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Research Article

Management of Neglected Fractures with Limited Resources

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Abstract

Although the Treatment of Limb Fractures is well codified, in our context patients still choose to treat themselves with traditional medicine before seeking modern medicine. This is one of the causes of neglected fractures for which management becomes complicated for the practitioner. To present the results of the management of these fractures in northern Benin in our context of under-equipment and low socio-economic level of patients. To achieve our objectives, we conducted a retrospective and descriptive study over a period of 2 years in our General Surgery Department. The diagnosis of fracture complexity was made based on data from clinical examination, X-ray and Doppler echo when conditions were met. Bone and soft lesions were classified according to Gustillo-Anderson (G/A). During the period of study, seventy cases were labeled neglected fractures. The average time to admission was two hundred and forty days. With regard to the causes of trauma, sixty-six patients had experienced a crash injury, two cases of a sports accidents and two cases of work accidents. For previous treatment, 30 patients had received traditional treatment, 25 had received osteosynthesis, 10 patients had received conservative treatment and 5 patients had not undertaken any treatment due to lack of means. Fracture management consisted in open reduction and internal fixation by plating in 28 cases, intramedullary nailing in 20 cases, external fixation in 14 cases and amputation in 8 cases. Bone reconstruction was performed using the Masquelet induced membrane technique in fifteen cases. Soft-tissue coverage was achieved by thin skin grafting in 2 cases of Gustilo 3A injury and pedicled flap transfer in 11 cases of Gustilo 3B injury.

Keywords: fracture – neglected- flap

Introduction

Although the treatment of fractures is well codified [1,2], it remains in our context divided between traditional and modern medicine. Added to this is thecorollary of the absence of social security. This is thecause of neglected fractures whose managementbecomes complex for the practitioner [3]. The purpose of this study is to present the results of the management of these fractures in northern Benin in our context of under-equipment and low socio-economic level of patients.

Materials and Methods

We conducted a retrospective, descriptive study overa period of 2 years from May 1, 2020 to April 30, 2022in the Department of General Surgery of the Saint John of God Hospital in Tanguiéta. The averagedecline was 4 months. Diagnosis of fracture complexity was made based on data from clinical examination, X-ray and Doppler echo whenconditions required.

We included in our study, patients:

care in the Department of General Surgery for aneglected fracture of the limbs during the study period. - aged 15 years and over.

The monitoring consultations took place at 45 days, 3months, 6 months and 9 months. Bone and soft

lesions were classified according to Gustillo- Anderson (G/A).

Results

During the study period, 70 cases were labeled neglected fractures, including 58 men and 12 women, for a sex ratio of 4.83. The average time to admission was 240 days with extremes ranging from 13 days to 1555 days.

Sixty-six patients had experienced a crash injury (94%); involving a two-wheeled machine in 55 cases. Two patients were victims of a sports accident and two of a work accident.

The interrogation of patients made it possible to find a direct mechanism in 27 cases (38.57%), indirect in 5 cases (7.14%) and imprecise in 38 cases (54.28%). The fracture was open in 23 patients and closed in 47 patients.

Of the previous treatment, 30 (42.8%) patients had received traditional treatment, 25 (35.7%) had

received osteosynthesis, 10 (14.2%) patients had

received conservative treatment and 5 (7.1%) patients had not undertaken any treatment due to lack of means.

Examination at the admission found a sensorimotor deficit in the territory of the common fibular nerve in 8 patients (11.43%) and in the territory of the tibial nerve in 11 patients (15%).

Fractures were located at the femur in 25 cases, the tibia in 35 cases and the humerus in 10 cases. There were 40 cases (%) of non-union including 10 internal fixation failures, 20 cases (28.6%) of delayed union, 3 cases (4.3%) of malunion and only 7 cases (10%) of recent fracture.

Nineteen patients presented with a bone defect. The defect size was less than 2 cm in 4 cases, between 2 and 5 cm in 3 cases.

Thirteen patients had a soft tissue defect. Bacteriological examination in infected cases made it possible to find: Gram-negative bacilli in 22 cases or 61.11% of cases (Escherichia coli in 10 cases, Klebsiella pneumoniae associated with another germ in 5 cases out of 7 cases; Enterobacter spp in 4 cases and Proteus mirabilis in 2 cases), gram-positive cocci were found in 8 cases or 22.22% of cases.

Fracture management consisted in open reduction and internal fixation by plating in 28 cases (40%), intramedullary nailing in 20 cases (28.5%), external fixation in 14 cases (20%) and amputation in 8 cases (11.5%). Soft-tissue coverage was achieved by thin skin grafting in 2 cases of Gustilo 3A injury and pedicled flap transfer in 11 cases of Gustilo 3B injury.

Bone reconstruction was performed using the Masquelet induced membrane technique in 15 cases21,4 %).

The average hospital stay was 10 days [range 5 to 16days].

At the mean follow-up time of 9 months, bone union was achieved in 40 cases (57 %). In infected cases, bone infection was under control in 15 cases (50% ofinfected cases) but septic recurrence was noticed in 15 cases (50% of infected cases). Patients were withlower limb fractures were able to walk unaided in 45 cases (64,3), but 12 (35,7) walked using crutches.

Discussion

The monocentric nature of this study does not allow us to draw conclusions at the national level. The average consultation time in our study was 240 days.This delay was explained by cultural factors (including the fear of surgery and the preferential use of traditional medicine) and a lack of financial means tomeet all the expenses inherent in the intake in chargeof fracture by modern medicine. Persistent non-union and infection recurrence were the most frequent complications in this series as reported by manyauthors in similar contexts of care [4,5].

Conclusion

The treatment of neglected fractures is expensive, multidisciplinary and time-consuming. In addition to the basics bone fixation techniques, it requires from the practitioner surgical skills in bone infection treatment, soft-tissue coverage, and bone reconstruction.

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