



Surgery

RETROSPECTIVE STUDY OF PERFORATED PEPTIC ULCER: A TERTIARY HOSPITAL BASED STUDY

Dr. Omprakash Raj

Assistant Professor, Department of General Surgery, CIMS, Bilaspur (C.G.)

Dr. Sumit Dhruve*

Assistant Professor, Department of Community Medicine, CIMS, Bilaspur (C.G.)
*Corresponding Author

ABSTRACT

Background: Peptic Ulcer Perforation is an important and common emergency. One of the most dreaded and common complication of peptic ulcers is perforation. Perforations account for about 5% of peptic ulcers.

Aim and Objectives: The aim of this study is clinical study of perforated peptic ulcer with objectives to assess the socio demographic distribution of peptic ulcer and to assess the clinical presentations and management of peptic ulcer perforation.

Methodology: This was a retrospective study conducted in Chhattisgarh Institute of Medical Sciences Bilaspur in year 2018-2019. Total 158 patients were taken, who were diagnosed and operated for perforated peptic ulcer. Detail history and clinical findings were taken from case file.

Result: a total 158 patients were studied, 76% were male, and 41-50 years age group was commonly affected. Alcohol consumption, old age, co-morbid illness and pre admission delayed was most common factor. Abdominal pain i.e. 100% was most common presentation. Duodenal perforation was common i.e. 38.60%. omentopaxy was preferable mode of repair perforation.

Conclusion: Perforation of peptic ulcer is one of the common surgical emergencies and requires awareness and prompt management and operation. It mostly affects young and middle aged males in the thirties. Simple closure with omentopaxy is standard procedure.

KEYWORDS : perforated peptic ulcer, duodenal ulcer, omentopaxy

INTRODUCTION:

Peptic Ulcer Perforation is an important and common emergency and is affecting human being from time immemorial. One of the most dreaded and common complication of peptic ulcers is perforation. Perforations account for about 5% of peptic ulcers. [11] Every year peptic ulcer disease affects 4 million people around the world.[1] It is widely prevalent in India and is more common among the population of south India than north India.[2,3]

Complications are encountered in 10–20% of these patients and 2–14% of the ulcers will perforate [4,5] Perforation is the second most common ulcer-related complication. During the early decades of the twentieth century ulcer perforation incidence increased greatly, and there was an epidemic of ulcer perforations situated in the duodenum of middle-aged men.[6,7] [7,8] While older age, co-morbidity, and use of NSAIDs or steroids are associated with mortality. Shock upon admission, preoperative metabolic acidosis, tachycardia, acute renal failure, low serum albumin level, high American Society of Anesthesiologists score, and preoperative delay >24 h were associated with poor prognosis.[9] Peptic ulcer perforations are more common in men than in women.[10] Peptic ulcer perforation is a life-threatening illness requiring immediate treatment. The treatment of choice is surgical conservative non-operative treatment being reserved for the rare patient unfit for surgery.

The aim of this study is clinical study of perforated peptic ulcer with objectives to assess the socio demographic distribution of peptic ulcer and to assess the clinical presentations and management of peptic ulcer perforation.

Aim: Retrospective study of perforated peptic ulcer: A Tertiary Hospital based study.

Objectives:

- To assess the socio-demographic distribution of peptic ulcer.
- To assess the clinical presentations and management of peptic ulcer perforation.

Methodology:

All patients who were diagnosed and operated for perforated peptic ulcers in our surgical units of Chhattisgarh Institute of Medical Sciences College and Hospital Bilaspur (C.G.) between January 2018 and September 2019 are included in the study. Total sample size was 158. Present study was retrospective study. The details of patients who presented from January 2018 to september 2019 were retrieved retrospectively. Pre designed and pretested proforma was used to fill the information of patients. Records of patients were obtained from

Medical Superintendent Office and operation theater of Hospital with due permission. A detailed case history, clinical and operative findings of the patient were evaluated from case file with special references to demographic characteristics, disease chronology, and history of NSAID, history of smoking or alcohol abuse. Investigations record viz. blood CBC, RBS, serum urea, creatinine, BT, CT, Electrolytes, serum amylase, HbsAg, HIV, urinalysis, ECG, X-ray chest P.A. view and X-ray flat plate abdomen in erect posture were also recorded from file. Diagnosis of PPU was made from history, clinical examination, abdominal distension, upper abdominal tenderness, rigidity and obliteration of liver dullness. Signs of peritonitis noted. Radiological investigation viz. X-ray chest and X-ray abdomen in erect posture showing free gas under the dome of diaphragm were taken. After surgery site of perforation type of surgery along with any complications and outcome of treatment were recorded from the case file. Ms Excel, Ms Word office and SPSS version 20 were used for data entry, tabulation and statistical analysis of data.

RESULT:

Table no.1 Socio Demographic profile of Respondent

	n=158	%
sex		
Male	121	76.6
female	37	23.4
age in years		
<10 years	1	0.63
11-20 years	21	13.2
21-30 years	28	17.72
31-40 years	30	18.98
41-50 years	41	25.94
51-60 years	22	13.92
61-70 years	12	7.59
>71 years	3	1.89
resident		
urban	59	37.3
rural	99	62.7
education		
illiterate	44	27.8
primary	44	27.8
middle school	37	23.4
higher sec school	33	20.9
socio economic class		
APL	59	37.3
BPL	99	62.7

Table no 2 Preoperative Co-morbid illness of Respondent

	n=158	%
alcohol consumption	75	47.5
NSAID	42	26.6
Smoking	66	41.8
Steroids	18	11.4
DM	48	30.4
HTN	44	27.8
Pre PUD	41	25.9

Table no 3 Clinical presentations of Respondent

Clinical Presentation	n=158	%
Abdominal Pain	158	100
Vomiting	136	86.1
Epigastric Pain	122	77.2
Abdominal Distention	108	68.4
Guarding	142	89.9
Rigidity	129	81.6
Liver Dullness	110	69.6
Peritonitis	110	69.6
Bowel Sound	45	28.5
Shock	34	21.5
INVESTIGATION		
Leucocytosis	142	89.9
Gas under diaphragm	123	77.8
Elevated Serum Amylase	78	49.4

Table no 4 Pre admissions delay of Respondent

pre admission delay	n=158	%
< 6 hrs	7	4.4
6-24 hrs	29	18.4
24-48 hrs	53	33.5
48-72 hrs	66	41.8
> 72 hrs	3	1.9

Table no 5 Site and size of perforation of Respondent

Site of Perforation	n=158	%
Gastric	59	37.3
Prepyloric	38	24.1
Duodenal	61	38.60
Size of Perforation		
<1 cm	101	63.9
1-2 cm	51	32.3
>2 cm	6	3.8

Table no 6 Type of repair

Type of Repair	n=158	%
Omentopaxy	124	78.5
Omental Plugging	9	5.7
Two layer Closure	12	7.6
Simple Abdominal Closure	7	4.4
Gastro Jejunostomy	6	3.8

Table no 7 Post Operative Complication of Respondent

Complications	n=158	%
Surgical Site Infection	135	85.4
Wound Dehiscence	66	41.8
Plural Effusion	12	7.6
Pulmonary Infection	8	5.1
Re Perforation	32	20.3
Entero-cutaneous Fistula	29	18.4
Acute Renal Failure	6	3.8
Mortality	16	10.1

In present study, out of the total of 158 patients, 76.6 % were male and 23.4% were female. Male and female ratio was 3.55:1. The majority of patients were belongs to in the age group 41-50 i.e. 25.94% followed by age group 31-40 i.e. 18.98%, and 1 patient was found in less than 10 year of age while 3 were found more than 71 years of age. Mean age being 40.44 years. In present study 99 patients belong to rural area i.e., 38.46%. 27.8% respondent were illiterate and maximum level of education was higher sec school (n=, i.e. 20.9%). 62.7% patients belongs to BPL socio economic class. **See table 1**

Majority of patients had history of alcohol consumption i.e. 47.5% followed by smoking i.e. 41.8%. 25.9% were known cases of peptic ulcer disease. 11.4% had a history of NSAID abuse. **See table 2**

The most common presenting complains were abdominal pain (100%), nausea and vomiting (86%). 21% of the patients presented with shock. **See table 3**

As for clinical signs 89.9% of the patients in this study had abdominal rigidity or guarding. Rebound tenderness found in 89.01% of the patients while 81.32% had elevated temperature. Obliteration of liver dullness was present in 69.6% of the patients. In total, 89.9% patients had leukocytosis, while 28.5% had no bowel sound. Plain x-ray abdomen in erect posture was done in all patients and gas under the diaphragm (pneumoperitoneum) was found in 77.8% of cases. While 49.4% patients showed elevated amylase levels. **See table 3**

Majority of patients presented between 48 to 72 hrs of onset of symptoms and that was 41.8%, followed by 24 to 48 hrs of onset of symptoms (3.5%) while 18.4% presented between 6 to 24 hrs of onset. **See table 4**

At the time of surgery, found that perforation of duodenal ulcer was commonest i.e. 38.60% and second commonest type of perforation was gastric ulcer perforation i.e. 37.3%. Out of 158 patients 63.9% had <=1cm size of perforation while only 3.8% had >2 c.m. size of perforation. **See table 5**

Omentopaxy was the most common surgical method which was used for closure i.e. 78.5% followed by 7.6% patients repaired by two layered sutures. While 3.8% patients had giant perforation (>2 c.m.), which was repaired by gastrojejunostomy. **See table 6**

Wound sepsis (85.4%) was the most common complication followed by wound dehiscence (41.8%). In total, 20.3% patients developed re-perforation, 18.4% complicated with enterocutaneous fistula. 7.6% patients developed in the post operative period, and 13 patients ultimately died, mortality rate was being 8%. **See table 7**

DISCUSSION:

Present study conducted in Chhattisgarh Institute of Medical sciences Bilaspur C.G. in the year 2018 -19. This was retrospective type of study. Several factors may influence the perforation of peptic ulcer. In our study PPU was more found in middle age group, from 30-50 years age and also mostly the patients were male, as was observed in other studies also. [13,14] **Hannan et al** in 2005, in their study of peptic perforation, reported that the mean age was 41 years, the highest incidence 34% was in the age group of 30-40 years. [12] Our findings are similar to the others studies. Male predominance may be attributed to use of alcohol and smoking. NSAIDs, *Helicobacter pylori* (*H. pylori*), physiological stress, smoking, corticosteroids and previous history of PUD are risks factors for PP. [15,16] In our study only 25.9% patients gave history of previously diagnosed PUD, but about 53% had history of occasional epigastric pain and dyspepsia. These patients were on irregular and inadequate treatment. Patients with no particular history of PUD are more likely to have PPU, as they take no treatment and dietary precautions. Similar findings were found in **Nishith M Paul Ekka et al.** [17]

Most of the patients present late for treatment, more than 24 hours of onset i.e. was 77%. This may be attributed to lack of awareness of the disease, patients take some medication for pain locally at home and continues to eat and also the clinicians they consult at smaller places may not had suspected perforation. They only reach to higher centers when the pain becomes unbearable.

All most all patients presented with abdominal pain (100%), epistric pain (77.2%), vomiting (86.1%). Clinical sign peritonitis, guarding, rigidity and absent bowel sound were found in majority of cases. **Everett et al** and **Nishith M Paul Ekka et al** found same findings. [17,18] Diagnosis was mainly established by history, clinical examination and radiological evidence of gas under the dome of diaphragm (pneumoperitoneum) found in X-ray chest. Post-operative mortality for PPU is estimated to be 6%-10%. [19] In our study post operative mortality was 8% and the factor that lead to death are old age more than 60 years, presence of shock, pre admission delay more than 48 hrs.

CONCLUSION:

Perforation of peptic ulcer is one of the common surgical emergencies

and requires awareness and prompt management and operation. It mostly affects young and middle aged males in the thirties. Simple closure with omental patches i.e. omentopexy give excellent results. They should be advised to avoid the common risk factors like too much spicy food, smoking, excess alcohol use, and indiscriminate use of NSAIDs and should seek proper medical advice in time. Early diagnosis, prompt resuscitation and urgent surgical intervention are essential to improve outcomes and minimize mortality.

REFERENCES:

1. Zelicson MS, Bronder CM, Johnson BL, Camunas JA, Smith DE, Rawlinson D et al: Helicobacter pylori is not the predominant etiology for peptic ulcers requiring operation. *Am Surg.* 2011, 77: 1054–1060.
2. Dogra JR. Incidence of peptic ulcer in India with special refer-ence to South India. *Indian J Med Res* 1941;29:665–76.
3. Malhotra SL. Peptic ulcer in India and its etiology. *Gut* 1964;5:412–6.
4. Bertleff MJ, Lange JF. Perforated peptic ulcer disease: A review of history and treatment. *Dig Surg* 2010;27:161–9.
5. Lau JY, Sung J, Hill C, Henderson C, Howden CW, Metz DC: Systematic review of the epidemiology of complicated peptic ulcer disease: incidence, recurrence, risk factors and mortality. *Digestion.* 2011, 84: 102–113.
6. Jennings D. Perforated peptic ulcer. *Lancet* 1940;1:444.
7. Svanes C, Lie RT, Kvåle G, Svanes K., Søreide O. Incidence of perforated ulcer in western Norway 1935–1990: Cohort or period dependent time trends? *Am J Epidemiol* 1995;141:836.
8. Horowitz J, Kukora JS, Ritchie WP. All perforated ulcers are not alike. *Ann Surg* 1989;209:693.
9. Møller MH, Adamsen S, Wojdemann M, Møller AM. Perforated peptic ulcer: How to improve outcome? *Scand J Gastroenterol* 2009;44(1):15–22.
10. Rogers EL, Mattingly SS, Bivins BA, Griffen WO Jr. Changing aspects of peptic ulcer disease. *South Med J.* 1981 Sep;74(9):1069-71.
11. Boey J, Wong J, Ong GB. *Ann Surg.* 1982 Mar;195(3):265-9. A prospective study of operative risk factors in perforated duodenal ulcers. A prospective study of operative risk factors in perforated duodenal ulcers. Boey J, Wong J, Ong GB.
12. Hannan A, Islam B, Hussain M, Haque MM, Kudrat-E-Khuda MI. Early complications of suture closure of perforated duodenal ulcer: A study of 100 cases. *Teach Assoc J.* 2005;18(2):122–6.
13. Nuhu A, Madziga AG, Gali BM: Acute perforated duodenal ulcer in Maiduguri. *Internet J Surg.* 2009;21:1.
14. Svanes C. Trends in perforated peptic ulcer: incidence, etiology, treatment and prognosis. *World J Surg.* 2000;24(3):277-83.
15. Zelicson MS, Bronder CM, Johnson BL, Camunas JA, Smith DE, Rawlinson D, Von S, Stone HH, Taylor SM. Helicobacter pylori is not the predominant etiology for peptic ulcers requiring operation. *Am Surg.* 2011;77:1054–1060.
16. Chey WD, Wong BC. American College of Gastroenterology guideline on the management of Helicobacter pylori infection. *Am J Gastroenterol.* 2007;102:1808–1825.
17. Nishith M Paul Ekka, Shital Malua Clinical study of peptic ulcer perforation in eastern India: An tertiary institution-based study International Journal of Medical Science and Public Health | 2016 | Vol 5 | Issue 12
18. Everett JS, Harkins HN, Olson HH, Moore HG(Jr), Merendino KA. Perforated Peptic Ulcer: A Study of 136 Cases in a County Hospital. *Ann Surg.* 1953 Nov; 138(5): 689–697.
19. Imhof M, Epstein S, Ohmann C, Röher HD. Duration of survival after peptic ulcer perforation. *World J Surg.* 2008;32:408–412.