

SIMPLE CLOSURE OF PERFORATED DUODENAL ULCER: IS ADDITION TO H₂ ANTAGONISTS OF VALUE

By

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The aim of this study is to evaluate our experience in the treatment of perforated duodenal ulcer. We retrospectively analyzed 50 patients treated with simple closure and postoperative H₂-antagonist. Majority of patients (84%) were expatriates. Average age was 34.5 years. No associated medical conditions were reported in any of them. Five patients presented 24 hours after perforation and were in shock. The morbidity was 12%, while there was no death reported. Average hospital stay was 7.4 days. Forty one patients were followed-up for one month to 17 months with no clinical evidence of ulcer recurrence. Conclusion: Simple closure and H₂-antagonist resolve peptic ulcer disease with very low morbidity and mortality. IN addition, experience showed that conservative treatment may be appropriate for a selected group of patients where general condition is not deteriorating.

Keywords: Perforated duodenal ulcer, simple closure, H₂-antagonist

INTRODUCTION

Perforated duodenal ulcer is one of the common surgical emergencies. Many factors have been linked to its aetiology such as drugs, smoking, peptic ulcer disease, stress and possibly helicobacter pylori infection^(1,2)

The spectrum of its management is wide. In the 1950s definitive surgery was widely practiced⁽³⁾. Later on, simple closure dominates for many logistic reasons. It is usually done by junior surgeons and is associated with acceptable morbidity and mortality especially in severely ill patients. The routine use of H₂-antagonist after simple closure is debated.

In this study we evaluated the value of adding H₂-antagonist to simple closure in terms of outcome, complications and mortality.

PATIENTS AND METHODS

The files of fifty patients with perforated duodenal ulcer over five years (1992-1996) were retrieved from the Medical Records at King Abdulaziz Hospital and Oncology Centre and analyzed, for following parameters. Age, sex,

nationality, shock, preoperative length of stay (PLOS), smoking, drugs, alcohol, associated medical conditions, social class, air underdiaphragm, operative findings, hospital stay, complications, and mortality.

All patients underwent simple closure of the perforation and were given postoperative H₂-antagonist. Patients with traumatic or malignant perforations were excluded. There were no associated medical conditions. Prophylactic antibiotics were given to all patients and continued postoperatively in some patients as required. Forty-one patients were followed up for one month to 17 months. Endoscopy was done for only six patients (12%). All patients were of low socio-economic status.

RESULTS

The age of patients ranged from 17-90 years with a mean age of 34.5 years. Forty-eight patients were males and two patients were females with a M: F ratio of 24:1.

Patients belonged to as many as 13 countries. Twenty seven (54%) were form Indian subcontinent, eight (16%) were Saudi, six (12%) belonged to Yemeni and four were (8%) from other countries (Table 1).

Table (1): Nationality of patients

Nationality	No. of patients	Percentage
Indian subcontinent	27	54%
Saudi	8	16%
African	6	12%
Yemini	5	10%
Others	4	8%

History of previous peptic ulcer disease was evident in 31.7% patients. There were 15 (83.3%) patients who smoked, one (14.3%) patient who drank and three (3.2%) patients were receiving non-steroidal anti-inflammatory drugs (NSAID). Five (10%) patients presented in a state of shock.

Chest roentgenographic examination revealed air under diaphragm in thirty nine (93%) of patients. The preoperative length of stay (PLOS) before performing surgery was less than 6 hours in 44 (88%) and more than six hours in six (12%).

The site of perforation was the first part of duodenum in forty two (84%) patients and eight (16%) patients had pre-pyloric perforation. In most of the patients the size of the perforation was up to 0.5 cm. It is worth noting that in forty three (86%) patients the omentum was sealing the perforation and it had to be mobilized to allow closing. Only one patient (90 years old) developed septicaemia. Three patients developed chest infections and two developed wound infection (Table 3).

Table (3): Complications

	No. of Patients	Percentage
Chest infection	3	6%
Wound infection	2	4%
Septicaemia	1	2%
	6	12%

The mean hospital stay was 7.4 days. MI patients were discharged in good condition. With regard to seasonal variations, twenty two (44%) cases occurred during the cold season (November, December, January, February) and thirteen (26%) patients occurred during the hot season (May, June, July, and August).

DISCUSSION

Perforated duodenal ulcer is a commonly encountered surgical emergency. The management is hotly debatable. This is due to two main factors. The first is the multiplicity of treatment options and secondly because of its heterogenous aetiology. The aetiology of perforated duodenal ulcer is poorly understood. Many risk factors are implicated such as steroids, NSAID, smoking, social stress and if it could be proved, H. pylori infection^(1,2). Smoking is an important risk factor^(1,2). Most of our patients are

smokers (83.3%). This is consistent with the study of Reinbach et al⁽¹⁾. Only 3.2% of our patients used NSAID. This is a very low figure in comparison with the world literature (32-82%)^(4,5). This low prevalence is because most of our patients are young and are not using NSAID. We believe that personal and social stress as well as dietary habits are important risk factors. Majority of our patients (84%) were expatriates and 54% were from Indian subcontinent. They use spicy foods and herbal chewing (Tambol) which may be implicated as risk factors. Additionally, all of our patients were of low socio-economic status and being away from their families puts them under great tension. Thirteen (31.7%) patients gave a history of previous peptic ulcer disease. Therefore, peptic ulcer can't be assumed as the only risk factor for perforation. La La et al showed that patients with perforated duodenal ulcer with no antecedent history of peptic ulcer disease have normal gastric acid output and may have other aetiological factors⁽⁶⁾.

We have clearly noticed seasonal variations. Twenty-two (44%) patients had their perforations during the cold season in Jeddah (Table 2).

Table (2): Seasonal variations

Seasons	No. of patients	Percentage
Cold: Nov., Dec., Jan., Feb.	22	44%
Hot: May, June, July, August	13	26%

The pre-operative length of stay is very interesting. Forty-four (88%) patients are operated on in less than six hours since presentation to emergency room. This early presentation and early intervention contribute to the very low complication rate as we will discuss later. Air under diaphragm was noticed in 93 % of cases and this is higher than what has been reported in literature (75-80%).

At the time of surgery omentum was found sealing the perforation in forty-three (86%) patients. When this finding is considered with the small size of perforation and absence of pus in the peritoneal cavity, a very important question is raised : Should we operate on all perforated duodenal ulcers?

If strict criteria are followed up conservative therapy is a logic approach in selected group of patients^(7,8). The treatment of perforated duodenal ulcer is controversial. Most surgeons agree that definitive surgery at the time of laparotomy for perforation is not reasonable and should be avoided because of its morbidity and the availability of effective medical therapy^(7,8). It should be reserved for patients who relapse after simple closure⁽³⁾.

On the other hand, simple closure alone is associated with poor results⁽¹¹⁾ high ulcer recurrence rate (40-60%)^(9,12). Koh and Chang⁽¹³⁾ in a retrospective study of 46

patients showed that simple closure and addition of H2-antagonist is safe and effective. This is contradictory to the results of Sevvets et al⁽⁹⁾ who confirmed in a randomized, controlled, double blind study that the addition of ranitidine after simple closure doesn't appear to promote ulcer healing.

In this study, there was no ulcer recurrence in 41 patients who were followed up. Forty six (92%) patients stayed in the hospital for 6.5 days. These patients were eligible for earlier discharge from the hospital. However, because they were alone and nobody was taking care of them, they were kept for longer periods of time. Six (12%) patients developed complications. Three had chest infections, two had wound infections and one patient was in septicaemia (Table 3). These complications were documented in those who were above 60 years old and who presented to the emergency room more than 24 H after the onset of pain.

The mortality in this study was zero. Both morbidity and mortality were very low compared to that reported by Bonati L et al, 30.9% and 16.6% respectively⁽¹⁴⁾. We believe that the low morbidity and mortality in our patients is due to three main reasons

1. Majority of patients are young with a mean age of 34.5 years.
2. Absence of shock in 90% of patients.
3. Absence of associated medical diseases.
4. Early surgical intervention: 88% of patients operated on within 6 hours of admission.

In conclusion, this study demonstrates that patients with perforated duodenal ulcer should have simple closure which is associated with very low morbidity and zero mortality. The addition of H2-antagonist favorably reduced the ulcer recurrence.

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