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

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Abstract | **Original Research Article**

The aim of this study was to evaluate the management of perforated gastroduodenal ulcers in the surgical department "A" of the Point-G University Hospital. This was a retrospective and descriptive study spanning 12 years (2010-2022). Patients included in the study were those who underwent surgery for perforation of non-tumoral gastroduodenal ulcers. We collected 60 cases, comprising 47 men and 13 women. The perforation was located in the antropyloric region in 78.3% of cases and in the duodenal bulb in 13 cases (21.6%). The surgical procedures performed were: excision and suturing of the perforation margins combined with omentoplasty in 95% of cases. A truncal vagotomy combined with excision and suturing of the perforation edges was performed in 5% of cases (n=3). The postoperative course was uneventful in 66.6% of cases (n=40%). A parietal infection was noted in 15% of patients (25%). The mortality rate was 8.3% (n=5). The perforation appears to reveal the underlying gastroduodenal ulcer in most patients. These complications are frequent in our department. Treatment most often consists of excision and suturing of the perforation edges.

Keywords: gastroduodenal ulcers, perforation, suture.

INTRODUCTION

The diagnosis of gastroduodenal ulcers is often missed in Africa due to self-medication and the failure to perform gastroscopy in cases of epigastric pain [1]. Gastroduodenal ulcers are complicated by perforation in 5% of cases [2]. These perforations are serious, often diagnosed late, and their treatment requires pre-, intra-, and postoperative resuscitation.

PATIENTS AND METHODS

We conducted a retrospective and prospective study of gastroduodenal ulcer perforations from January 2010 to December 2022, a period of 12 years, in the surgical department "A" of the Point-G University Hospital. This study allowed us to collect 60 cases of gastroduodenal ulcer perforation. Patients with gastric or duodenal perforation of ulcer origin were included in the study. Cases of perforation of tumoral origin were excluded. At the end of the study, 60 records were retained, comprising 47 men and 13 women. Clinical and paraclinical parameters, as well as therapeutic outcomes, were analyzed.

THE RESULTS

Frequency:

Over 12 years, 1300 cases of generalized peritonitis were recorded, including 60 cases of perforated gastroduodenal ulcers. Peritonitis due to perforated gastroduodenal ulcers accounted for 4% of generalized peritonitis cases.

Sex: males represented 78.3% (n=47) and females 21.6%
Age: The average age of the patients was 38 years, with extremes ranging from 20 to 75 years.
Origin: the majority of patients lived in urban areas 66.6% of cases (n=40) and 20 patients lived in rural areas, i.e. 33.3% of cases.

Lifestyle and socioeconomic conditions:

the majority of patients (66.6%) were drivers, unemployed individuals, small business owners, and civil servants with modest incomes. The identified risk factors were alcoholism (33.3%), smoking (50%), the use of gastrointestinal medications, and traditional medicines (50%).

The consultation period.

Table I: Consultation period

Deadline Consultation	1-24 hours	1-2 days	3-4 days	5-6 days	More than 7 days
Number	6	10	25	10	9
Percentage	10	16.6	41.6	16.6	15

The diagnosis:

All patients were admitted with a generalized acute peritonitis. In 55% of cases (n=33) patients presented with abdominal pain, more pronounced in the epigastrium, abdominal rigidity, umbilical tenderness, and bulging of the pouch of Douglas.

In 51.6% of cases (n=31), patients presented with severe dehydration, persistent skin folds, oliguria, abdominal tenderness, no true rigidity, and dullness of the flanks. Asthenic forms accounted for 45% of cases; these patients were in poor general condition with a peritoneal appearance. During questioning, 40 patients (66.6%) reported taking gastro-aggressive medications, 20 patients (33.3%) reported alcohol consumption, and 26 patients (41.6%) reported using traditional remedies. A history of epigastric pain was reported in 30% of patients.

All patients underwent plain abdominal radiography (100% of cases), which revealed unilateral pneumoperitoneum in 66.6% of cases and bilateral pneumoperitoneum in 10% of cases, with diffuse haziness in 50% of cases. Ten patients (10% of cases) were admitted with abdominal CT scans suggesting suspected perforation of a hollow organ with peritoneal effusion. Abdominal ultrasound was performed in 10% of patients.

The treatment:

Pre-, intra-, and post-operative medical preparation was provided to all patients, consisting of correcting electrolyte imbalances and anemia. Dual antibiotic therapy was administered. Post-operatively, anti-ulcer treatment was initiated for all patients.

Following midline laparotomy above and below the umbilicus, exploration revealed purulent peritoneal effusion in 50 patients (83.3%) and bilious peritoneal effusion in 10 patients (1.6%). The volume of fluid varied between 600 ml and 1500 ml; a sample was taken for bacteriological examination.

- The site of perforation was antropyloric in 47 cases (78.3%) and bulbar in 13 cases (21.6%).
- A biopsy of the gastric ulcer was performed in 50% of patients to rule out a malignant lesion.
- The surgical procedures performed are listed in Table II.

Table II: Surgical procedures performed

Surgical procedure performed	Number	percentage
Excision-suture plus omentoplasty	57	95
Truncal vagotomy + Excision-suture + pyloroplasty	3	5
Peritoneal cleansing + drainage	100	100

Table III: Post-operative course

Post-operative care	Number	Percentage
Simple	40	66.6
Parietal infection	15	25
Death	5	8.3

DISCUSSION

In the surgical ward "A" of the Point-G University Hospital, perforations of gastroduodenal ulcers are not uncommon. They accounted for 4% of all generalized peritonitis cases. The significance of peritonitis due to perforation of gastroduodenal ulcers has been reported in the literature [2]. In Burkina Faso, S.S. Traoré [3] reported a frequency of 3% of all generalized peritonitis cases. The male predominance noted in our series is consistent with those reported by Detrie [2] and Traoré [3], who respectively noted a male-to-female ratio of 11 and 10, respectively. In this study, ulcer perforation was observed in young adults with a mean age of 36 years. Our results are not different from those reported by Ronger [5] and Agzhadi [4], who observed mean ages of 30 and 42 years, respectively. Classically, duodenal ulcers are a condition affecting young people, typically occurring around age 36, while gastric ulcers occur after age 45 [6]. In our context in Mali, perforation appears to be the presenting symptom of peptic ulcer disease in 70% of cases. This presentation is partly due to the frequency of self-medication and the numerous prescriptions issued without endoscopic diagnosis for epigastric pain. To reduce the frequency of this complication, we believe it is crucial to systematically request gastroscopy for any epigastric pain. In our series, 66.6% of patients lived in urban areas with modest socioeconomic conditions. Lack of financial

resources, stress, alcohol and tobacco use, self-medication, and particularly the use of gastrointestinal medications, would partly explain the high frequency of ulcer perforation in urban areas. In our series, the observed delay in seeking medical attention can be partly explained by the use of traditional healers and self-medication; 90% of cases in our series consulted after 24 hours. These figures are identical to those reported by S. Traoré [3], which explains the prevalence of asthenic forms observed in several series [1, 2, 3]. All perforations observed in our series occurred in the free peritoneum, hence the frequency of generalized peritonitis. Camilleri [7] noted the rarity of retroperitoneal perforations. Plain abdominal radiography was performed in all our patients (100% of cases), and in most series, it revealed pneumoperitoneum in 80% of cases. However, it was absent in 17% of cases according to Detrie [2]. In our study, abdominal CT scans were performed in 5% of patients. This examination was not performed in the series reported by S. Traoré [3], which could be explained by the lack of availability of this examination in emergency situations. When performed, this examination could provide diagnostic guidance. The presence of pneumoperitoneum suggests perforation of a hollow organ and necessitates laparotomy after evaluation and medical preparation of the patient by the intensivist and surgeon, as these patients are very often seen late in life and in a deteriorated general condition. Purely medical treatment of perforation, according to the Taylor method, requires certain conditions (accurate diagnosis of the perforation, patient seen within the first few hours). These conditions are not met in the African context due to diagnostic and management delays. Gastric perforations were the most frequent in our series; however, some authors, Detrie and Hannoun [2, 8], reported a duodenal predominance. Excision with stitching of the perforation edges combined with omentoplasty was performed in 95% of our patients (n=57). This simple and quick procedure has been used by most authors and is justified by its simplicity and the patients' poor general condition. Favre [9] and Khosrovani [10] identified three risk factors that should prompt simple stitching whenever one of them is present: age over 70 years, admission time exceeding 24 hours, and the presence of preoperative hemodynamic shock. In 5% of our patients with duodenal perforation, we performed a truncal vagotomy combined with stitching of the perforation and pyloroplasty; these patients were seen early. This technique is thought by some authors to be responsible for digestive disorders [9]. None of our patients underwent laparoscopic surgery. This is consistent with the findings of several authors and could be explained by the lack of laparoscopic equipment and its use in emergency situations. However, some patients in the series reported by Mutter [11] did undergo laparoscopic surgery. Postoperatively, all our patients received medical treatment with H2 blockers and antibiotics to eliminate Helicobacter pylori. This therapeutic approach has been observed in numerous publications. Endoscopic monitoring of patients with gastric or duodenal ulcers is necessary to prevent complications.

CONCLUSION

Perforated gastroduodenal ulcers are common in the surgical department "A" of the Point-G University Hospital. They most often reveal peptic ulcer disease, and patients are seen in a compromised state due to early diagnosis. The standard treatment is excision and suturing of the perforation edges. Improved medical management of gastroduodenal ulcers helps minimize these complications.

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