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Ileal Peritonites : Epidemiological, Clinical and Therapeutic Aspects in the Vision Surgery Department of the Donka National Hopital

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Abstract :- Aim : To contribute to the study of peritonitis by ileal perforation in the department. Material and Methods : This was a retrospective, descriptive study over five years from 1 January 2016 to 31 December 2020. Results : We collected 30 cases of ileal perforation peritonitis (6.7%). The mean age of our patients was 26.06 years and the extremes were 8 and 78 years. The sex ratio was 3.28. Students were the most represented socio-professional group (43.33%) and 80% of patients came from the city of Conakry. Abdominal pain, parietal defence and painful rectal touch were present in all our patients (100%). Declive dullness and disappearance of prehepatic dullness represented respectively 80 and 66.66%. General condition was poor in 56.66% and impaired in 20%. Typhoid perforation was the most frequent etiology in 40% of cases and perforation was unique in 26.67% of cases. Suture excision was the most common procedure. The postoperative course was favourable in 40% of cases, with complications in 53.33% and death in 43.33%. The average hospital stay was 14.6 days with extremes of 1 and 49 days. Conclusion : Peritonitis due to ileal perforation is relatively frequent in the department and very serious. The diagnosis is essentially clinical and typhoid fever is the main etiology. Early diagnosis, availability of the emergency kit and equipment of the resuscitation department could improve the prognosis.

Keywords:- *Peritonitis, Ileal Perforation, Epidemiology, Clinical, Treatment.*

I. INTRODUCTION

Ileal perforation peritonitis is the acute inflammation of the peritoneal serosa by pathological or traumatic opening of the ileum [1]. The positive diagnosis is essentially clinical and biological and is based on clinical and biological symptoms and signs that vary according to the aetiology, the course and the terrain [2]. The unprepared abdomen can be used to visualise pneumoperitoneum and diffuse greyness [2; 3]. The CT scan provides more details by showing the organ involved, the lesion and its extent, and the resulting effusion [3]. The main causes of ileal perforation peritonitis are ischaemia, infection, chronic inflammatory bowel disease, trauma, lymphoma, surgery and laparoscopy [5]. Despite advances in intensive care, antibiotic therapy, resuscitation, surgical techniques, the management of peritonitis remains very complex and challenging for the surgeon [4]. Peritonitis by ileal perforation remains one of the main causes of peritonitis by digestive perforation with a significant morbi-mortality [6]. In DRC in 2019, KATUNGO et al [7] reported 33.3% of ileal perforation peritonitis compared to other causes of peritonitis in BUTEMBO in the east of the country. In Mali in 2017 Keita et al [8] reported 38.6% ileal perforation peritonitis compared to other causes of peritonitis at Kati University Hospital. In Guinea we found no available data on ileal perforation peritonitis. The treatment of ileal perforation peritonitis aims to eliminate bacterial contamination by evacuating the septic fluid, fibrin deposits, cure of the causal lesion and drainage [9]. The prognosis of ileal perforation peritonitis depends on the course, the terrain, the age, the time to management and the experience of the surgical team [10]. The absence of previous studies and the difficulties of management motivated the choice of the topic

- *Purpose :*

To contribute to the study of ileal perforation peritonitis in the department.

- *Specific Objectives:*

To determine the frequency of ileal perforation peritonitis To identify the main etiologies and prognostic factors To report on the therapeutic modalities and the operative follow-up.

II. METHODOLOGY

This was a retrospective, descriptive study over five years from January 1, 2016 to December 31, 2020 of the records of patients admitted and operated on in the department for ileal perforation peritonitis during the study period. All patients admitted and operated on in the department for ileal perforation peritonitis confirmed intraoperatively and meeting our study variables were included in the study. Incomplete records were excluded. These variables were epidemiological, clinical, therapeutic, prognostic and evolutionary.

III. RESULTS

Table 1 : Frequency of ileal perforation peritonitis compared to other causes of peritonitis

Other causes of peritonitis	**419**	**93,3%**
Ileal perforation peritonitis	30	6,7%
Total	449	100%

➢ *Distribution of cases by age group*

The 11-20 age group was the most affected with 46.67%, followed by the 31-40 age group with 20%. Males were the most represented in this series, 76.66% against 3.28% with a sex ratio of 3.28. Eighty percent of the cases were from the special zone of Conakry against 20% from the interior of the country.

Table 2: Frequency of clinical signs

clinical signs	Numbers	Percentages
Abdominal pain	30	100 %
Nausea/vomiting	25	83,33%
Abdominal distension	16	53,33%
Haemorrhagic wounds	12	40%
Bulging and painful Douglas	30	100%
Slightly sloping flanks	24	80%
Contract/defence	16	53,33%

In general, 56.66% of the cases had a poor general condition and 20% had an altered general condition. The most accessible radiological examination was the unprepared abdomen, which showed pneumoperitoneum and diffuse greyness in 26.66%. Intraoperatively, the number of perforations varied according to the etiology: Typhoid origin represented 40% of cases; traumatic origin 60% with respectively 23.34% by firearm; 13.34% by knife; 13.34% following abdominal contusion; 6.66% by road accident; 3.33% by fall. 26.67% of the cases had a single perforation ; 36.66% had three perforations ; 13.34% had four perforations. These perforations were associated with pre-perforated areas in 23.34% of cases. 26.66% of the perforations were located within 10 cm of the ileo-caecal angle ; 63.33% were located between 11 and 20cm ; 53.33% were 50cm from the ileo- caecal angle and 26.66% were more than 50cm from the ileo-caecal angle.

Table 3 : Distribution of cases according to the surgical techniques performed

Actions taken	Number of cases	Percentage
Excision/suture Simple	12	40%
Excision/suture with reinforcement of the Pre-Perforative Zones	7	23,34%
Resection anastomosis	4	13,33%
Resection with ileal reimplantation	3	10%
Iliostomy	4	13,33%

Peritoneal lavage was performed in all patients with 0.9% saline 4.5 to 6 litres.

Table 4 : Distribution of cases according to the surgical follow-up

Suites opératoires	Nombre de cas	Pourcentage
Favourable	12	40
Unfavourable/surgical site infection	9	30
Post-operative peritonitis	7	23,33
Deaths	13	44,33

Four patients died on the operating table ; two patients died in their anesthetic sleep.The other seven died in septic shock.

Table 5 : Répartition des cas selon la durée du séjour hospitalier

Hospital stay in day	Number of cases	Percentages
≤7	6	20
8-14	16	53,34
15-21	4	13,33
≥22	4	13,33
Total	30	100

IV. DISCUSSION

During the study period, out of 449 patients records admitted and hospitalised in the department, we collected 30 cases of peritonitis by ileal perforation, i.e. 6.7%. This result is lower than that of KATUNGO and COLL [7] in 2019 in Congo who reported 33.3% in BUTEMBO in the east of the country. The relocation of the hospital to the Camayenne camp for reasons of renovation, extension and equipment could explain this low result because of the files lost during the move. The insalubrity, promiscuity and multiplicity of rolling machines have contributed to an increase in abdominal trauma and ileal lesions of infectious origin in recent years.

➢ *Age*

We noted a predominance of the age group 11-20 years with 46.67% ; an average age of 26.06 years, extremes of 8 and 78 years. Our result is superposable to that of KEITA and COLL [8] in 2017 in Mali who reported a mean age of 25.8 years and extremes of 8 and 65 years. The young age is the age of full activity and high risk. Typhoid perforations occur in a context of poor hygiene and difficult economic conditions. Similarly, it is at this age that physical activity is more intense : sports, driving machines, demonstrative aggression, conflicts that expose to abdominal trauma. We noted a male predominance of 76.66% and a sex ratio of 3.28. Our result is lower than that of SAMBO and COLL [11] in Benin in 2016 who also reported a male predominance and sex ratio of 2.5. The male gender is more predisposed given the responsibility that he embodies in society or that he has to carry.

➢ *Socio-Professional Layer:*

Students were the most represented in our series with 43.33% followed by workers with 33.33%. The juvenile layer with unsanitary conditions in the school environment and even at home, promiscuity in the rooms, physical education activities, precarious living and sporting conditions would explain this state of affairs. The majority of our patients came from the city of Conakry, which can be explained by the population density of this city (80%). Insalubrity, social ills and many other factors explain this state of affairs.

➢ *Clinical Signs:*

Abdominal pain, cessation of matter and gas, parietal defence/contracture, sluggishness of the flanks, painful rectal touch, abdominal sores, were the main clinical manifestations. In our context, the clinic is the doctor's main weapon given the limitation of complementary explorations and the low purchasing power of the patients. The clinical diagnosis arrived at by clinical examination was often confirmed intraoperatively. The same signs were reported by several authors. The poor or altered general condition had an impact on the patient's prognosis. Of the 13 deaths, 6 were in poor general condition, 3 in poor general condition. The unprepared abdomen and abdominal ultrasound were poorly performed (26.66% and 3.33% respectively), showing pneumoperitoneum, diffuse grayishness and intraperitoneal effusion. All the patients were conditioned by hydroelectrolytic and nutritional resuscitation before the operation, depending on the clinical condition, the biological check-up and the terrain. All cases received general anaesthesia and orotracheal intubation. The approach was median above and below the umbilical in all patients. Pus was aspirated in 30% of cases, cloudy fluid in 25%, blood in 10%. The exploration led to the following lesion assessment: Perforations were single in 26.67% of cases; double in 23.33%; multiple in 50% of cases. Typhoid fever was the main aetiology of ileal perforation in 40%, followed by firearm and stab wounds with 23.34% and 13.33% respectively. Sissoko et al[3] in Mali reported 68% typhoid perforation; 16% intestinal ischaemia and 16% abdominal contusion. Typhoid ileal perforations were associated with pre-performative areas in 23.34% of cases. Wounds of traumatic origin were contused with occasional areas of bony free edge. The distance between the perforations and the ileo-caecal angle was between 11 and 20cm in 63.33% with a mean distance of 31.12cm and extremes of 2cm and 150cm.

➢ *Procedures Performed:*

Simple suture excision was the most performed procedure 40%, followed by anastomosis resection 23.34% and ileostomy in 13.33%. This result is lower than that of Edino et al [12] in 2004 in Nigeria who reported 80.15% suture excision ; 13.49% resection anastomosis; 6.34% ileostomy. The amount of fluid used for peritoneal lavage varied from 4.5 to 7 litres of 0.9% saline. The macroscopic assessment of the lesions was decisive in the technique adopted. Extensive, staged ileal perforations and wounds, and mesentery lesions were amenable to resection. Keita et al [8] in 2017 in Mali reported that all patients received a peritoneal lavage with 0.9% saline 3 to 5 litres after removal of the cause. The peritoneal cavity was drained by tubed drains in the declivities.

➢ *Postoperative Follow-Up :*

The postoperative course was favourable in 40% of the cases and was marked by complications in 53.33%. There were 30% of surgical site infections ; 23.33% of cases of postoperative peritonitis; 44.33% of deaths. Our result is similar to that of Sissoko et al [3] in Mali who reported simple after-effects in 44% of cases and complications in 40% of cases. Overall mortality was estimated at 16%. Four patients died on the operating table, two of them during the anaesthetic induction ; two by hypovolaemic shock. Two others died immediately after surgery in their anaesthetic sleep. The seven others died in septic shock. The first death concerned a 60 year old woman, housewife, diabetic, badly followed, admitted for peritonitis by ileal perforation of typhic origin with a state of shock. After being conditioned, she was admitted to the operating theatre. When the cavity was opened, 1000cc of turbid liquid flowed out and exploration revealed staggered perforations of the ileum with pre-perforated areas. An ileal resection was performed with the lesions removed, followed by an ostomy. On the second postoperative day she fell back into a state of septic shock with a fever of 38 and shivering. Her blood sugar level had been normalized by the diabetologists. The second death concerned a 48 year old man, a worker, admitted to the department for abdominal contusion with peritonitis evolving for 6 days. When the cavity was opened, 2500cc of purulent liquid flowed out and the lesion assessment showed two contused wounds of the ileum located respectively at 30 and 65 cm from the ileo-caecal angle, with diameters of 4 and 5 cm respectively, letting out an intestinal liquid. An ileal resection including the lesions with terminal ileo-ileal anastomosis was performed. He developed functional renal failure on the third day of hospitalisation with an elevated creatinine level of 138 mmol/l and died in poly visceral failure on the fourth day. The other deaths occurred in the context of septic shock.

➢ *Length of Hospital Stay :*

The average hospital stay was 14.6 days with extremes of 1 and 49 days. Dieng et al [13] in Senegal reported an average hospital stay of 14.2 days with a standard deviation of 14.4 days and extremes of 5 and 108 days. The prolonged hospital stay indicates the complexity of the management of peritonitis both by the evolution of the disease which alters the general state and by the comorbidity which exposes more to poly visceral failure and multidisciplinary coordination.

V. CONCLUSION

Ileal perforation peritonitis is relatively common and severe. Young males were the most affected due to factors inherent to their socio-demographic and cultural situation and sometimes to the context. The diagnosis was based on clinical, biological and radiological evidence. Ileal perforation of typhoid origin remains the most dreaded etiology with the infectious state already present before the perforation occurs. The surgical procedure, although adapted to the context and the intraoperative lesions, must be

supported by appropriate resuscitation. The postoperative course, influenced by prognostic factors, has been marked by a high morbidity and mortality.

REFERENCES

[1]. Fattorusso V/O. Ritter: Clinical Vademecum. Du diagnostic au traitement.18 th Edition Masson 2006; p 456-57.
[2]. Andréa C, Vitro C, Marco C, Antonio Z, Alessandro C. Management of secondary peritonitis hope. Ann Ital. Chir 2008; 79 (4): 255-60.
[3]. Sissoko F, Ongoiba N ; Bérété S , Diarra S, Cou libaly Y, Doumbia D et al. Peritonitis by ileal perforation in surgery B of Point G hospital. Mali Médical 2003 ; 18 (1;2) 22-4.
[4]. Doklestic SK, Bajic DD, Djukuc RV, Bumbasirevic V, Detanac AD, Detanac SD et al. Secondary Peritonitis-evaluation of 204 cases and literature review. Journal of Medicine end life April-June 2014 ;7(2) :132-8.
[5]. Marquet J, Boulanger y-G, Milicevic M. Intestinal perforation on foreign body. Rev Med Liège 2017; 2 (4): 165-7.
[6]. Ngo Nonga B, Mouafo Tambo F.F, Ngowe Ngowe M, Takongmo S , Sosso MA :Etiologies of acute generalized peritonitis in Yaounde University Hospital. Rev Afr. Chir. Spéc. 2010.(004) 007 Jan-Apr :30-32. African Journal of Clinical Cases and Reviews 2020 ; 4(3) :366-372.
[7]. Katungu SN, Muhindo VM, Kambale KJ and Ahuka OLA. Management of acute generalized peritonitis in Butembo, eastern DRC. Revue Médicale des Grands Lacs 11(2), June 2020.
[8]. Keit a K, Diarra AG, Coulibaly O, Diallo M, Traoré I S , Keita F et al. Acute peritonitis at the CHU BSS of Kat i: etiological and therapeutic aspects.
[9]. Kouassi JC, Diane B, Lebeau R, Yenon K, Kouakou B : Surgical treatment of small bowel perforations of typhoid origin at Bouaké University Hospital. Revu, Int, Sc Med. 8(1), 2006 : 10-13.
[10]. Harouna Y D, Abdou I, Saidou B, Bazira L : Peritonitis in tropical environment. Particularities and current prognostic factors about 160 cases. Médecine d'Afrique noire 2001-48(3).
[11]. Sambo BT, Allode SA, Welkpon DS, Seto DM, Dossor B. Management of acute peritonitis in a district hospital in sub-Saharan Africa: a mild case. European Scientiific journal December 2017, 13 (36) :1857-7431.
[12]. Edino ST, Mohamed AZ, Uba AF, Sheshe AA, numah M, Ochicha O, Yakubu AA, Alhassan SU, Mamman M. Typhoid enteric perforation in north western Nigeria. Niger J Med ; 2004 Oct-Dec: 13(4) 345-9.
[13]. Dieng M, Ndiaye AI, KA O, Konaté I, Dia A, Toure CT : Etiological and therapeutic aspects of acute generalized peritonitis of digestive origin. A series of 207 cases operated in five years. Mali Méd. 2006 ; 21(4): 47-51.