maintained by a bandage and the application of the poultice in respectively 23.88% and 19.40%.

Table 3: Distribution of patients according to the type of traditional treatment.

Types of the traditional treatment	Number	(%)
Poultice + Wand + Bandage	**27**	**40,30**
Immobilization by rod + Bandage	16	23,88
Application of poultice	13	19,40
Massage + Bandage	5	7,46
Simple Massage with beurre shea butter	4	5,97
Poultice+ Wand+ Bandage+ Immobilization per brick	2	2,99
Total	**67**	**100**

Figure 1: Clinical images showing some types of traditional treatment.

The average duration of traditional treatment was 50.08 days, with extremes of 3 and 210 days.

Pseudarthroses, malunions and significant oedema of the fractured limb associated or not with blisters were the most frequent types of complications related to traditional treatment in respectively 28.38%, 20.90% and 19.40% of cases and followed by limb gangrene and open septic fracture with respective proportions of 13.43% and 11.94%.

Table 4: Distribution of patients according to a type of complication.

Types de complications	Number	(%)
Nonunions	**19**	**28,36**
Malunion	14	20,90
Blisters/significant oedema of the limb on fracture poultice	13	19,40
Gangrene	9	13,43
Septic open fractures	8	11,94
Osteitis	3	4,48
Ankylosis	**1**	**1,49**
Total	**67**	**100**

The average time for hospital treatment was 6.70 days, with extremes of 1 and 17 days. The management was surgical in 64 cases, or 95.52%, against 3 cases of orthopaedic treatment or 4.48%.

Osteosynthesis by screw plate was performed in 18 patients, i.e. 28.13%, followed by intramedullary nailing, amputation and debridement plus installation of external fixators with respective frequencies of 18.75%, 14.06% and 12.50%.

Figure 2: Clinical and radiological images showing gangrene of the left forearm following traditional treatment of a humeral paddle fracture.

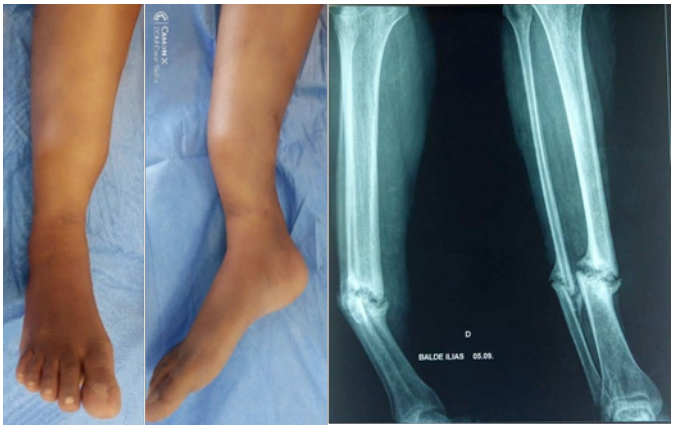

Figure 3: Clinical and radiological images of hypertrophic aseptic pseudarthrosis of the two bones of the right leg.

Figure 4: Clinical and radiological images of an epiphyseal-metaphyseal malunion at the distal end of the left femur.

Discussion

The frequency of complications related to traditional treatment of limb fractures was 15.99%. This result is superior to that of Mensah E et al. [1] in Benin in 2017, who found a frequency of 7.8%. The resurgence of road traffic accidents, the population's low socioeconomic level, and the accessibility of traditional medicine could explain this high frequency.

The age group of 15-24 years was the most affected, with a proportion of 23.88%. The average age of the patients was 36.02 years, with extremes of 5 years and 82 years. The hyperactivity of this layer of young subjects, making them vulnerable to road traffic accidents and the involvement of parents in mak-

Table 5: Distribution of patients according to the type of surgical treatment performed.

Type of surgical treatment	Number	(%)
Ostéosynthesis by screwed plate	**18**	**28,13**
Intramedullary nailing	12	18,75
Amputation	9	14,06
Débridement + placement of external fixators	8	12,50
Plug-in	5	7,81
Intermediate arthroplasty	3	4,69
Screwing	3	4,69
Débridement/Séquestrectomy	3	4,69
Guying	2	3,12
Ostéosynthesis by DHS	1	1,56
Total	**64**	**100**

Forty-eight patients were reviewed and evaluated according to Souna BS criteria. We obtained 27 good results (56.25%), 12 average results (25%) and nine bad results (18.75%).

ing certain decisions could justify the fact that young people are the most affected.

Our study found male predominance in 73.13% of cases and a sex ratio of 2.72. The same observation was made by Lamah L et al. [7] in 2013 in Guinea, Alam W et al. [10] in 2016 in Pakistan and Panda AK et al. [12] in India in 2011, reporting a male predominance of 80%, 69.67% and 55.48% respectively. This male predominance is due to the exposure of men to trauma related to the activities they carry out.

In this study, low income was the most mentioned reason for choosing traditional treatment in 34.32% of cases, followed by the parent's decision in 26.86%. Owumi BE et al. [13] 2013 in Nigeria reported 68.2% of cases of affordability of traditional medicine. However, Saadeldin AI et al. [9] in Sudan in 2010 noted 37% of cases of belief in traditional medicine, followed by its low cost with 14.06%. These results would be justified not only by the low socioeconomic level of the population but also by ignorance and the weight of tradition within our population.

The application of the poultice plus immobilization by sticks held by a bandage was the most frequent type of traditional treatment, with 40.30% of cases. Lamah L et al. [7], in 2013 in Guinea, obtained 47.1% of cases of immobilization by sticks plus bandages. On the other hand, Adamou H et al. [2] mentioned 77.61% of cases of restraint with stems of millet or pieces of wood as the first resort for traditional care. The frequent recourse to this traditional method could be linked to the frequency of diaphyseal fractures, and this technique would be used not only to immobilize fracture sites but also to combat pain in patients.

The most frequent complications in this work were pseudarthroses, with 28.36% of cases, followed by malunions, with 24.72%, unlike Alam W et al. [10] in Pakistan in 2016, who recorded 25.10% malunions and 20.60% non-unions. The insufficiency of the reduction could explain the appearance of these complications, the lack of contention of the foci of fractures by traditional therapists, the lack of mastery of the anatomy, the non-respect of the conditions of immobilization of fracture and early patient support.

The management was mainly surgical in 95.52%; osteosynthesis by screw plate was performed in 28.13% of cases, followed by intramedullary nailing in 17.19% of cases. In the study by Mensah E et al. [14], all patients benefited from surgical treatment, i.e. 100%, and screwed plates were used in 28% of cases, followed by intramedullary nails in 21% of cases. Souna BS et al. [11] reported 24.59% of cases of osteosynthesis by screwed plates and 22.95% of cases of pinning. This predominance of surgical treatment testifies to the difficulties of management linked to the seriousness of the complications. It proves that surgery remains the best recourse in the face of the damage and failures caused by traditional healers. The choice of osteosynthesis material would be influenced by its availability, nature and the location of the lesions.

We reviewed and assessed 48 patients according to the Souna BS functional outcome assessment criteria [11]. We recorded 56.25% good results, 25% average results and 18.75% poor results. Mensah E et al. [14] found 81% good, 7% average, and 12% poor results. Surgical management has improved the functional results of complications related to the traditional treatment of fractures. It proves that the hospital remains the best resource for managing limb trauma.

Conclusion

In short, the traditional treatment of limb fractures is still a common practice in our country because of its economic accessibility but also the cultural attachment of the population.

References

1. Mensah E, Tidjani IF, Chigblo P, Lawson E, Ndeffo K, et al. Aspects épidémiologiques et lésionnels des complications du traitement traditionnel des fractures de membres à Parakou (Bénin). Rev Chir Orthop. 2017; 103: 330-334.
2. Adamou H, Habou O, Amadou MI, Akambi SK, Magagi A, et al. Indications des amputations majeures des membres à l'Hôpital National de Zinder, Niger: Etude rétrospective d'une série de 106 patients. Rev CAMES Santé. 2017; 5: 10-15.
3. Nwachukwu BU, Okwesili IC, Harris MB, Katz JN. Traditional bonesetters and contemporary orthopaedic fracture care in a developing nation: historical aspects, contemporary status and future directions.The Open Orthopaedics Journal. 2011; 5: 20-26.
4. Tékpa BJD, Ngongang OGF, Keïta K, Alumeti D, Sané AD, et al. Gangrène de membre à la suite d'un traitement traditionnel de fractures par attelle en bambou chez l'enfant à l'hôpital régional de Kaolack(Sénégal). Bull Soc Pathol Exot. 2013; 106: 100-103.
5. Memon FA, Saeed G, Fazal B, Bhutto I, Laghari M, et al. Complications of fracture treatement by traditional bonesetters at Hyderabad. J Pak Ortho Asso. 2009; 21: 58-64.
6. Mathieu L, Bertani A, Chaudier P, Charpail C, Rongieras F, et al. Prise en charge des complications du traitement traditionnel des fractures du membre supérieur : expérience d'une antenne chirurgicale de l'avant française au Tchad. Chirurgie de la main. 2014; 33: 137-143.
7. Lamah L, Handy D, Bah ML, Onivogui D, Keita K, et al. Complications du traitement traditionnel des fractures : aspects épidémiologiques et cliniques. Rev Afr Chir Spéc. 2013; 7: 31-35.
8. Hodonou MA, Allodé SA, Tamou SB, Moumouni MA, Fatigba OH, et al. Sortie Contre Avis Médical Des Victimes Des Fractures De Membres Au Centre Hospitalier Universitaire Départemental (CHUD) du Borgou- Alibori Au Nord Est Du Benin. World Wide Journal of Multidisciplinary Research and Development. 2017; 3: 466-469.

9. Saadeldin AI, Osman BM, Elrofai SB. Why do people prefer traditional bone setters in Sudan? Sudan Journal of Medical Sciences. 2010; 5: 199-205.

10. Alam W, Shah FA, Ahmed A, Ahmad S, Shah A. Traditional bonesetters : frequency of complications with treatment by traditional bonesetter. The Professional Medical Journal. 2016; 23: 699-704.

11. Souna BS, Djibo H, Danhaoua AM, Gbaguidi F. Les limites du traitement traditionnel des fractures des membres (JIBIRA): à propos de 61 patients opérés à Niamey Niger. Med Afr Noire. 2009; 56: 652-656.

12. Panda AK, Rout S. Puttur Kattu (bandage)-A traditional bone setting practice in south India. Journal of Ayurveda & Integrative Medecine. 2011; 2: 174-178.

13. Owumi BE, Taiwo PA, Olorunnisola AS. Utilization of traditional bonesetters in the treatment of bone fracture in Ibadan North Local Government. International Journal of Humanities and Social Science Invention. 2013; 2: 47-57.

14. Mensah E, Chigblo P, Ndeffo K, Tidjani IF, Lawson E, et al.Traitement des complications du traitement traditionnel des fractures dans un service de chirurgie générale. J Afr Chir Orthop Trauma 2016; 1: 132-136.