

Perforations of Gastro-Duodenal Ulcers in the Surgery Department “A” at the University Hospital Point G Bamako

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Abstract

The purpose of this study was to investigate the clinical and therapeutic aspects of peritonitis by perforation of gastric and duodenal ulcer. This was a retrospective and descriptive study over 8 years (2010-2018) which allowed to collect 54 cases of peptic ulcer. Included in the study were all patients with confirmed gastroduodenal perforation on histology or laparotomy. We collected 54 cases of peptic ulcer perforated s. The age group of 30 - 49 years was the majority. The male sex was dominant with 90.7% of cases; the clinical picture was dominated by abdominal contracture associated with pain in 74.07% of cases. X-ray of the abdomen without preparation (AWP) revealed in 87.03% of cases of pneumoperitoneum. The perforation was in 68.52% of cases on the gastric antrum and in 31.48% on the duodenum. The surgical procedure used was the bank of excision, and a suture reinforcement epiploic in 68.52% of cases, a simple suture made in 31.48% of cases, the disease was marked by a fistula (1.90%) and mortality was 5.55% of cases. The gastroduodenal ulcer perforation is potentially serious and responsible peritonitis whose surgical treatment involves the peritoneal toilet and sutures the puncture.

Keywords

Perforated Gastric or Duodenal Ulcer, Peritonitis, Surgery

1. Introduction

Peptic ulcer is a defect more or less deeply digging the gastric or duodenal wall. It is the result of an imbalance between aggressive factors and protective factors at a specific point of the gastric or duodenal mucosa. During its evolution, it may be responsible for several complications among which the perforation leads to a breach in the stomach and/or duodenum thus causing peritonitis. Peritonitis by perforation of peptic ulcer is a relatively common medical-surgical emergency that requires a multidisciplinary approach involving the surgeon and intensivist. Its prognosis is serious if management is delayed with a mortality rate that can reach more than 50% beyond the first 24 hours [1]. For a dozen years, the management of peptic ulcer perforation was significantly changed due to three factors: the progress of medical treatment combining proton pump inhibitors, eradication systematic of *Helicobacter pylori*, the progress of resuscitation and the contribution of laparoscopic surgery. In developed countries, the incidence of gastroduodenal ulcer perforation decreased through better management of peptic ulcer disease. The ulcer perforation represents 5% of abdominal emergencies according to some authors [2] and occupies the second place of complications of the ulcer after the haemorrhage. In Mali Coulibaly, [3] reported in a study, conducted a frequency of 30% compared Per the digestive formations with a mortality rate of 5%. We initiated this work in order to make a contribution to the study of this affection with the objective of determining the epidemiological, clinical aspects and the surgical management.

2. Methodology

This was a retrospective and descriptive study conducted in the Surgery A Department at Point-G Hospital in Mali. It took place over a period of 8 years (2010-2018). During the study period 54 cases of peptic ulcer perforation were collected.

Included criteria: all patients were included in the study with perforation of gastric or duodenal ulcer confirmed by histology and laparotomy.

Criteria of non-inclusion: Patients with perforation not located on the stomach or duodenum, tumor perforations and traumatic perforations were not included in the study. Incomplete medical records were not included in this study.

The clinical, para clinical, and therapeutic aspects have been studied. The medical records, the hospitalization record, the operative report, and the protocol of anesthesia served as a data support for the realization of this work.

3. The Results

As shown in **Table 1**, the age group 30 - 49 years was the majority, the average age was 37.5 years with extremes of 16 years and 83 years. The male represented 90.7% of cases (n = 49) with 9.8 sex ratio in favor of men, 34 patients or 63% were illiterate. All patients, 100% of cases (n = 54) were admitted to the emer-

gency department and 79.60% of these patients (n = 43) were referred by a general practitioner. The average time between onset of symptoms and surgical consultation was 72 hours. On admission 44.40% of patients (n = 24) had a WHO performance status grade 2 side. The lifestyle of patients: 13 patients or 24.10% of cases were smokers, 16.70% (n = 9) were alcohol-smokers. A concept of taking NSAID was found in 11 patients or 20.37% of cases. Medical history, functional signs, examination signs and para clinical examinations are reported in **Tables 2-5**.

A disappearance of the pre liver dullness was found in 3 patients is 5.50%. A admission 70.37% of patients (n = 38) had a body temperature above 38°C. A

Table 1. Distribution of patients by age.

Age	Effective	Percentage
15 - 29	16	29.60
30 - 49	30	55.60
50 - 69	5	9.30
70 - 89	3	5.60
Total	54	100

Table 2. Medical history.

Medical background	Effective	Percentage
Confirmed gastric ulcer	20	37
Confirmed duodenal ulcer	14	26
Gastritis	8	15
Other	12	22
Total	54	100

Table 3. Distribution of patients according to functional signs.

Functional signs	Effective	Percentage
Diffuse abdominal pain	39	72
Epigastric pain	8	15
Vomiting + abdominal pain	6	11
Stopping of materials and gases	1	2
Total	54	100

Table 4. Distribution of patients according to physical signs.

Physical signs	Effective	Percentage
Epigastric Defense + pain in stabbing	14	26
Abdominal contracture + diffuse pain	40	74
Total	54	100

medical preparation was performed in all patients 100% of cases, it consisted of rehydration hydro-electrolytic, and dual antibiotic therapy. An X-ray of the abdomen without preparation (ASP) required for the diagnostic assessment showed pneumoperitoneum in 87.03% of cases (n = 47), it returned normal in 7.40% of cases (n = 4). The gastric antrum was the seat of the perforation in 68.50% of cases (n = 37) and the duodenum in 31.48% of cases (n = 17). The hole of the perforation was less than 2 cm. in 92.60%. We operated on 52 patients or 96.30% of cases by laparotomy, and 2 patients 3.70% of cases by laparoscopy. The surgical procedure used is reported in **Table 5**.

Operative follow-up was simple in 85.15% of cases (n = 46). Morbidity was marked by one case of fistula (1.90%) and mortality was 5.55% of cases (n = 3).

4. Discussion

The perforation of a peptic ulcer is a serious complication of peptic ulcer disease. Here we report the results of a retrospective and descriptive study. The review of the literature reports a frequency of peritonitis perforation of peptic ulcer which is variable between 3% - 17% according to the studies. The 30% of our series are statistically superior to the 10% and 15% respectively reported by Cougard and al [2] in France and Alamowitch and al in Russia [4]. The male predominance of gastroduodenal ulcer perforation has been reported in several series. In the study conducted by Youssef *et al.* [5] in Tunisia perforation involved 96.9% of men. Cougart [2] found that 71.36% of cases were men. According to Soule JC [6], male predominance is explained by the presence of parietal cells in the stomach in greater numbers than in women. These cells secrete the primary compound which has a very high concentration of chloridic acid. It is also attributed psychological factors and the prevalence of smoking in the male population. Recent literature involves *Helicobacter pylori* as one of the main causes of perforation peritonitis of peptic ulcer disease. Perforation is associated with *Helicobacter pylori* infection in 47% - 97% [7]. His diagnosis is based on biopsy and serology. The biopsy was not performed in all our patients which allowed us to determine the incidence of *Helicobacter pylori* in our series. Other factors contribute to increasing the morbidity of this condition such as tobacco. In our series 16.70% (n = 9) of patients were smokers against 74% of smoking in series Boey J [8]. Taking gastro-toxic drugs (non steroidal anti-inflammatory) can cause perforation of a peptic ulcer even in the absence of *Helicobacter pylori*, this risk is multiplied by 3 to 4 times. In our series there was a concept of taking NSAID in 20.37% (n = 11) of patients, against 20% of cases reported by Boris Alamo with

Table 5. Surgical procedure.

Surgical procedure	Effective	Percentage
Excision of the margins + suture + epiplooplasty	37	68.52
Simple suture	17	31.48
Total	54	100

[4]. In our study the confirmed gastric ulcers accounted for 37% of cases and duodenal ulcer 18.50% of cases. This result is similar to the 18% confirmed ulcer reported in the Boey J series [8]. The delay between the appearance of the first signs and the medical consultation is important to specify because it can condition the therapeutic management. In the European series this delay is short (10 hours), it was 48 hours in our series. This delay of consultation is explained in our developing countries by the socio-economic conditions, the geographical distance and the scarcity of surgical center. The clinical diagnosis of peritonitis by perforation of gastric and duodenal ulcer was easy in most series because a careful clinical examination and a well-conducted interrogation make it possible to have a diagnostic suspicion. It was mentioned in our series in 74.07% of patients who presented a table of diffuse abdominal pain associated with abdominal contracture. An epigastric defense with stabbing pain was found in 25.9% of our patients. Paraclinical examination of first intention was the radiography of the abdomen without preparation (AWP). Most of the authors have asked it. In our series it revealed a pneumoperitoneum in 87.03% of cases, this result is close to the 74% of cases of pneumoperitoneum reported by Boey [8]. It was not contributive in 7.40% of cases in our series. The principles of surgical management of peptic ulcer perforation are the same in most of the series, the channel can first change, these principles consist after preoperative medical preparation is carried out intraoperatively a peritoneal lavage and repair of the lesion (perforation). At admission 65% of patients in our series had $\text{MPI} \leq 26$ in our series all patients underwent preoperative medical preparation, 96% of patients in our series were operated by laparotomy and 4% by laparoscopy. In the series reported by Boris Alamowich [4] all patients were operated on laparoscopically, *i.e.* 100% of cases. The difference with our results reflects the experience of different surgery teams and the unavailability of emergency Laparoscopic surgery equipment in Mali. In our study the perforation was located respectively in 68.52% on the gastric antrum and in 31.48% on the duodenum. In the series reported by T.T. Tran [7] the location of the perforation on the gastric antrum was 92% and that of the duodenum 8% of cases. The gastric location of the perforation was the most common in our series; it is explained by the high percentage of gastric perforation in our series. The surgical procedure used in our series was excision + suture the banks of the perforation, with strengthening epiploic in 68.52% and the simple suture performed in 31.48%. It did not seem necessary to associate the suture with a vagotomy in an emergency context and given the effectiveness of the eradication treatment of *Helicobacter Pylori*. This medical treatment consisted in our study of the use of a triple therapy including a proton pump inhibitor and a double antibiotherapy (amoxicillin and clarythromycin). The simple 85.15% follow-up and the 5.55% mortality observed here correspond to those of the large series [5] [7]. The morbidity was marked by a case of digestive fistula (1.99% of cases) which required a recovery. The average hospitalisation of 9 days observed in our series corresponds to that reported by certain authors [1] [3].

5. Conclusion

The perforation of gastric or duodenal ulcer is responsible for a potentially severe peritonitis. The surgical procedure of its treatment consists of peritoneal lavage, suture of the perforation opening. Its prognosis is correlated with the speed of its management.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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