



CLINICAL STUDY OF PERFORATION PERITONITIS AT TERTIARY HOSPITAL IN WESTERN U.P.

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ABSTRACT **INTRODUCTION :** Gastrointestinal perforation particularly upper part, constitute the commonest cause of emergencies not only in India but throughout the world, leading to sizable number of morbidity and mortality.

MATERIAL AND METHOD: Prospective analysis of 615 patients (n=615) in Teerthanker Mahaveer Medical College and Research center was done between July 2013 to December 2016 All cases of GI perforation with peritonitis were included in this study. Exclusion criteria being perforation secondary to trauma, corrosive and post operative peritonitis due to leakage. After confirming the clinical diagnosis of perforation peritonitis and adequate resuscitation patient were prepared for surgery and 96% of them underwent exploratory laparotomy. After identification, assessing the perforation and condition of patient, appropriate procedure like primary closure, ileostomy, resection with end to end anastomosis etc. were performed, a complete post operative care was given to all patients. Post operative complications if any were noted.

RESULT: Maximum patient were of age between 35-45 years, predominantly males with a M:F ratio of 3:1, main complaint was pain abdomen with distention and tachycardia(97%), 93% cases had gas under right dome of diaphragm. Out of all cases of perforation 62% were duodenal perforation whereas 18.3% were ileal.

CONCLUSION: In a tertiary set up of western U.P. of all GI perforation, peptic ulcer perforation (65%) has been found to be most common in contrast to the reports of eastern U.P. where enteric perforation were more common. Despite extensive use of PPI and other drugs, peptic ulcer perforation remains the major cause of morbidity. Delay in surgery because of late reporting to hospital is the most common factor affecting the morbidity and mortality along with advanced age and comorbidities.

KEYWORDS : Peritonitis, Perforation

INTRODUCTION

Gastrointestinal perforation particularly its upper part, constitute the commonest cause of emergencies not only in India but through out the world, leading to sizable number of morbidity and mortality. Despite developments in pre and post operative care, PPI and, various recent drugs, it still remains the common surgical emergency, encountered by surgeons. The causes of perforation and its etiological factors in India differ significantly¹⁶. Majority of patients report late in hospital due to various unknown reasons, many of them, because of social problem, economical status and this leads to undue delay, and land in septicemia and other complication of perforation peritonitis.²⁶

Present study was conducted in our tertiary hospital the Teerthanker Mahavir medical college Moradabad U.P., in department of surgery patients admitted in period of 3.5 years between July 2013 to Dec 2016

MATERIAL AND METHODS

This retrospective study includes 615 (n=615) patients admitted in our hospital mostly through emergency section. It includes all cases who were found to have peritonitis due to perforation of any part of GIT. The exclusion criteria being all cases of primary perforation due to trauma, corrosive, and post operative peritonitis specially due to leakage.

All cases in this series were thoroughly studied with respect to clinical faculties at the time of presentation, detailed history including the history of drugs, comorbid conditions, radiological and biochemical investigation, operative finding and first operative course.

After conforming the clinical diagnosis of perforation peritonitis and receiving adequate resuscitation patient were taken for surgery and 94% of them were underwent exploratory laparotomy.

On laparotomy the site and size of perforation were noted and managed by appropriate procedure. All patients were treated accordingly either in SICU/ general ward depending on various parameter like, respiratory rate, oxygen saturation, blood pressure and hydration status, under cover of broad spectrum antibiotic.

Patients were allowed orally after return of bowel sounds and passage

of flatus and stool, ambulation were encouraged as soon as possible, drain tube removed after three to four days when drain fluid was insignificant. Four patients in recent month were laparoscopically treated and result were encouraging.

RESULTS

In our retrospective study on 615 patients for period of four years the highest number of patients below 35-45 year age and mean age was 39.8 ± 12.1 years as shown in table no. 1

TABLE NO. 1

| AGE | CASES |
|--------------|-------|
| <15 | 9 |
| 15-25 | 18 |
| 25-35 | 79 |
| 35-45 | 94 |
| 45-55 | 215 |
| 55-65 | 108 |
| 65 and above | 92 |

SEX - Majority were male 68.8% at a Male: Female ratio of 3:1

EXCLUSION CRITERIA

Respiratory disease, Diabetes mellitus, Renal disease, Hypertension, Tuberculosis, Malignancy

TABLE NO. 2

Symptoms and signs -

| | |
|--------------------------------|-----|
| Abdomen pain and distension | 96% |
| Nausea and vomiting | 48% |
| Fever | 89% |
| Shock | 61% |
| Tachycardia | 97% |
| Positive H/O NSAIDS (>6 MONTH) | 71% |

Patient reported with various symptoms and sign like abdomen pain, distention, nausea, vomiting etc have been tabled in the Table no. 2.

TABLE NO. 3

INVESTIGATION

| | |
|----------------------------|-----|
| X ray abdomen | 93% |
| Serum Electrolyte | 98% |
| Dehydration | 83% |
| De arranged renal function | 28% |
| Impaired Oxygen saturation | 46% |

TABLE NO. 4**Site of perforation**

| | | |
|------------------|-----|-------|
| Duodenum | 361 | 62% |
| Gastric Anterior | 18 | 3.6% |
| Posterior | 3 | |
| Jejunum | 5 | 0.86% |
| Ileum | 106 | 18.3% |
| Appendix | 62 | 10.7% |
| Colon | 14 | 7.0% |
| Gall bladder | 9 | 1.5% |

TABLE NO.5

In majority of patients 62% primary repair with Grahms omental patch repair was shown in table no. 5

Procedure

| | | |
|--|-----|-------|
| Primary closure with Grahm's omental patch repair | 362 | 62.6% |
| Laparoscopic closure with omental patch repair | 4 | |
| Primary closure with feeding jejunostomy with omental patch repair | 31 | 10.7% |
| Primary repair with Resection anastomosis | 39 | 5.9% |
| Resection with Ileostomy/ Colostomy | 67 | 10.1% |
| Cholecystectomy | 9 | 1.5% |
| Appendectomy | 62 | 30.0% |
| Primary repair | 68 | 10.9% |

TABLE NO. 6**Complication**

| | | |
|-------------------------------|-----|-------|
| Wound infection | 187 | 28.2% |
| Burst abdomen | 27 | 8.6% |
| Leakage from anastomosis site | 8 | 1.2% |
| Septicemia | 46 | 6.9% |
| Renal failure | 16 | 2.4% |
| DVT | 11 | 1.6% |
| Abdominal collection | 68 | 10.2% |
| Chest infection | 158 | 23.9% |
| Mortality | 37 | 5.5% |

Most common complication was wound infection 28% followed by burst abdomen shown in table no. 6

DISCUSSION

Peritonitis due to perforation of any hollow viscus is one of the commonest surgical emergency encountered by surgeons. Present study was conducted in our tertiary hospital of Teerthanker Mahaveer medical college, 615 patient reported with male and female ratio being 5:1. Our observation are in line with those of Jhobta et al¹² and mukherjee et al^(3,11) & who noted ratio 7:1 but in sharp contrast to earlier studies & Raiker et al²³. ulcer perforation was rare disease in 19th century however its incidence increases greatly at turn of 20th century but since then, incidence of perforation is falling because introduction of H2 receptor blocker and PPI, there is sharp decrease in elective as well as emergency surgery in western world. Age of patient ranges from less than 15 to above 65 year, majority being in age group of 45-55 years. Majority of patient in tropical countries particularly in India are younger age group as compared to western countries¹⁶. Etiological factors associated show a wide graphical variation not only in world and India but even in Uttarpradesh as 50% cases of perforation were due to infection like Thyphoid and Tuberculosis Khanna et al¹, but in western uttarpradesh Peptic perforation being the commonest Mukherjee et al^(3,4), Bali et al¹. In spite of wider use of PPI, incidence of peptic perforation is not coming down, is a matter of research about dietary habits, stress conditions, westernization of food habits and it needs proper health education. as well Perforation peritonitis requires urgent and prompt resuscitation measures, patients need intensive surgical care for dehydration and dearranged electrolytes to achieve

good post operative outcome. General condition of patient depends on time of reporting to hospital after the first symptom appears, In our setup majority of patients report to casualty after 48-72 hrs and some even late with gross dyseletronemia, without pulse and non recordable blood pressure thus could not be operated, have not been included in the study.

The clinical presentation reporting to casualty, depends besides time, on the site of perforation. Abdomen pain and distention were the commonest symptoms in 96% patient, fever 89%, shock in 61%, followed by tachycardia, nausea and vomiting, 71% had positive history of taking NSAID like Steroids and aspirin. These observations were similar to other studies 93% of patients in the study had gas under right dome of diaphragm with air fluid levels on plain x ray abdomen but Memmon et al⁶ in his study called this finding as of dubious reliability, but Bali et al is in line with our observation⁶.

Kaur et al⁷ observed that high mortality was due to delay in reporting hospital

Peritonitis and intra abdominal infections are not synonym, peritonitis denotes inflammation of peritoneum from any cause while intra abdominal infection is by bacteria

Peritonitis when develops fully passes in three phases²⁵

Phase I – Involves rapid removal of contaminants from peritoneal cavity into systemic circulation.

Phase II - Involves synergistic interaction between aerobes and anaerobes

Phase III - defence attempt by host complements and phagocytes, attempt by host to localize infection in fibrous exudates

The clinical manifestation of peritonitis are fluid shift and metabolic disturbance resulting in tachycardia, increase in respiration rate due to volumetric, intestinal, diaphragmatic, and pain reflexes, metabolic acidosis, increase secretion of aldosterone, ADH and catecholamines subsequently alter the cardiac output and respiration

Like wise in our country, in this part of western Uttar Pradesh proximal UGI perforation were 6 time more common than those of distal intestinal perforation but in contrast to eastern Uttar Pradesh study at Varanasi Khanna et al^(2,9) who observed as Typhoid and Tuberculosis being the most common causes of distal perforation at that era of time, well supported by Bali et al¹ as 22% cases due to Typhoid and Tuberculosis. Noon et al¹⁰, Texas reports as trauma being the commonest cause of perforation, thus showing high incidence of trauma in developed countries, also reported by Bose et al from Chandigarh².

Our observation was in contrast to western studies and also from Khanna et al but matches with national figure that the proximal perforation were 6-7 times or even more are common. the difference from western world studies being because of infection and infestation in developing countries like ours, where diversities exist in the same province, as thyphoid and Tuberculosis being two main causes of perforation in eastern uttar pradesh, but morbidity mortality and severity of infection with passage of time with improved antibiotic, investigation, and sanitation has changed and may be in future pattern can become uniform. Mannheim peritonitis index (MPI) was developed in 1983 by Wacha and Linder²⁵, as a prognostic index in 1253 patients with peritonitis in which 20 possible risk factors were considered and out of these only 8 were proved to be of prognostic relevance and were entered into MPI.

Acid peptic disease remain the common symptom in majority of patients followed by NSAID complication. Ratio of duodenal and gastric perforation in our study was almost 4:1, in contrast 15:1 to earlier studies.

In our study most common cause of perforation was duodenal ulcer, matches with observation Chakma et al¹⁷, Moreover studies for western countries, perforation due to malignancy was at a higher rate accounting for 15-20%. This is in sharp contrast to various Indian studies (about 2%), we also observed about 1.9% perforation due to malignancies. Bali, Menon^(1,11,6)

Over all morbidity data show that maximum number of cases in post operative period were of wound infection (28.2%) , but due to improved preoperative management in our set up mortality rate was not much significant ranging about 5.5% (37 patient) matching with rate of Bali et al¹ , Vyas et al² but 71.4% was reported by Raikar et al²³

CONCLUSION

Upper gastro intestinal perforation remains the commonest cause of perforation peritonitis in India , different from western world where trauma being the leading cause. Peptic ulcer perforation being the most common cause in spite of advances and improvement in modern medical facilities, wider use of PPI, health education

Advanced age , associated co morbidities , late reporting to hospitals, delays in surgery were some of factors affecting morbidity and mortality

In our study upper GI perforation was possibly because of massive use of NSAID as many practitioners spacing in remote rural areas massively use these drugs without knowledge of the complication. Besides septicemia and wound infection were major cause of mortality.

Early and prompt resuscitation measures, correction of electrolytes and hydration under cover of broad spectrum antibiotics are the pillars to reduces morbidity and mortality.

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