



Research Article

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Penetrating wounds of the abdomen by stabbing : selective abstention and results at the Community University Hospital Center of Bangui

Issa Mapouka Pierre Alfred¹, Dibert-Bekoy-Nouganga Emmanuel¹, Nabia Don Rodrigue¹, Mbéryo Martial¹, Doui Doumgba Antoine²

1 Department of Surgery, Community Hospital Center of Bangui, Bangui, Central African Republic

2 Department of General Surgery, University Hospital of the Sino-Central African Friendship, Bangui, Central African Friendship

Abstract

Objective: To report our experience of selective abstentionism in treatment of penetrating wounds of the abdomen by stabbing. **Patients and method:** This is a prospective study carried out in the surgery department of community (CHU) of Bangui for the period from January 1, 2017 to March 31, 2018. It focused on penetrating wounds of the abdomen with a stabbing weapon in stable adult patients who did not pose an indication for an emergency laparotomy. They were monitored clinically and by a twice-daily ultrasound after trimming the parietal wounds under local anesthesia and operated secondarily as soon as signs of complication appeared. **Results:** The study included 32 patients, including 29 men (90,6%) and 3 women (9,4%) with an average age of 29 years. Assault (75%) was the most common causative agent. The anterior region of the abdomen was affected in 93,7% of cases. The clinical signs were an asymptomatic wound (20 cases), an epiplocele (7 cases) and evisceration (5 cases). The course was complicated by peritoneal irritation in 7 patients and required a secondary laparotomy. The surgical procedures consisted of a simple suture of the handles and the liver in 5 cases, an ileal and colonic resection-anastomosis in 2 cases. A white laparotomy has not been recorded. Morbidity was 9,4% and mortality was zero. The average overall hospital stay was 8 days and 6,8 days in non-operated patients. **Conclusion:** Selective abstentionism reduces the frequency of white laparotomies and morbidity. However, it requires substantial diagnostic paraclinical means such as ultrasound and scanner.

Keywords: Abdominal wounds, Stabbing, Selective abstention.

INTRODUCTION

The optimal management of patients with penetrating wounds with a stabbing weapon has yet to be fully elucidated [1]. Emergency laparotomy is the treatment established in approximately 60% of patients who present to the hospital with shock, generalized peritonitis and evisceration. The recommendation for the management of the remaining patients (40%) who especially asymptomatic with minimal abdominal signs or doubtful at the initial clinical examination is however controversial [2,3]. While non-operative treatment was generally offered in developed countries, the problems of clinical and radiological monitoring were the main arguments against this method for some African authors. [4,5]. The aim of this study was to report our experience of "selective abstentionism" of penetrating wounds of the abdomen by stabbing in our conditions of exercise of under equipment. **Patients and methods** This is a prospective descriptive monocentric study carried out in the surgery department of the University Hospital Center of Bangui over the period from January 2017 to March 2019 (15 months). It dealt with penetrating wounds of the abdomen by stabbing. Patients were recruited during surgical emergency consultations, operating room registers and hospital records. The patients included in the study were stable patients who did not have an emergency operative indication. Unstable patients or patients with systematically operated peritoneal irritation syndrome were excluded from the study. Patient monitoring was clinical and ultrasound (FAST = Focus Abdominal Sonority Trauma). The wounds were trimmed in the operating room under local anesthesia. All patients were put on a diet ranging from a few hours to 24 hours and gradually resumed feeding. Antibiotic therapy with Ceftriaxone at a rate of 2g / day was instituted in all cases as well as a dose of tetanus serum and toxoid. The parameters studied were: age, sex, circumstances, causative agent, site of the wound, clinical signs, course, initial and secondary clinical signs during monitoring, the injured organ, the procedure performed, morbidity, mortality and length of hospital stay. The data put on the card was analyzed using the Epi-info 2010 software.

*Corresponding author:
Dr. Issa Mapouka Pierre Alfred
Department of Surgery,
Community Hospital Center of
Bangui, Bangui, Central African
Republic
Email: issamapouka[at]yahoo.fr

PATIENTS AND METHODS

This is a retrospective study of patients treated in the Trauma Department of the Bangui Community Hospital for penetrating wounds of the abdomen with a firearm during the armed conflict in the Central African Republic and during the October 1st 2013 to March 31st 2014 is 6 months. The data was collected from surgical emergency registers, the operating theater and hospital records. Included in the study were all patients treated and followed up after discharge and having a complete record. Patients with penetrating stab wounds and closed trauma and those with incomplete files were excluded. The parameters studied were: age, sex, profession, origin, circumstances of occurrence, means of transport, admission time, clinical and para-clinical assessment, surgical procedures performed, morbidity, mortality and length of hospital stay. Data collected on a survey sheet were processed using Epi-info 2012 and Excel software.

RESULTS

During the study period, 32 patients or 46.6% of the 77 patients who presented with a penetrating stab wound to the abdomen were stabbed. These were 29 men (90.6%) and 3 women (9.4%) with an average age of 29 years (range 15 and 65); the sex ratio was 9.6. Assaults (75%) were the main circumstance followed by brawls (21.9%). One case (3.1%) of road traffic accidents was recorded. The majority of patients were injured by a knife (87.5%). The other causative agents were the broken glass (6.3%), a piece of iron (3.1%) and an arrow (3.1%). The wounds concerned the anterior region of the abdomen in 93.7% of cases. The sites of the wounds are presented in table 1. The clinical signs were an asymptomatic wound (20 cases) (figure 1), an epiplocele (7 cases) (figure 2) and an evisceration (5 cases) (figure 3). The course was complicated by peritoneal irritation in 7 patients (21.9%) upon resumption of feeding. During the intraoperative period, the lesions found were a punctual wound in the sigmoid (3 cases) and the coecum (1 case), a deperitonization associated with punctual perforation of the small bowel in 2 cases and a wound in the parietal side of the right lobe of the liver that was debrotated. They came from asymptomatic wounds in 6 cases and from evisceration in one case and were due to the knife in 6 cases and a piece of iron in one case. The procedures performed were excision-suturing of the sigmoid and coecum wounds in 4 cases, end-to-end resection-anastomosis of the small intestine (2 cases) and sigmoid (1 case) and suturing of the liver followed by drainage for the hollow organs. A white laparotomy was not noted. The secondary course was interspersed with 3 cases of parietal suppuration (9.4%). Mortality was zero. The overall hospital stay was 8 days (range 5 and 25 days). It was 6.8 days with extremes of 5 days and 8 days for the injured who had not presented any complications.

Table 1: Distribution of wound seats

Wound site	Number	Percentage
Epigastric region	2	6,3
Right Hypochondrium	2	6,3
Umbilical region	8	25
Right flank	4	12,5
Left flank	6	18,8
Right ilac fossa	3	9,4
Left iliac fossa	2	6,3
Hypogastric	2	6,3
Lumbar region	3	9,4
Total	32	100



Figure 1: Evisceration by knife wound in a 28-year-old patient



Figure 2: Epiplocele by knife wound in a 31-year-old patient



Figure 3: Asymptomatic knife wound in a 25-year-old patient

DISCUSSION

In the study, 46.6% of patients were selected for "armed surveillance". In some series [6-8], this frequency varied from 19% to 60.6%. The average age of the patients was 29 years with a male prevalence of 90.6%. This average age is superimposable on the series of N'dri-Kouadio et al [9] and Ertekin et al [7] who found 27 years and 28.3 years respectively. The male predominance of 89%,

which we noted, was found in most series [6,9-11]. This is explained by the fact that young subjects, in particular men are more involved in violence than older subjects and women. The circumstances in which the wounds occurred were mainly assaults with 75% of the cases and the knife (87.5%) was the main irritant. Criminal assault had also dominated in other series [12-17] and the knife was the etiology in the series of Ngaroua et al [15], Dayananda and [18] and Dieng [14] with 63%, 74 % and 87% of cases. In our context, the military-political crisis that the country experienced with its corollary the change in behavior of the populations and poverty explains the increase in attacks whose knife, of easier acquisition is often the cause. The anterior abdominal region was affected in 93.7%. In some series, it varied from 55% to 66.6% [17,19,20]. The victims are often in front of their attackers, justifying the frequent involvement of the anterior region. The peri-umbilical region (25%) and the left (18.8%) and right (12.5%) flanks were frequent sites of wounds. These different seats were reported in certain series in variable proportions [12,21, 11]. The clinical signs in our study were the asymptomatic wound (20 cases), the epiplocele (7 cases) and the evisceration of the small intestine (5 cases). Some authors such as Dieng [14], Sanei et al [120] and Kong et al [10] had excluded from their series patients who presented with an epiplocele or evisceration of the small intestine while others such as Masso-Misse [16] and Ndri-Kouadio [9] and Benissa [13] included them like us in their series. During monitoring, a complication was observed in 7 patients (21.9%), consisting in all cases of peritoneal irritation. This complication was recorded in the series of Dieng [14], Monneuse [12] and Bennett [8] in a proportion of 14.5%, 15% and 17.2% of the cases. Intraoperatively, the injured organs were 3 times the sigmoid, 2 times the small intestine and once the liver and the caecum. These organic lesions originated from wounds located in the iliac fossae (4 cases) and a respective case in the right hypochondrium, in the peri-umbilical region and in the hypogastrium, the agent of which was in 6 cases the knife and in 1 case the piece of iron. These lesions were observed in asymptomatic wounds in 6 cases and in one case of small bowel evisceration. In Dieng's series [14], the spleen was affected 4 times and once the colon, while in Ndri-Kouadio's [8] the jejunum was affected 5 times and the spleen once. This could be explained by the fact that during the penetration of the knife which is the main wounding agent, the spleen which is a mobile organ slides during its passage and is less affected unlike fixed or not very mobile organs such as the sigmoid, the caecum and the liver which are directly affected but also the force of penetration and the direction thereof. The procedures performed were excision-suturing and end-to-end resection-anastomosis of the handles. This practice was also adopted in other series [12, 9, 14]. We explain these gestures by the fact that the lesions were not significant and the peritoneal cavity was not soiled. No white laparotomy was recorded while in a previous exploration study systematic in the same service we noted a rate of white laparotomy of 47.8% [Issa Mapouka [21] and respectively 24.6% and 40.9% in the series of Dieng [14] and Ayité [4]. Bègè et al [23] had estimated it between 23% to 57%. This could be explained by the rigor in the selection of patients. The total morbidity was 9.4% consisting of 3 cases of parietal suppuration. It was 12% in the Bénissa series [13] and zero in the Dieng series [14] and one case of parietal suppuration in that of Ndri-Kouadio [9]. Mortality was zero in our series. It corroborates the series of Dieng [14], Ndri-Kouadio [9] and Masso-Misse [16]. This is explained by the rapid surgical exploration as soon as the signs of secondary complication appear in these patients under surveillance. The average overall hospital stay was 8 days and 6.8 days in non-operated patients. It was respectively 3 days, 4.4 ± 4.1 days and 12.8 days in the Ndri-Kouadio [9], Bennett [8] and Masso-Misse series [16]. This average length of hospital stay which seems long in our series is explained by the delay of 24 hours before resumption of feeding in all patients but also the duration of observation from 5 to 7 days in those who did not present of complications. Conclusion Our selective attitude nevertheless resulted in a somewhat high rate of secondary laparotomy but low morbidity and zero mortality and no white laparotomy. Selective abstentionism significantly reduces

unnecessary laparotomies but requires substantial diagnostic paraclinical means such as scanner. This is not the case in our country where the scanner is not available.

CONCLUSION

Abdominal gunshot wounds are an absolute digestive surgical emergency because most of the multi-organ lesions cause life-threatening prognosis. They affect young people who are active in armed conflict and violence. The initial care of these patients, who are often survivors in times of conflict, is non-existent and insufficient in the hospital setting, which causes high morbidity and mortality. The organization of the health services and their equipment would allow the care of the wounded from the places of collection could reduce these complications.

Conflicts of Interest

There was no conflict of interest in the study.

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