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Non-Traumatic Digestive Perforations at the Koutiala Reference Health Center: Therapeutic Aspects

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Abstract **Original Research Article**

***Aim*:** To describe the therapeutic aspects of non-traumatic digestive perforations at the Koutiala referral health center. ***Patients and Methods*:** This was a prospective, descriptive study from August 1, 2017 to July 31, 2018, i.e. 12 months. Patients admitted and operated on for non-traumatic digestive perforation were included. 30 patients were registered. The parameters studied were age, sex, etiologies, treatment and postoperative follow-up. ***Results*:** The majority were men (76.7%, n=23), with a mean age of 36.3 years±21.4. Etiologies were dominated by infectious perforation in 70% of cases. The site of perforation was ileal in 20 patients (66.7% of cases). All patients underwent laparotomy. Simple suture of the perforation was performed in 73.3% of cases, anastomotic resection in 16.7%, ileostomy in one case (3.3%), colostomy in one case (3.3%), and cholecystectomy in one case (3.3%). Average hospital stay was 5.8 days±2.2. Morbidity was 20% and mortality 10%.

Keywords: Perforations, digestive tract, treatment, Koutiala.

INTRODUCTION

Non-traumatic digestive perforations are defined as a breach in the digestive tract without any notion of trauma. They can occur at all levels of the digestive tract, resulting in the irruption of gas and digestive contents into the peritoneal or retroperitoneal cavity, causing peritonitis [1]. In sub-Saharan Africa, non-traumatic digestive perforations are most often of infectious origin (typhoid fever). In the absence of urgent treatment, they rapidly lead to death [2]. The aim of this study was to describe the therapeutic aspects of non-traumatic digestive perforations at the Koutiala referral health center.

METHODOLOGY

This was a prospective and descriptive study from August 1, 2017 to July 31, 2018, i.e. 12 months. It included all patients admitted and operated on for non-traumatic digestive perforation in the general surgery department of the Koutiala reference health center. The cercle of Koutiala is a territorial collectivity of Mali in the Sikasso region and is located 390 km from Bamako and 140 km from Sikasso. The parameters studied were age, sex, etiologies, treatment and postoperative follow-up.

RESULT

We collated the records of 30 patients operated on for non-traumatic digestive perforation. They accounted for 7.6% of surgical procedures (n=391), 17.8% (n=168) of surgical emergencies and 68.1% of causes of acute peritonitis (n=44). Mean age was 36.3±21.4 years, with extremes of 6 and 75 years. The majority of cases were male, 76.7% (n=23), with a sex ratio of 3.2. Etiologies were dominated by infectious perforation in 21 patients, or 70% of cases, followed by ulcer perforation in 16.7% of cases (n=5), tumor perforation (10%, n=3), including 1 gastric and 2coecal, and ileal diverticular perforation (3.3%, n=1) (Table I). The site of perforation was ileal in 20 patients, i.e. 66.7% of cases, duodenal in 4 patients, i.e. 13.3% of cases, and caecal in 3 patients, i.e. 10% of cases. There were 2 cases of gastric perforation, including 1 tumor (6.7% of cases), and 1 case of vesicular perforation (3.3% of cases). There were no esophageal or rectal perforations (Table II). Perforation was single in 25 patients (83.3% of cases) and double in 4 patients (13.3% of cases). There were

more than 2 ileal perforations in one patient (3.3% of cases). The size of the perforation was less than 1 cm in 14 patients (46.7% of cases) and between 1 and 2 cm in 12 patients (40% of cases).

In 4 patients, the perforation was greater than 2 cm, i.e. 13.3% of cases. The Widal serodiagnostic test performed postoperatively in the 20 cases of ileal perforation was positive in 65% of cases (n=13). All patients underwent preoperative resuscitation, the average duration of which was two hours. The antibiotics used intraoperatively were a combination of third-generation cephalosporins (ceftriaxone) and imidazoles (metronidazole). All patients underwent laparotomy surgery.

For ileal perforations, 16 cases were treated by simple suture (53.3%), 3 cases by anastomotic resection (10%) and 1 case by ileostomy (3.3%). For the gastric ulcer perforation, a simple suture was performed (3.3%) and the other case, which was tumoral, required an inferior polar gastrectomy of the four fifths with gastrojejunal anastomosis (3.3%). The 4 cases of duodenal perforation were all sutured (13.3%). We performed coecostomy for the infectious coecal perforation (3.3%) and anastomotic resection for the 2 cases of perforated coecal tumor (6.7%). Cholecystectomy was performed for the case of vesicular perforation (3.3%) (Table III). The 3 tumor cases were adenocarcinomas on postoperative pathology. All cases of gastro-duodenal ulcer perforation received postoperative treatment against Helicobacter pylori, combining a PPI molecule (omeprazole), amoxicillin and metronidazole as a matter of course. The morbidity rate was 20% (n=6). Postoperative peritonitis accounted for 13.3% (n=4), including 3 cases of anastomotic release and 1 case of residual subphrenic effusion; and parietal suppuration for 6.7% (n=2). Average hospital stay was 5.8 days±2.2, with extremes of 1 and 12 days. The mortality rate was 10% (n=3), including two cases of digestive stoma and 1 case of ileal anastomosis resection.

Table I: Etiologies of perforation

Etiologies	Number of cases	%
Infectious perforation	21	70
Ulcerative perforation	5	16.7
Tumoral perforation	3	10
Ileal diverticular perforation	1	3.3
Total	**30**	**10**

Table II: Perforation site

Perforations	Number of cases	%
Gastric	2	6.7
Duodenal	4	13.3
Ileal	20	66.7
Caecal	3	10
Vesicular	1	303
Total	**30**	**100**

Table III: Surgical treatment according to site of perforation

Perforation site	Number of cases	Surgical technique	%
Gastric tumour perforation	1	Gastrectomy	3.3
Antral perforation	1	Simple suture	3.3
Duodenal perforation	4	Simple suture	13.4
Ileal perforation	16	Single suture	53.4
	3	Anastomosis resection	10
	1	Ileostomy	3.3
Caecal tumour perforation	2	Resection anastomosis	6.7
Infectious caecal perforation	1	Coecostomy	3.3
Vesicular perforation	1	Cholecystectomy	3.3

DISCUSSION

In this study, non-traumatic digestive perforations accounted for 68.1% of all peritonitis. Authors have found the same trend, with a frequency of 40-70% [2-4]. Etiologies were dominated by infectious perforation in 21 patients, or 70% of cases, and these perforations were located at ileal level in 66.7% of cases (n=20). This prompted postoperative Widal serodiagnosis, which proved positive in 13 patients. Ayite A, and Kassegne I consider that the diagnosis of small perforation of typhoid origin can be made by extension in the presence of the characteristics of perforations found intraoperatively, even in the absence of bacteriological confirmation [2, 5]. Other causes of perforation (duodenal and gastric ulcer perforation,

gastric and caecal tumour perforation, vesicular perforation) were found in 30% of cases. We did not record cases of esophageal or rectal perforation in this study. Operating techniques for digestive perforations depend on the extent of the lesions and the patient's general condition. In a septic environment, the key is to perform a rapid rescue procedure, but above all to avoid anastomosis in such conditions. They range from simple suture to resection-anastomosis, or stoma. Careful peritoneal cleansing and drainage are recommended [1]. The most common procedure was simple suture of the perforation, in 70% of cases, followed by resection-anastomosis in 20% of cases. The same observation was made by the authors (p>0.05) [6, 7]. In gastric surgery, given the risk of cancer perforation, the choice is between emergency gastrectomy plus curage and suture of the perforation. The conclusion of a study by Vibert *et al.,* was in favour of emergency resection of the perforated and indurated zone, followed by suturing in the healthy zone [8]. We do not agree with this hypothesis, and believe that the intraoperative observation of the perforation and its surroundings allows us to choose the surgical technique and await the results of the anatomopathological examination. For this reason, the only case of gastric ulcer perforation (antral) was sutured, and the after-effects were straightforward. The 5 cases of gastro-duodenal ulcer perforation were all treated by simple suture of the perforation, followed by eradication of Helicobacter pylori with systematic triple therapy combining omeprazol, amoxicillin and metronidazole. The systematic application of this protocol is explained by the absence of an anatomopathology service in our region, and the specimen for t These attitudes are in line with those adopted by Gougard *et al.,* who do not seek to prove infection by Helicobacter pylori (HP) and prescribe probabilistic antibiotic treatment designed to eradicate HP [9]. Superficial and deep suppurations are complications frequently described after treatment for non-traumatic digestive perforation, and their frequency varies between 8 and 60% according to the literature [4, 10, 11]. This study was no exception, with a suppuration rate of 20% (p>0.05). The mortality rate of 13.3% is linked to the delay in diagnosis and hence treatment [1, 10].

CONCLUSION

The ileal site is the most frequent in digestive perforations. Simple suture is the main surgical technique. Morbidity and mortality remain high. he 3 tumors was sent to the capital, 390 km from our locality.

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