

# Changing Trend in Topography of Peptic Ulcer Perforation

Aijaz A. Memon, Afsar Ali Bhutto, Ghulam Shabir Shaikh, Amanullah Jokhio  
and Quratul-ain Soomro

## ABSTRACT

**OBJECTIVE:** To find out the changing trends in topography of peptic ulcer perforation.

**DESIGN:** Retrospective.

**SETTING:** Department of Surgery, Unit II Chandka Medical College Teaching Hospital Larkana

**DURATION:** From July 2004 to June 2007 (3 years).

**PATIENTS AND METHODS:** The age, sex, clinical presentations, treatment options and operative findings of patients, who presented with perforated peptic ulcer were studied from their case files, and data were analysed.

**RESULTS:** Out of 86 patients, 81 were males and 5 were females with a male to female ratio of 16.2:1. The prevalence of perforation was highest in patients of 40-59 years of age. Seventy-six patients underwent emergency explorative laparotomy. Among these, 70 patients had gastric and 6 had duodenal ulcer perforation, resulting in duodenal to gastric ulcer ratio of 1:11.5. Repair with Omentopexy was the procedure employed.

**CONCLUSIONS:** Peptic ulcer perforation is most common in the stomach of middle aged man.

**KEY WORDS:** Peptic ulcer, Perforation, Site.

## INTRODUCTION

Peptic ulcer is break in epithelium of esophagus, stomach, duodenum, or rarely Meckel's diverticulum.<sup>[1]</sup> There are three conditions which fall in the category of peptic ulcer disease: chronic duodenal ulceration, chronic gastric ulceration and erosive gastritis. Chronic duodenal ulceration occurs in duodenal bulb. There are two types of chronic gastric ulcer; type 1 and type 2, type 1 ulcer occur in body of stomach whereas type 2 ulcers develop in the antrum, or pyloric canal (pre-pyloric or pyloric channel ulcer). Perforation is a life-threatening complication of peptic ulcer disease and occurs in approximately 2 to 10 percent of peptic ulcers.<sup>[2]</sup> The first clinical description of perforated peptic ulcer was made by Crisp in 1843. The features of disease and of the patients affected have changed ever since. During the nineteenth century, ulcer perforation was a rare disease that occurred mainly in young women, with perforation located near the cardia of stomach<sup>[3]</sup>. During the early twentieth century, the incidence of ulcer perforations, increased and ulcers were situated in the duodenum of middle aged men.<sup>[4]</sup> The management of peptic ulcer disease has evolved over the decades, due to advances in operative techniques, bacteriology and pharmacology. While the recognition of role of H-pylori in peptic ulcer has resulted in paradigm shift in the management of uncomplicated peptic ulcer, debate continues about the appropriate management of perforated duodenal bulb and pre-pyloric ulcers.<sup>[5]</sup> Non-operative management of perforated peptic ulcer disease was first de-

scribed in 1935 by Wangenstein and is still applicable in specific conditions.<sup>[6]</sup> Mikulicz introduced closure of perforation by suture in space 1880 when he closed a gastric ulcer perforation.<sup>[7]</sup> Cellan Jones first described the use of pedicled Omental patch as a rapid method of treatment in perforated duodenal ulcer in 1929.<sup>[8]</sup> Graham also described the use of free graft of omental patch to repair the perforation in 1937.<sup>[9]</sup> Recently Sharma et al have described free omental plug in form of mushroom; serosal patch technique, for the closure of perforation greater than 2.5cm (giant peptic perforation).<sup>[10]</sup> The aim of this study is to find out the current trend in the topography of peptic ulcer perforation.

## PATIENTS AND METHODS

This retrospective study was carried out from July 2004 to June 2007 at the Department of Surgery, Unit II, Chandka Medical College Teaching Hospital, Larkana. All patients who were diagnosed as perforated peptic ulcer on laparotomy were included in the study. The case files of these patients were studied for patient particulars, clinical presentation, treatment, site of perforation and the data were analyzed. The diagnosis was based on history, supported with investigations like plain chest or pain abdominal radiographs demonstrating pneumoperitoneum, ultrasonography and other laboratory investigations. After these patients were diagnosed as suffering from peritonitis, they were resuscitated and stabilized; they were then assessed for their fitness to undergo surgery. Patients considered unfit for surgery underwent peritoneal

intubation and were managed conservatively, while explorative laparotomy was performed under emergency setting in rest of the patients. The site of perforation was identified, margins refreshed, biopsy was taken and perforation repaired by omentopexy. All patients were put on proton pump inhibitor (PPI) infusions postoperatively.

**RESULTS**

A total of 86 patients with peptic ulcer perforation were managed at the Department of Surgery Unit II during the period under review. There were 81 males and 5 females, with a male to female ratio of 16.2:1. The age ranged between 10 and 80 years (Table I). The prevalence was highest in fifth and sixth decades of life, each accounting for 23.25% cases, followed by fourth decade with 19.76% cases (Table I). Ten patients were rendered high risk for surgery and underwent peritoneal intubation and conservative management. Seventy six patients underwent explorative laparotomy under emergency setting. Out of 76 patients, 70 (92.10%) had single perforation in the stomach; 66 in antrum, 2 in the body and 2 at pylorus, while 6 (7.89%) patients had single perforation in the first part of duodenum (Table II).

**TABLE I:  
AGE AND SEX DISTRIBUTION OF PATIENTS**

| Age Ranges   | Male      | Female    | Total     | Percentage |
|--------------|-----------|-----------|-----------|------------|
| 10-19        | 02        | 00        | 02        | 2.35       |
| 20-29        | 12        | 00        | 12        | 13.95      |
| 30-39        | 16        | 01        | 17        | 19.76      |
| 40-49        | 17        | 03        | 20        | 23.25      |
| 50-59        | 20        | 00        | 20        | 23.25      |
| 60-69        | 13        | 01        | 14        | 16.27      |
| 70-80        | 01        | 00        | 01        | 1.16       |
| <b>Total</b> | <b>81</b> | <b>05</b> | <b>86</b> | <b>100</b> |

**TABLE II:  
SITES OF PERFORATION**

| Site of Perforation | No. of Cases | Percentage |
|---------------------|--------------|------------|
| Gastric             | 70           | 92.11      |
| Antrum              | 66           |            |
| Body                | 2            |            |
| Pylorus             | 2            |            |
| Duodenum            | 6            | 7.89       |

**DISCUSSION**

In this study of 86 patients presenting with peritonitis, 76 underwent laparotomy and 59 (77.63%) were diagnosed as suffering from peptic ulcer with perforation only on laparotomy without prior supporting evidence of having peptic ulcer. It has been claimed that most cases of perforated duodenal ulcer have no previous history of duodenal ulcer. In a study conducted by Jastaniah et al in which 66.7% patient were first shown the presence of duodenal ulcer by perforation [11]. Similarly in our study, none of the 6 patients with duodenal ulcer had previous history of peptic ulcer. In this study the highest incidence of perforated peptic ulcer was found in patients of 40-59 years of age. This is consistent with other studies carried out previously, where incidence was found to be highest in forties and there was male preponderance. [11,12] In our study, 92.10% perforations were found in the stomach and 7.89% in duodenum, with a duodenal to gastric ulcer ratio of 1:11.5. Among gastric perforations, majority (66/76) perforations were in the antrum and 2/76 were in the pylorus. Contrary to this, the ratio is 4:1 in studies from UK [13] and United States [14], and 7:1 in studies from India. [15] Peptic ulcer perforation leads to profound derangement of 'Milieu internale' especially if the perforation is old, the patient is in older age group, or there are concurrent medical problems. [10] In such sick patients, it is often not possible to perform an ulcer curative procedure which is not only time consuming but also requires a high level of surgical skill, which may not be available in emergency setting. Therefore a simple closure of perforation with omentopexy has been recommended in the literature and this procedure was also carried out in our study. The advantages being simple, dependable procedure, not requiring surgical expertise, and can be performed in a very short time even by a trainee general surgeon.

**CONCLUSION**

Peptic ulcer perforation is most common in stomach of middle aged males. The ratio of duodenal ulcer perforation to gastric perforation ulcer (1:11.5) is very much in contrast to other studies. Further studies are needed to evaluate the causes of this unusual ratio of gastric ulcer perforations in our setup.

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*AUTHOR AFFILIATION:*

**Prof. Aijaz A. Memon** (*Corresponding Author*)

Professor of Surgery  
Chandka Medical College (CMC)  
Larkana, Sindh-Pakistan.

**Dr. Afsar Ali Bhutto**

Assistant Professor of Surgery  
CMC, Larkana, Sindh-Pakistan.

**Dr. Ghulam Shabir Shaikh**

Assistant Professor of Surgery  
CMC, Larkana, Sindh-Pakistan.

**Dr. Amanullah Jokhio**

Associate Professor of Surgery  
CMC, Larkana, Sindh-Pakistan.

**Dr. Quratul-ain Soomro**

PG Trainee for FCPS-II  
CMC, Larkana, Sindh-Pakistan.