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**Original Research Article**

# Stab Wounds of the Abdomen: Epidemiological, Clinical, Therapeutic and Evolutionary Aspects in the General Surgery Department of the N'zérékoré Regional Hospital (Guinea)

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**Abstract:** ***Aim*:** To determine the place of abdominal wounds among abdominal traumas and to describe their clinical, therapeutic and evolutionary aspects. ***Patients and Methods*:** This was a retrospective descriptive study based on analysis of the records of patients seen for abdominal stab wounds in the general surgery department of the N'Zérékoré regional hospital during the period from January 2011 to December 31, 2020. Epidemiological, clinical, therapeutic and evolutionary parameters were studied. ***Results*:** Out of a total of 745 cases of abdominal trauma, we found 89 cases of abdominal stab wounds, a frequency of 12.49%. The average age was 36, with a clear male predominance (78%). Pupils/students were the most represented (32.58%), and criminal assault was the most common circumstance (70.79%). Operative treatment was the most common (74%), and the small intestine was the organ most affected (34.84%); the after-effects were simple in 89.39% of patients, and we recorded 4 deaths (6.06%). ***Conclusion***: Stab wounds of the abdomen are a real public health problem in Africa, especially in low-resource countries such as ours. Surgery is still indicated for severe injuries or complications.

**Keywords:** Wounds, Abdomen, Knife, Surgery, N'Zérékoré.



## INTRODUCTION

Abdominal wounds are open traumas of the abdomen that represent a solution of parietal continuity, either simple or associated with visceral lesions, involving the region between the diaphragm at the top and the pelvic floor at the bottom, regardless of the point of impact.

The frequency of abdominal wounds has increased worldwide, and varies from country to country. This is linked to an increase in crime, the availability of weapons, and the presence of conflicts [1, 2].

Although these traumas are isolated in 30 to 40% of cases, they can be part of a polytrauma context [3].

The prognosis of abdominal wounds depends on a number of factors: the delay in treatment, vascular damage, the number of organs injured and the technical facilities available [4].

The aim of this study was to analyze patient files to determine the place occupied by knife wounds in relation to other etiologies, and to describe the therapeutic and evolutionary modalities.

## PATIENTS AND METHODS

This was a two (2)-year retrospective descriptive study of the records of patients received for stab wounds to the abdomen in the general surgery department of the N'Zérékoré regional hospital. The study covered a 2-year period from January 2019 to December 2020.Records of patients received for abdominal stab wounds were included, irrespective of age, sex, origin and circumstances of occurrence. Frequency, sociodemographic profile and clinical, therapeutic and evolutionary data were analyzed.

## RESULTS

We retained 89 files (11.95%); representing 12.49% of stab wounds to the abdomen (n= 93); 17.99% of wounds to the abdomen (n= 134) of the 745 abdominal trauma cases.

The average age of our patients was 36 years, with extremes of 7 and 65 years. The 21 - 30 age group was the most affected with 49.44% (n= 44), followed by the 31 - 40 age group with 22.47% (n= 20), with a clear

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male predominance (78%) and a sex ratio of 3.45. Pupils and students were the most affected socio-professional group with 32.58%. Trauma occurred in 51.69% (n= 46) of cases in the street.

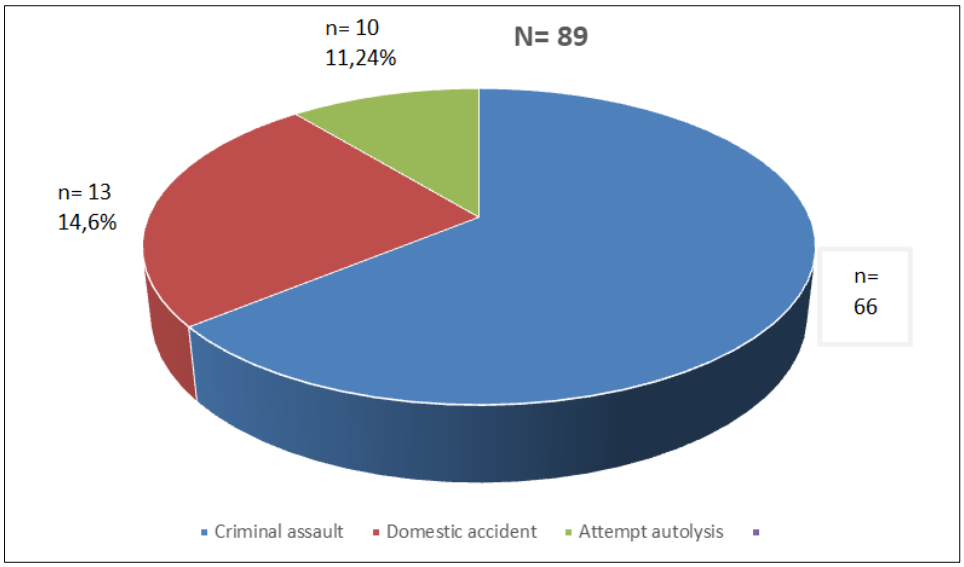


**Figure 1: Physiognomy of the circumstances of occurrence**

**Table I: Distribution of patients by type of knife used**

| Type of stabbing | Number | % of patients |
|---|---|---|
| Iron bar | 8 | 8,99 |
| Scissors | 22 | 24,72 |
| Kife | 58 | 65,17 |
| Machete | 1 | 1,12 |
| Total | 89 | 100 |

Patients consulted us on average 10.5 hours after the onset of trauma, with extremes of 3h and 18h, and the majority of our patients were stable at 87% (n=77). Abdominal pain was the most constant functional sign (l00%), while abdominal defence or contracture was present in 69.66%. The wound was located on the right flank in 39 cases (43.82%). Abdominal ultrasound was performed in 59.56% of patients. Operative treatment was the most common, accounting for 74% (n=66). Intraoperatively, the approach was median above and below the umbilicus (42 cases), median above the umbilicus (17) and median below the umbilicus (7). The small intestine was the organ most affected (34.84%), followed by the epiploon (28.79%), then the mesentery (21.21%). Simple suture of viscera was the most common surgical procedure, with 92.49% (n= 61).

The average hospital stay was 10 days (extremes: 2 and 18 days).

Postoperative follow-up was straightforward in the majority of patients (89.89%), complicated by parietal suppuration (3.03%), digestive fistula (1.52%) and 4 cases of death (6.06%).

## DISCUSSION

In this two (2)-year retrospective descriptive study, stab wounds to the abdomen accounted for 11.95% of all abdominal trauma. This result is lower than that of Zidane M *et al*., [5], who reported a frequency of 82% for penetrating abdominal wounds. In our context, for financial reasons, many injured patients are initially referred to peripheral private surgeries, and are only referred to hospital in the event of major complications.

The condition remains primarily a pathology of the young. This result is similar to that of Ndong A *et al*., [6], who reported an average age of 31.3 years in their studies. This may be linked to the activities carried out by young people, especially at night, and to the use of narcotics. We noted a predominance of males, as reported in the study by Bombah F *et al*., [7], with a male predominance of 89.2% and a sex ratio of 8.25, as males have more risky attitudes than females, exposing them to brawls.

Students are the most represented socio-professional group. Our results are similar to those of Choua O *et al*., [8], who reported a frequency of 39.5%. We explain this by the fact that young students and pupils sometimes engage in income-generating activities by becoming motorcycle cab drivers, or doing itinerant

trade, which exposes them to aggression from brigands and sometimes from their supposed customers.

Criminal assaults were the circumstances most frequently encountered in our series. This finding had already been made by Zidane M *et al*., [5], who reported 75%. This could be explained by the consumption of alcohol and/or narcotics, which favors brawls and assaults.

In our study, the knife was the most common agent used to provoke aggression. Our result corroborates that of Choua O *et al.*, [8], i.e. 77.5% of cases.

This could be explained by the easy acquisition of edged weapons, with the carrying of knives by men due to uprooting, and their easy availability in our markets.

In our series, the average consultation time was 10.5 hours. This result is similar to that reported by Fofana N *et al*., [9], i.e. 9.4h, and in other low-resource countries [10]. There are several possible reasons for this result: The distance between the site of the accident and the hospital; the lack of medical transport, often the injured arrive in emergency by public transport or cab without initial care, and this is a factor worsening the prognosis of the injured, the misuse of traditional medicine.

Clinically, abdominal pain was present in all our patients. Our results are identical to those of Fofana N *et al*., [9], where the pain was 100%. This is justified by the fact that this reason for consultation is relatively common in abdominal trauma. Clinical examination, hemodynamic status and signs of peritoneal irritation are the key elements guiding management [11, 12].

Abdominal guarding or contracture was the most common physical sign. This result is higher than that of Sogoba G [13], who found 28.6%. This difference may be explained by the high number of cases of peritonitis in our study. Abdominopelvic CT is now the imaging method of choice for exploring the abdomen in emergencies [14].

However, none of our patients benefited from this examination for reasons of availability. Non-operative treatment is increasingly recommended. This approach was adopted in 23 of our patients. Our results are inferior to those of Boyodi KT *et al*., [15], where surgical abstention was successfully observed in 46 patients (88.6%). This difference could be explained primarily by the difference in quality of the various technical facilities linked to the intensive care unit, and secondarily by the size of the population.

Laparotomy was performed in 66 of our patients. This result is similar to that of Kambiré JL *et al*., [16], where laparotomy was performed in 96.4% of cases. This high rate of laparotomy could be explained by the unavailability of morphological explorations for diagnostic and/or therapeutic purposes, despite the need to take an emergency therapeutic decision.

In our series, the small intestine was the organ most affected, a finding which corroborates that of Raherinantenaina F *et al*., [17], who found 32.5%. This result is justified by the anatomical position of the intestine, which is highly exposed in abdominal wounds, especially stab wounds.

Simple suturing was the most common surgical procedure, which may be explained by the absence of multiple perforations associated or not with mesenteric damage intraoperatively. This result differs from that of Kanté L *et al*., [18], who reported parietal suppuration in 8.57% of cases and digestive fistulas in 2.85%.

In fact, the postoperative course depends on the type of lesion, the admission time, the experience of the operators and the technical resources available.

The length of hospital stay for patients is no different from that reported in the literature, which ranges from 5 to 12 days [9-19]. The length of hospital stay depends on the severity of the lesions, the treatment option and any associated lesions.

## CONCLUSION

Stab wounds of the abdomen are a real public health problem worldwide, in Africa and especially in low-resource countries, and their prognosis depends on early treatment.

**Conflicts of Interest:** The authors declare that there were no conflicts of interest in the scientific writing of this work.

**Informed Consent Statement:** All authors appearing in this article share equally and agree to the publication of this article in your journal.

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