

# A Clinical Study of the Spectrum of Gastro Intestinal Perforation Peritonitis in Rural Southern East Rajasthan

**Biram Chand Mewara<sup>1</sup>,  
Bheem Kumar Chourashiya<sup>1</sup>,  
Sanjay Porwal<sup>1</sup>,  
Varsha Porwal<sup>2</sup> and  
Ayushi Gupta<sup>3</sup>**

## Abstract

**Background:** Perforation peritonitis is the most common surgical emergency encountered India and all over world. The etiology of perforation peritonitis as seen in India is different from its western counterpart. The objective of the study was to highlight the spectrum of perforation peritonitis as encountered by us in rural southern east Rajasthan.

**Methods:** It is descriptive, retro-prospective study of 100 (hundred) cases of perforation peritonitis seen and treated over a period of two years.

**Results:** The maximum number of patients in our study was in age group of 31-40 years (23%) with a mean age was 40.29, years. There were 89 males (89%) as compared to 11 females (11%). The most common site of perforation in our series was gastroduodenal (81%) followed by small bowel perforation (13%), appendicular perforations (4%), colonic perforation (1%) and rectal perforation (1%). The rate of complication was 21%. Mortality rate was 7% and significantly high (100%) in patients coming to the hospital after 24 hours.

**Conclusion:** In contrast to western literature, where lower gastrointestinal tract perforation, upper gastrointestinal tract perforation constitute the majority of cases in India. The high rates of mortality among these who presented late divert attention to the fact early recognition of symptoms and referral of patients is very important in reducing mortality and morbidity.

**Keywords:** Peptic; Gastrointestinal perforation; Peritonitis; Exploratory laparotomy

- 1 Department of General Surgery, Jhalawar Medical College, Jhalawar Rajasthan, India
- 2 Department of Anatomy, Jhalawar Medical College, Jhalawar Rajasthan, India
- 3 Seth G S Medical College Mumbai, Maharashtra, India

**Corresponding author:** Sanjay Porwal

✉ drsanjayporwal@yahoo.com

Professor, Department of General Surgery, Jhalawar Medical College, Jhalawar Rajasthan, India.

**Tel:** 9414442137

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## Introduction

Perforation is the most disastrous complication of peptic ulcer and in spite of modern management it is still life threatening catastrophe (Hugh TB, 1990). Gastrointestinal (GI) tract perforations can occur due to various causes, and most of these perforations are emergency conditions, that require early recognition and timely surgical treatment [1]. The mainstay of treatment for bowel perforation is repair of perforation, surgically, Endoscopic, Laparoscopic and laparoscopic assisted procedures are now being increasingly performed instead of conventional laparotomy.

Perforation of a duodenal ulcer allows egress of gastric and duodenal contents into the peritoneal cavity with a resulting

initial chemical peritonitis. If continuing leakage of gastro duodenal contents, bacterial contamination of the peritoneal cavity can occur [2,3]. Peritonitis due to perforation of gastro intestinal hollow viscus is the common surgical emergency in India and the spectrum of disease is different from that found in the western world. The advent of proton pump inhibitors and helicobacter pylori eradications in the management of chronic peptic ulcer disease has reduced the operative treatment of this condition to its complications. But yet perforated duodenal ulcer remains a major life threatening complication of chronic ulcer peptic disease. Despite advances in surgical techniques, antimicrobial therapy and intensive care support, management of peritonitis continues to be highly demanding, difficult and complex [3].

### Risk factor

The patients coming to our hospital are from rural areas and low socio-economic status and for their tiredness they are abusing the painkiller (hari panni ki goli) with their empty stomach usually. Out of 100 cases 69 patients have history of the using painkiller within 15 days of perforation for any reason and usually present late to the hospital and thus leading to higher morbidity and mortality [4]. 83 patients out of 100 patients comes to this institute with low serum protein (<6 gm/dl).

### Material and Methods

This study was carried out in Department of Surgery of Jhalawar Hospital and Medical College, Jhalawar, the rural belt in the southern East Rajasthan. The education of population of this territory is below average, and the peoples are very unaware about their health. Most of them were abusing the painkiller (hari panni ki goli) with their empty stomach. Out of 100 cases 79 patients have history of the using painkiller within 15 days of perforation for any reason.

Here we do the descriptive epidemiological, prospective study of 100 patients of perforation peritonitis who were admitted in the Surgery Department of Jhalawar Hospital and Medical College, Jhalawar over a period of 2 years (April 2014 to March 2016). All patients of perforation peritonitis were operated and the medical report of patients were completed all patients were interviewed by the study investigator and operative data was taken from patients record [4].

Information was documented under the following headings:

- (a) Demographical data (age, gender).
- (b) Clinical features (Abdominal pain, distention of abdomen, vomiting, fever, cold peripheries, decreased urine output, constipation, dyspnea, duration of symptoms).
- (c) Clinical examination findings (Pulse, BP, Temperature, Respiratory rate, pedal edema, systemic examination of respiratory system, cardiovascular system, central nervous system and abdominal examination to see for tenderness, localized guarding, rigidity).
- (d) Investigations complete heamogram, blood urea, serum creatinin, sodium, potassium, total serum protein electrocardiogram, air fluid levels.
- (e) Type of surgical intervention.
- (f) Post-operative complications.

### Results

The mean age of presentation was 40.29 years. The maximum number of patients of gastrointestinal perforation were in the age group of 31-40 years (23 patients, 23%) followed by in the age group of 21-30 years (20 patients, 20%). There is shifting of age group of perforation one decade earlier (from 41-50 to 31-40), this may be because of use of non-steroid anti-inflammatory drugs (NSAID), because 79% of patients having the history of the using NSAIDs within 15 days of perforation or before. There

were 14 patients (14%) in the age group of less than 20 years and only 4 patients (4%) were in the age group of more than 70 years. Male outnumbered female. There are 89 males (89%) and as compared to 11 females (11%) M: F ratio was 8.1:1. Most of patients belong to the low socio-economic class (67%) while its incidence in the affluent class was very low (3%). Out of 100 patients only 34 patients had presented within 24 hours of onset of symptoms and the 66% patients had presented after 24 hours of onset of symptoms. Peptic (Gastro duodenal) perforations (81%) was the commonest, which was followed by small bowel perforation (13%) (jejuna 4, ileal 9), appendicular (5%), and one case of ceecal perforation (**Table 1**) pain was the most common complain present in all (100%) patients, followed by vomiting (74%), abdominal distension (64%), fever is present only in 23%, while constipation was present in one fourth of perforations (**Table 2**).

Out of 100 patients, 7 patients (7%) died in the post-operative period. All of these 7 patients had presented late, after the 48 hours of the onset of symptoms with poor general condition and preoperative shock, anemia, and uremia. None of them was belongs from affluent class.

Apart from 7 patients who have died out of 100 patients, the 14 patients had reported post-operative complications (**Table 3**). It was observed that rate of all complications which were reported were significantly higher in those patients who had small bowel perforation. The fever was present in 12 (85.71%) patients in small bowel perforation and 2 (14.29%) patients, in the patients with peptic perforation. Wound infection was observed 81.82% in small bowel perforation and 18.18% in peptic perforation. The incidence of feecal fistula was three times more common in patients with small bowel perforation as compare to the patients with peptic perforation. Burst abdomen [5] (35.71%) also observed four times more common in the patients who had perforation in small bowel. Only 2 patients out of 14 patients of complications have the serum protein level >6 gm/dl, otherwise all type of complications occurs in patients with low serum protein level <6 gm/dl.

The 9 patients, out of 14 patients in whom complications were noticed, were presented late after 48 hours of onset of symptoms. Only 17% patients have the serum protein level >6 gm/dl (**Table 4**).

### Discussion

This study was intended to evaluate the spectrum of gastrointestinal perforation peritonitis in the Jhalawar Hospital

**Table 1:** Site of perforation.

Site of perforation	Percentage (%)
Peptic	81
Ileal-	9
Jejunal	4
Appendicular	5
Ceecal	1
<b>Total</b>	<b>100</b>

**Table 2:** Chief complaints.

Chief complaints	Percentage (%)
Pain	100
Vomiting	74
distension of abdomen	64
Fever	23
Constipation	25

**Table 3:** Post-operative complications.

S.No	Complication	No of pt total	Peptic	Small bowel	Serum protein >6 gm/dl
1	Fever	14 (100)	2 (14.29)	12 (85.71)	02
2	wound infection	11 (78.57)	2 (18.18)	9 (81.82)	00
3	Feecal fistula	8 (57.14)	2 (25)	6 (75)	00
4	burst abdomen	5 (35.71)	1 (20)	4 (80)	00
5	post op adhesion	2 (14.29)	0	2 (100)	00

**Table 4:** Serum protein level.

S Protein level	No of Patients (%)
S Protein >6 mg/dl	17 (17%)
S Protein 4-6 mg/dl	63 (63%)
S Protein <4 mg/dl	20 (20%)

and Medical College Jhalawar, the rural belt in the southern East Rajasthan. In our study we found that among the patients presenting in the Jhalawar Hospital and Medical College Jhalawar with gastrointestinal perforation peritonitis, majority of patients were young males in the age group of 21-40 years, the youngest one was 10 years old which was jejunal. Most of the patients presented late, usually more than 24 hours of onset of symptoms, to the hospital. The commonest site of perforation was peptic (gastro duodenal) 81% [4-6], followed by small bowel (jejunum and ilium) 13%. Other sites i.e. appendix, colon, are less common site of perforation.

The results of our study are comparable with other published series in terms of demo graphy [4,5,7]. Here is shifting the age decades younger (from 41-50 to 31-40 years) in the present study. Pain is the most predominant feature and is present in almost all the patients [8]. In the present study all the patients had pain abdomen (100%), followed by vomiting (74%) and abdominal distention (64%). The constipation (25%) was present in 1/4<sup>th</sup> of all patients. Similar observations were made by Ghooi

and Panjwanial [8] and Desa et al. [9] in their studies. Most of the patients (64%) presented late, usually more than 24 hours of onset of symptoms, to the hospital. Though Buddhraj et al. [10], found wound infection as commonest complication followed by faecal fistula. In this study the wound infection (11%) is second commonest complication after fever (14%). Complications usually occur in perforation with small bowel rather than peptic and also with low serum protein.

## Conclusion

We had the study of 100 cases of perforation peritonitis in the Jhalawar Hospital and Medical College Jhalawar, the tribal belt in the southern East Rajasthan. The education of population of this territory is below average, and the peoples are very unaware about their health. Most of the people remain empty stomach and doing hard work and for their tiredness they are abusing the painkiller (hari panni ki goli) with their empty stomach. Out of 100 cases 69 patients have history the using painkiller within 15 days of perforation for any reason.

## References

- 1 Yeung KV, Change MS, Hasio CP, Huang JF (2004) CT evaluation of gastro intestinal tract perforation. *Clin Imaging* 28: 329-333.
- 2 Siu WT, Chau CH, Law BK, Tang CN, Ha PY, et al. (2004) Routine use of laparoscopic repair for perforated peptic ulcer. *Br J Surg* 91: 481-484.
- 3 Hainaux B, Agneessens E, Bertinotti R, De Maertelaer V, Rubesova E, et al. (2006) Accuracy of MDCT in predicting site of gastro intestinal tract perforation. *AJR Am J Roentgenole* 187: 1179-1183.
- 4 Jhobta RS, Attri AK, Kaushilk R, Sharma R, Jhobta A (2006) Spectrum of perforation peritonitis in India- review of 504 consecutive cases. *World J Emerg Surg* 1: 26.
- 5 Ohmann C, Yang Q, Hau T, Wacha H (1997) Peritonitis study group of the Surgical Infection Society Europe. *Eur J Surg* 163: 53-60.
- 6 Ramchandra ML, Jagdesh B, Chandra SBC (2007) Clinical study and management of secondary Peritonitis due to perforated Hollow viscous. *Arch Med Sci* 3: 61-68.
- 7 Adesunkanmi AR, Badmus TA (2006) Pattern of Antibiotic therapy and clinical outcome in acute generalized peritonitis in semi urban and rural Nigerians. *Chemo therapy* 52: 69-72.
- 8 Ghooi AM, Punjwani S (1978) Acute abdominal emergencies: Clinical overview. *Ind J Surg* 140: 182-189.
- 9 Desa LA, Mehta SJ, Nandkarni KM, Bhalerao RA (1983) Peritonitis: A study of factors contributing to mortality. *Ind J Surg* 593-604.
- 10 Budhraj SN, Chidambaram M, Perianayagam WJ (1973) Peritonitis (an analysis of 117 cases) *Ind J Surg* 35: 456-464.
- 11 Edino ST, Yakubu AA, Mohammed AZ, Abubakar IS (2007) Prognostic factor in typhoid ileal perforation. A prospective study of 53 cases. *J Natl Med Assoc* 99: 1042-1045.
- 12 Agarwal N, Saha S, Shrivastav A, Chumber S, Dhar A, et al. (2007) Peritonitis: 10 years' experience in single surgical unit. *Trop Gastroenterol* 28: 117-120.
- 13 Hugh TB (1990) Perforated peptic ulcer. In Schwartz S-Ellis HA, eds *Maingots Abdominal Oprations*. (9<sup>th</sup> edtn) Appleton & Lange, Connecitiut, USA. p: 627-645.