Med. J. Malaysia Vol. 37 No. 3 September 1982.

PERFORATED PEPTIC ULCERS IN WEST MALAYSIA – A SERIES OF 73 CASES TREATED BY SIMPLE CLOSURE IN A GENERAL HOSPITAL BETWEEN 1972 AND 1974

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SUMMARY

In a 3 year period 73 cases of perforated peptic ulcers were treated by simple closure. The overall mortality of 3.77 percent is acceptable when compared with other reports. There was a marked male preponderance (11 males : female 1). Biopsy results confirmed the operative findings that perforations were seven times more common in gastric peptic ulcers than duodenal ones. The disease affected young adults, the middle aged and elderly, the peak incidence occurring between the fifth and seventh decades of life. Simple closure was an effective surgical procedure for our group of patients.

INTRODUCTION

'Perforation of a gastric or duodenal ulcer is one of the most serious and overwhelming catastrophies that can befall a human being' (Lord Moynihan). In the author's experience one of the commonest indications for emergency laparotomy was perforated peptic ulcer. This author suspected there were differences between our patients and those reported from North America, Britain, India and West Africa. This study was prompted by the desire to obtain data from our own experience with a multiracial population in West Malaysia.

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MATERIALS AND METHODS

During the 3 year period from 1972 to 1974 inclusive, 78 cases of perforated peptic ulcers were treated by two surgical units at Hospital Besar Johor Baru in West Malaysia. The present study is based upon the critical evaluation of the patients' records. There was incomplete information on 5 cases, leaving 73 cases for this series. The patients were treated with nasogastric suction, intravenous fluids, systemic antibiotics and emergency laparotomies were performed when they were considered adequately resuscitated. Routine investigations such as haemoglobin concentration, haematocrit, serum electrolytes, blood urea and radiographs of the abdomen in the erect and supine positions were done in most cases. The operations were performed by two surgical registrars, medical officers and in 3 cases by house surgeons under direct supervision. The abdominal incision chosen was either a mid-line upper abdominal or a right upper paramedian. Exploratory laparotomy determined the site of perforation, the extent of peritoneal soiling and associated pathologies such as gallstones and cirrhosis of the liver. A thorough peritoneal toilet and lavage with normal saline were performed until the peritoneal cavity was free of debris and the lavage fluid was clean and clear. A biopsy of the perforated ulcer was done and the perforation was closed in two layers with silk. In a small percentage of cases the hepatorenal pouch was drained if gross contamination with food debris or purulent peritoneal fluid had occurred.

RESULTS

There were interesting differences as regards the races, sex and type of ulcer.

In this series the actual number of perforated peptic ulcers in Chinese was three times (46 cases) more common than Malays (14 cases). Although the actual number of cases in Indians (13 cases) was similar to that of Malays, the incidence of perforated peptic ulcers in Indians must, in fact, be higher because they form only about 11 percent of the Malaysian population.

TABLE I
RACIAL AND SEX DISTRIBUTION OF 73 PATIENTS WITH PERFORATED PEPTIC ULCERS SEEN DURING 1972-1974

Year	1972		1973		1974	
Race	Male	Female	Male	Female	Male	Female
Malays	6	0	2	0	6	0
Chinese	16	2	14	2	11	1
Indians	3	1	5	0	4	0
Total	25	3	21	2	21	1

In this series of 73 cases of perforated peptic ulcers, there were 67 males to only 6 females, making it an eleven times male preponderance. There was not a single case of perforated peptic ulcer in the Malay female.

Age distribution

Perforated peptic ulcers in this series is a disease affecting young adults, the middle aged and the elderly, the peak incidence occurring between the fifth and seventh decades of life.

TABLE II
AGE DISTRIBUTION OF 73 PATIENTS WITH PERFORATED PEPTIC ULCERS

Age	Number of cases
0 - 19 years	0
20 - 29 years	10
30 - 39 years	8
40 - 49 years	20
50 - 59 years	17
60 - 69 years	16
70 - 79 years	2
Total	73

Mortality

There were 3 deaths of the total of 78 cases treated surgically. The first death was a 59 year old Indian who presented as an advanced generalised peritonitis diagnosed as intestinal obstruction. He gave a history suggestive of chronic renal insufficiency. The patient died on the 7th postoperative day of bronchopneumonia and hepato renal syndrome. The second was a 74 year old Chinese male first seen in a moribund state. After resuscitation free pus was found in the peritoneum. He died on the 2nd postoperative day of circulatory overload. The third death occurred unexpectedly in a 75 year old Indian male on the 8th postoperative day of myocardial infarction. The overall mortality was 3.77 percent.

Presenting complaints

It was decided to analyse in some detail the records of the 51 patients seen between 1972 and 1973 inclusive to determine the mode of presentation of perforated peptic ulcer and the useful signs on physical examination of the patient. To ensure some uniformity the author examined most of the patients himself and elicited the signs where relevant.

TABLE III
PRESENTING COMPLAINTS SEEN IN 51 PATIENTS WITH PERFORATED PEPTIC ULCERS

Presenting complaints	Number of cases*	Percentage
1. Sudden epigastric pain	33	66 %
2. Generalised abdominal pain	20	40 %
3. Shoulder tip pain	4	8 %

* Total number of cases analysed : 51

Signs on physical examination

In more than two thirds of the patients there was a typical history of sudden excruciating pain in the upper abdomen, the patient remembering the time it happened and the exact activity he was involved in. Two patients gave a history of blunt trauma in the upper abdomen.

The striking feature on examination was the pain which made the patient lie still. Boardlike rigidity was unmistakable and present in half the patients examined. In early cases of perforations or in small ones and in those where sealing with omentum had occurred spontaneously tenderness and guarding

TABLE IV
PHYSICAL SIGNS SEEN IN 51 PATIENTS WITH PERFORATED PEPTIC ULCERS

	Number of cases*	Percentage
1. In pain	35.	70 %
2. Tenderness and guarding upper abdomen	13	26 %
3. Tenderness and guarding upper abdomen and right	9	18 %
4. Boardlike rigidity	24	48 %
5. Loss of liver dullness	8	16 %
6. Shoulder tip pain	4	8 %
7. Temperature		
Afebrile	12	24 %
Febrile	12	24 %

* Total number of patients : 51

were often confined to the upper and right side of the abdomen and also the right iliac fossa. Not unexpectedly therefore a differential diagnosis of acute cholecystitis and acute appendicitis was sometimes considered. In the author's experience, the combination of the history of sudden severe epigastric pain and boardlike rigidity on examination increased the diagnostic accuracy to 100 percent. Indeed in the typical case the correct diagnosis was made confidently but the atypical case of perforated peptic ulcer could fox even the more experienced surgeon.

Radiographs of the abdomen in the erect and supine positions

X-ray abdomen was done in 29 cases. Gas under the diaphragm was found in 24 cases. There was no gas under the diaphragm in the other 5 cases. The finding of gas under one or both leaves of the diaphragm was a useful confirmatory sign of perforation of a hollow viscus.

Type of ulcer

From the records of the 51 cases seen between 1972 to 1973 inclusive there was a preponderance of gastric over duodenal ulcers. Most of these ulcers were situated along the lesser curvature in the region of the pyloric antrum and the prepyloric region. We found at operation 40 perforated gastric ulcers to 6 perforated duodenal ulcers and 45 of these were situated anteriorly. Only 1 perforated gastric ulcer was situated posteriorly in the region of fundus of the stomach.

Histopathology of perforated peptic ulcers

This confirmed the operative findings above. The histopathology of biopsy specimens showed changes consistent with gastric ulcers in 41 cases and duodenal in 6 cases. There was 1 case of reported carcinoma stomach which is excluded from this series of perforated peptic ulcers.

TABLE V
HISTOPATHOLOGY OF PERFORATED PEPTIC ULCERS

Year	1972	1973	1974	Total
Type of Peptic ulcer :—				
Gastric	21	13	7	41
Duodenal	3	2	1	6

DISCUSSION

In this author's experience one of the commonest indications for emergency laparotomy in acute abdomen excluding trauma, was perforated peptic ulcer. One of every 200 surgical admissions was a perforated peptic ulcer and on the average two cases were treated each month. The majority of the patients were elderly and clearly formed a high risk group. Considering the ages of the patients, the experience and skill of the surgeon and the emergency situation, there was more than sufficient justification for performing a simple closure to save lives.

This series showed perforated peptic ulcers to be three times more common in Chinese than Malays and the incidence in Indians was comparatively high considering that Indians formed only 11 percent of the population in West Malaysia. An earlier report from this region showed the incidence of perforated peptic ulcers to be 81 percent in Chinese, 15 percent in Indians and only 5 percent in Malays. [1] In contrast to other reports [2] where there were no significant differences in sex, it was found that perforated peptic ulcers were eleven times more common in males than females. Furthermore, most series reported most perforations to be due to duodenal ulcers; this series showed the majority to be due to gastric rather than duodenal ulcers and these were confirmed on histopathology of the biopsy specimens taken at operation. [2,3,4]

The mortality following surgical treatment has decreased dramatically from the 70 percent to 90

percent range reported before the turn of the century and De Bakey [5] noted an overall mortality of 23.7 percent. Delay in treatment, old age, absence of a previous ulcer history and the female sex have been reported to influence the mortality rate adversely. In series where simple closure is used in the critically ill patient who has delayed medical help the mortality varies between 20 percent to 30 percent. [2,6]

A recent series of 60 cases reported a mortality of 17 percent. [4] Graham had an excellent series, reporting a mortality of only 2 percent he had one death from 51 cases. In the present series of 78 cases treated by simple closure these were 3 deaths giving an overall mortality of 3.7 percent. All were males. Their ages were 59 years, 74 years and 75 years respectively. There was no female death at all.

Many authors have recommended definitive surgical procedure for emergency management of perforated peptic ulcer. [7] They have argued that between one third to two thirds of patients treated by simple closure required further operations. A critical analysis of their series showed there was selection of cases. The more fit and younger patients were given definitive operations and the elderly and those where there was delay in treatment were treated with simple closure. Though this has been practised with success by skilled craftsmen using either partial gastrectomy or various forms of vagal section, it is a negation of Theodore Kocher's maxim, 'Everything that is necessary, nothing that is not necessary,' which should be the basic tenet for the emergency surgeon. It is no use saying that 60 percent of patients who have perforations eventually have recurrent problems. First this means 40 percent will not, and this routine 'curative' surgery will have been wrongly applied to them. Second recurrence statistics takes no account of disease-free interval which is surely preferable to having undergone a 'curative' operation at a time when it was not necessary. In this series of 73 cases the period of follow-up was not sufficiently long to make meaningful conclusion of recurrence rate of dyspepsia, but the author performed two partial gastrectomies within two years of simple closures for recurrence of symptoms.

Skarstein [2] compared two identical groups following partial gastric resection and simple closure. He found the recurrence rate of dyspepsia after simple closure was 54.7 percent and only 27.3 percent required to be treated surgically. In most series, however, about half the patients do not give a past history of ulcer. Definitive gastric surgery or surgery for duodenal ulcer is not without its own morbidity and mortality. In other words for a large percentage of patients with perforated peptic ulcers, simple closure not only remains an effective surgical procedure, but also all that is really necessary.

ACKNOWLEDGEMENT

I wish to thank the Director General of Medical Services Malaysia for permission to publish this paper. I also wish to thank the staff of wards West I and East I, General Hospital, Johore Baru for their dedication.

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