

Research Article

Management of Acute Abdominal Emergencies at the Niamey National Hospital

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Abstract

Objectives: The aim of this study was to evaluate the management of surgical acute abdominal emergencies at the National Hospital of Niamey.

Methods: Prospective study was conducted in emergency unit of the Niamey National Hospital, from March to September, 2010. Data collected included: age, sex, mean of transportation used, clinical signs, indication of surgery, delay of admission, pre operative check, American Society of Anesthesiologists (ASA) physical status classification, preoperative prescriptions, delay of the intervention, technique of anesthesia, incidents, accidents and the outcome of the patient.

Results: The sample included 255 patients. The functional signs were: abdominal pain and vomit. The delay of admission was 72 hours. The radiography of the abdomen has been realized in 58%. Seven patients have an abdominal computed tomography (CT). The indications of surgery were: peritoneal syndrome (38.4%), occlusive syndrome (24.5%) and appendicitis (15.9%). The abdominal contusions represented 10.9%, penetrating wounds 1.9%. The gynecological emergencies represented 2.7%. 54.5% of the patients were classified ASA E 1; 35.3% ASA E 2. The delay of the surgery was 8 hours. 220 patients have been operated. General anesthesia was performed in 94%. Anesthetic drugs used were: ketamine in 94% of cases, fentanyl was the only narcotic available. We have 36 cases of incidents or accidents during the anesthesia (16.3%). The average expenses occurred for the families were US\$ 240. Duration of hospitalization average was 12 days and 7.4% of patients were deaths.

Conclusion: The management of acute abdominal emergencies at the Niamey represents public health problem, the solution to this problem passed by the empowerment of the people, reforms in the management of emergencies in the peripheral medical centers and medically transportation of the patients.

INTRODUCTION

Management of abdominal emergencies is a fundamental mission of emergency care unit. Pharmacological discoveries, advances in exploration, medical imagery, clinical research and diversification of medical specialties have a clear qualitative revolution in the management of these patients. Developing countries still have insufficiency in diagnostic and therapeutic, joint by the conditions of hygiene precarious, augmentation of vehicles and the use of weapons increased the activity of emergency unit. The aim of this study is to analyze the management of abdominal emergencies in our hospital during the perioperative period [1-3].

METHODS

This prospective study was performed in the emergency unit of the Niamey National Hospital. Data was gathered from March through September, 2010. The following variables were analyzed: age, sex, mean of transportation used, clinical signs, diagnosis, delay of admission, preoperative checks, American Society of Anesthesiologists (ASA) physical status classification, preoperative prescriptions, delay of the intervention, technique of anesthesia used, incidents and accidents, post operative prescriptions and outcome of the patient. Data were analyzed with Epi Info 6™ (Centers for Disease Control and Prevention, Atlanta, GA).

RESULTS

The study included 255 patients, 220 of them were been operate (86.2%). Their average age was 27 years, ranging from 3 months to 72 years. 35.7% of patients had between 16 to 30 years. Males represented 73.1%, with a male-to-female ratio of 3:1. Eighty percent of patients came from health centre or districts hospitals, 20% consults directly in the hospital. Sixty percent of our patients were illiterates. Transportation means was taxis in 40.4%, ambulance in 36.4%. The functional signs were: abdominal pains in 98.4% vomit 77.2%, fever in 58.4%, bowel obstruction symptoms in 43.5%. Patients have hemodynamic shock in 34.1%, diarrhea in 16.5% of cases (Figure 1). The average delay of admission was 72 hours (ranged: 1 hour to 90 days). 32.2% of them were admitted in the 24 hours of the starting symptom. We explore the blood count and hemoglobin concentration in 99.2% of the patients, 4.7% of patients have severe anemia. The kidney function has been explored in 11.8%. The radiography of the abdomen without preparation has been realized in 58% and was contributory in 80% of cases, abdominal ultrasound in 16.9% of the cases. Seven patients have an abdominal CT. The diagnosis was: peritonitis (38.4%), occlusion (21.1%) and appendicitis (13.7%). The abdominal trauma represented 12.1% (31 patients: 24 contusions, five penetrating wounds of the abdomen and two no penetrating). The strangulated hernia incidence was 11.7%. Seven gynecological emergencies represented 3.1% (4 extra uterine pregnancy rupture and tree torsions of cyst) (Table 1). 220 patients have been operated. All received preoperative evaluation. For the anesthesia risk, 54.5% of the patients were classified as ASA E class 1; 35.3% ASA E class 2 while 8.2% and 2% of patients were classified as ASA E classes 3 and 4, respectively. In preoperative all received prescription of rehydration and 25 patients have been transfused blood. The delay between admission and surgery was 8 hours and 64.3% have been operated in the 12 hours after admission. General anesthesia was performed in 94%; spinal anesthesia was used in 6% of cases. For general anesthesia 94% of patients received crush induction. The anesthetic drugs used were: ketamine in 84% of cases (one case of used propofol). Fentanyl was the only available narcotic. We have 36 cases of incidents or accidents

Table 1: Distribution of patients by the etiology.

Etiology	Number of patients	Percentage
Peritonitis	98	38.4
occlusions	54	21.1
Appendicitis	35	13.7
Abdominal Trauma	31	12.1
Strangulated hernia	30	11.7
Gynecological	7	2.7
Total	255	100%

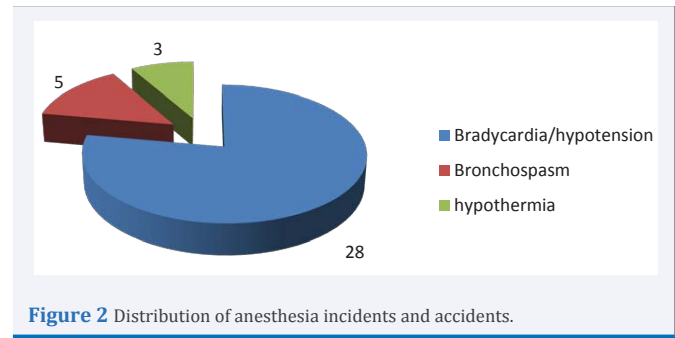


Figure 2 Distribution of anesthesia incidents and accidents.

during the anesthesia (16.3%) including 11 deaths (Figure 2). Among the operated patients 95.4% were been admitted in Postanesthesia Care Unit (PACU) and 4.5% in the Intensive Care Unit (ICU). All patients received postoperative prescriptions of antibiotics and multimodal analgesia. The average expenses incurred for the families were US\$ 240. Nineteen patients were deaths (7.4%): one in preoperative period, 11 in the operating room and 7 in postoperative period. The average duration of hospitalization was 12 days.

DISCUSSION

The acute surgical abdominals emergencies are frequent, in our series it represent 42.2 % of admission in emergency unit. In republics of Benin and Mali they have 56.4% and 53.8% respectively. In the last ten years there is an increasing of theses emergencies in the Niamey National Hospital [1,4,5]. This increase can be explained by the demographic growth of the population in Niger. The sample average age is youth (27.3 years) this is related by the structure of our population (median age of 15 years) [6]. For the sex, West African data reported sex male predominance [1,4,5]. The admission delay of 72 hours in this study, which represent the interval between the first symptom and the consultation at the emergency unit, is related for the low level of literacy of the population, self-medication and use of alternative medicine (traditional) [7,8]. Pain is most frequent sign of consultation for the patients; the delay of consultation, the lack of medical transportation make in Africa many patients with acute surgical abdomen arrived shocked in hospital [4,7,9]. The dominant etiologies (peritonitis, occlusion, appendicitis and abdominal trauma), in the African studies peritonitis is the most frequent; in European appendicitis is the first [5,10-13]. This predominance of peritonitis in our context is explained by the prevalence of infectious diseases especially typhoid fever abdominal localization and precarious hygiene conditions [7]. The cell blood count is recommended in emergency assessment, this exam showed 4.7% of cases of anemia within 7g/dl. Others biological investigations were been performed depending

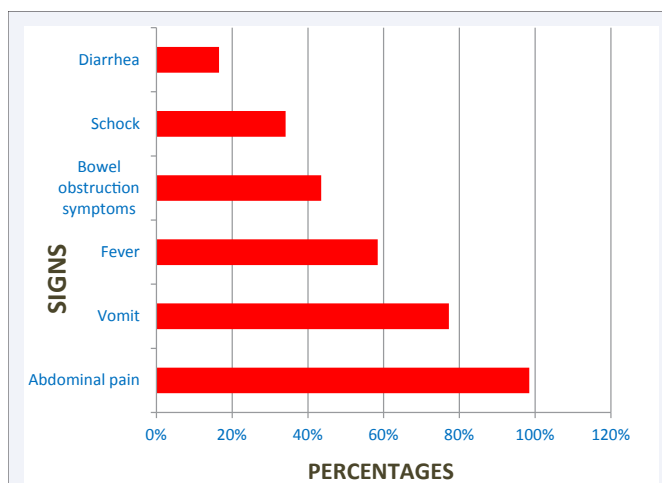


Figure 1 Distribution of the signs.

patient clinical status. Radiography of the abdomen is the most radiological exam performed in our study and African countries, unlike the literature of developed countries where the CT scan is the reference in abdominal emergencies. In low-resource setting, the delay of consultations, the cost of this exam, emergency availability limits his prescription [14-16]. The anesthesia risk is the same found by other authors [1,4,17]. All our patients received infusion, and some antibiotics before surgery as in Benin study [1,4]. The guidelines recommend preoperative resuscitation in the emergency room to correct or stabilize any disorders before surgery [1,18]. The waiting time between emergency admission and transfer to the operating room from 8 hours was found in several African series, this delay is relatively short (few minutes) in developed countries. This long waiting time is justified by the fact that the patient's relatives must pay the paraclinics investigations and prescriptions before starting the surgery, because the system of universal health coverage is non-existent in Niger Republic [5,10,18]. Anesthesia management of abdominal emergencies is done under general anesthesia with intubation except some cases of hernia or appendicitis feasible under loco regional anesthesia [19,20]. The association kétamine-suxamethonium was used in 90.4% for anesthesia induction, the lack of deleterious hemodynamic effects of ketamine recommend this drug for anesthesia of fragile patient. The use of antibiotics prophylactic or curative as cases [21,22]. In our study, 99.5% of anesthesia was performed by nurse's anesthetists under the supervision of the physician anesthetist; this result is similar in Cameroon and Mali, it shows the lack of physicians in Africa south of the Sahara. The creation of local training anesthetists will solve this deficiency [23,24]. We noted a predominance of cardiovascular and respiratory incidents or accidents as reported by other authors, hemorrhage was reported in the European [25-27]. In post operative period the patients have benefited infusion and six received blood for anemia. Multimodal analgesia was been conducted for the post operative pain with paracetamol, tramadol and NSAID drugs [28,29]. The mortality of abdominal emergencies is decrease of 50% in ten years at Niamey National Hospital, linked to training of surgeons and restructuring the emergency unit [5]. For the 11 deaths in operating room, ten have developed cardiovascular troubles (bradycardia and/or hypotension), one had bronchospasm. These deaths concerned peritonitis and occlusion groups. The duration of hospitalization is similar to the others West African hospitals [4, 10]. Expenses incurred for the families including the costs of paraclinics investigations and prescriptions (without anesthetic drugs) of U.S. \$ 240 remain high in low resource country [4,30].

CONCLUSION

This study demonstrated the difficulties in management of acute surgical abdominal emergencies in Niger. With a young patient, late consulted at the hospital, delay of management for lack of health insurance, despite the government recent efforts carrying free of charge children under five years, cesareans and gynecological cancers.

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