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RESEARCH ARTICLE

PERITONITIS IN THE PEDIATRIC SURGERY DEPARTMENT OF BANGUI: EPIDEMIOLOGICAL AND CLINICAL ASPECTS

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ABSTRACT

Peritonitis is a common pediatric surgical condition. The aim of our study is to analyze the epidemiological and clinical aspects within the pediatric surgery department of Bangui. We conducted a retrospective study of patient records received for pediatric surgery and peritonitis emergencies from January 2006 to December 2013. Data analysis was done using Epi Info 3.5.1 software, 2008 version. A total of 206 files were selected. These are: 127 boys and 79 girls (sex ratio = 1.6), with an average age of 9.5 years with extremes of 7 days and 15 years. Abdominal pain was the main reason for consultation. The clinical examination alone, in most cases, made the diagnosis possible. The surgical treatment was a function of the etiology: the excision-suture associated with washing drainage, was the most practiced surgical procedure. All our patients benefited from general anesthesia. Mean hospital stay was 9.4 days with extremes of 5 and 39 days. We noted a morbidity rate of 22.8% dominated by parietal suppurations and a mortality of 5.8%. The results obtained are comparable to those of the literature. The delay in consultation and referral constitutes the high morbidity and mortality factors. Strengthening the capacity to take charge of the service, particularly in resuscitation and care financing, would improve the prognosis of this condition.

INTRODUCTION

Peritonitis is a common pediatric surgical condition and a therapeutic emergency. In Africa, it ranks third in digestive surgery emergencies after acute occlusions and appendicitis. It poses a diagnostic and therapeutic problem, leading to high mortality and morbidity in developing countries [Babela et al., 2006]. In Asia, its frequency is 41.4% in 2005 and 2006 with a mortality of 33% and a morbidity of 19.7% [Sai Prasad et al., 2006; Rai, 2007]. In Africa, according to a series of studies conducted in 2005 and 2006, it varies from 28.1% in Congo and 49% in Niger [Babela et al., 2001; Keita, 2006]. In the Central African Republic in 2012, in a study carried out on generalized acute peritonitis in the general and pediatric surgery department of Bangui, children accounted for 45.3% of the sample [Pénguélé, 2012]. However, no study has been specifically focused on the peritonitis of the child hence the interest of the object of this work.

PATIENTS AND METHOD

This is a retrospective study, conducted in the pediatric surgery department of Bangui. It was conducted over an 8-year period from January 2006 to December 2013. The study included patients of both sexes, aged 0 to 15 years admitted and operated on for acute generalized peritonitis.

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Data were collected from hospital records, operating records and patient medical records. A survey form was pre-established and filled in with the following variables: the patient's marital status and address, clinical and para-clinical parameters, treatment and evolution.

Included were all children admitted to pediatric surgery for acute peritonitis whose diagnosis was confirmed intraoperatively. Not included: patients older than 15 years, subjects with incomplete records. The collected data was captured and analyzed using the Epi Info 3.5.1.version 2008 software.

RESULTS

Epidemiological data

We collected 206 cases of peritonitis meeting the inclusion criteria on 10329 cases of hospitalization, 562 digestive emergencies. Thus, peritonitis represented:

- 1.9% of hospitalization;
- 36.6% of digestive emergencies.

The age of the patients ranged from 7 days to 15 years with an average of 9.5 years. The most affected age groups (Figure 1) were 8-15 years old (136 patients) and 3-7 years old (64 patients). 61.6% were male and 38.4% female with a sex ratio of 1.6.

Tableau 1. Distribution of patients according to the onset of symptoms

Débutsymptômes	Effectif	Pourcentage
1 – 7days	13	6,3
8 – days	40	19,4
15 – 21days	104	50,5
> 21days	49	23,8
Total	206	100

Tableau 2. Patients and physical signs

Physical signs	Effectif	Pourcentage
Pain on palpation	206	100
Scream of the umbilicus	146	70,9
Generalized defense	133	64,6
Painful Douglas	103	50
Abdominal meteorism	93	45,1
Skin fold of dehydration Abnormal	67	32,5
dullness	29	14,1

Tableau 3. Distribution of patients according to the results of the abdominal ultrasound

Résults	Effectif	Pourcentage
Liquid effusion	14	32,6
Peritonitis	11	25,6
Occlusive syndrome	9	20,9
Appendicealabscess	7	16,3
Intestinal intussusception	2	4,6
Not made	163	79,2

Tableau 4. Distribution of patients according to the intraoperative diagnosis

Diagnostic per opératoire	Effectif	Pourcentage
Ileal perforation	108	52,4
Appendicular perforation	72	35
Peritonitis of unknown origin	11	5,4
Traumatic colonic perforation	6	2,9
Gastric perforation	5	2,4
Jejunal perforation	4	1,9
Total	206	100

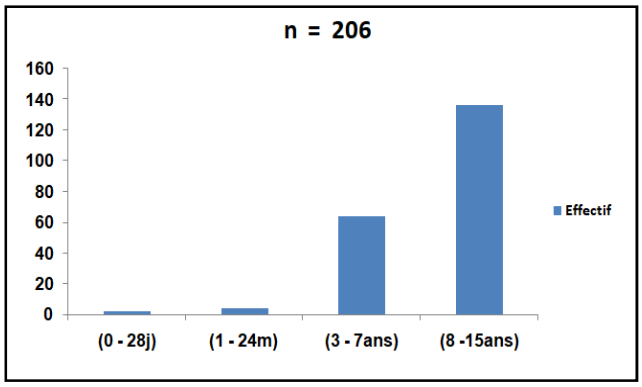

Figure 1. Distribution of patients by age group

Clinical aspects: Abdominal pain (100%) was sometimes associated with fever (85.4%) and / or vomiting (11.3%). Half of our patients had been consulted after 14 days of the onset of symptoms. The average duration was 17.6 days with extremes of 3 and 36 days (Table I).

The classical physical signs of peritonitis were present in more than 90% of our patients (Table II).

Additional tests: Among the 96 patients who performed PSA, crescent was the most recovered sign (51%) and of the 43 who underwent ultrasound, the fluid effusion was highest (Table III). 91 patients were able to undergo cyto-bacteriological examination of the pus specimen where Escherichia coli (18.9%) was the predominant germ. The ileal and appendicular perforations successively occupied the first and second places (Table IV).

Treatment: 69.9% of our patients had received medical treatment before their arrival at the hospital and all had a medial laparotomy with washing-drainage. On the evolutionary level, we deplored 5.8% of deaths by septic shock most often and 22.8% of morbidity constituted by wall abscesses, digestive fistulas, occlusions and eviscerations. 71.4% had simple immediate follow-up.

DISCUSSION

Peritonitis occupies a prominent place in acute surgical abdomens in the pediatric surgery department of Bangui. They represent one third of our digestive emergencies. Our results are comparable to those of Touré in Mali in 2009 [Touré, 2009] and MabilaBabela in Congo in 2000 [Babela, 2006]. The average age of our work does not differ statistically significantly from that found in the Singaporean series [Pandey, 2008]. It represents the age of the big child. Male dominance has been observed in all studies as well as ours [Babela, 2006; Chang, 2006, Penguélé, 2012]. However, sex alone is not a factor influencing the prognosis or occurrence of peritonitis.

The time between average consultation time and management is very high in our study compared to studies done elsewhere [Rai, 2007; Ramachandran, 2007]. This consultation delay is linked:

- Self-medication;
- Traditional treatment;
- lack of financial means;
- Absence of health insurance;
- The inadequacy of our health system.

Continuous abdominal pain was the most common symptom in our series, as Mishara reported [Mishra, 2007]. The speed of installation of the signs is correlated with the severity of the contamination. Fever, usually high early on, has been the most frequently reported symptom in our patients. The diagnosis of peritonitis is primarily clinical. Abdominal contracture is the major physical sign. It can be localized or generalized at the advanced stage, which has the same semiological meaning. Para-clinical examinations are useful for the etiological diagnosis or complications of peritonitis. Pneumoperitoneum was most represented, as noted by Chang [Chang, 2006]. Escherichia Coli was the seed most frequently as Keita noted [Keita, 2006]. Resuscitation is the first essential time of treatment to correct the hydro-electrolytic and haematological disorders. Antibiotic therapy aims to prevent the spread of the infectious process by fighting bacteremia. The products used must be active on aerobic and anaerobic germs, most often encountered and have good intraperitoneal penetration. In our series, this antibiotic therapy has been systematic.

We used the combination: Ceftriaxone - Gentamicin also adopted by other authors [Sai Prasad, 2006; Touré, 2009]. Antibiotic therapy, parenterally, should take place during the first days to obtain a good peritoneal concentration, then the oral relay is done after the resumption of transit. Several authors [Sai Prasad, 2006] agree on the need for a wide median laparotomy with careful research of the causal focus, and also for a possible widening of the incision. Excision-suture was the most common surgical procedure in our series since digestive perforations were the most common etiology. This rate is not statistically different from that noted in India [Pandey, 2008]. The mortality of peritonitis depends on the etiology. In African series as in ours, mortality varies from 3.8% to 20.98% [Babela, 2006; Keita, 2006]. The delay in management heavily influences mortality. This has been reported by all African studies [Babela, 2006; Narci, 2007], whose conclusions are very often related to the following factors:

Lack of financial means

Practices of traditional medicine: The low level of diagnostic and therapeutic means. Our morbidity rate is not different from that reported in India [Pandey, 2008]. This morbidity is dominated by parietal suppurations contributing to long hospital stay and expenditure.

Conclusion

Peritonitis is a common pediatric pathology whose management is a medical and surgical emergency. Mortality remains high in developing countries owing to a lack of information and above all to the relatively low cost of living in these countries. Early consultation, the introduction of health insurance could improve the prognosis of patients.

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