Section: General Surgery

Original Research Article

STUDY OF ACUTE PERITONITIS SECONDARY TO HOLLOW VISCOUS PERFORATION IN MAHARASHTRA POPULATION – RETROSPECTIVE STUDY

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Abstract

Background: Despite a better understanding of patho-physiology advances in diagnosis, surgery antimicrobial therapy and intensive care support peritonitis remains potentially fatal hence proper surgical approach is necessary to avoid complication. **Materials and Methods:** 53 (fifty three) patients of different age groups having peritonitis due to hallow viscous perforation as surgical emergencies patients treated with laparotomy, anatomical locations, signs and symptoms, abdominal x-ray, USG was studied apart from haematological study. **Result:** Clinical manifestations included vomiting, fever, history of pain, distension of abdomen, dehydration, Gaurding and rigidity, obliterated bowel sound. Highest number of perforation was observed in Duodenum 28 (52.8%), followed by Ileum 13 (24.5%) and least in jejunum and colan 2 (3.72%). The highest pain was diffuse 33 (62.2%), followed by epigastric 11 (20.7%) and least site of pain were right lumber and right hypochandrium, 2 (3.77%) The pnumo-peritoneum was present in 38 (71.6%) omental patch, closure was 30 (56.6%) appendectomy 8 (15%) simple closure 6 (11.3%), resection and anastomosis loop Ilcostomy were 5 (9.4%) and mortality was 7 (43.2%). **Conclusion:** It is concluded that, clinical manifestation depend on duration of abdominal infection, the site of perforation and the general condition of the patient. Rapid surgical source control, modern intensive care and sepsis therapy may reduce the morbidity and mortality.

INTRODUCTION

Peritonitis is due to hollow visceral perforation commonly encountered in surgical practice, peritonitis is the inflammation of the serosal membrane that lines the abdominal cavity and the organs contained therein.[1,2] Peritonitis is often secondary to infection into the otherwise sterile peritoneal environment through perforation of gastro intestinal tract or a chemically irritating material such as gastric acid from a perforated ulcer.[3] Frequent causes of secondary bacterial peritonitis include perforation due to peptic ulcer disease, acute appendicitis, ileal perforation due to typhoid and tuberculosis, jejunal perforation most often due to blunt trauma, colonic perforations secondary to closed loop obstruction or malignancy.[4] Hence attempt was made to evaluate the different types of peritonitis at different age group with various aetiologies.

MATERIALS AND METHODS

53 (Fifty-three) patients aged between 20 to 60 years visited to surgery department (OPD) Prakash institute of medical science and research Islampur Dist Sangli, Maharashtra were studied.

Inclusive Criteria

The patients diagnosed as peritonitis secondary to hallow viscous perforation were selected for study.

Exclusion Criteria

Patients having peritonitis secondary to oesophageal perforation and reproductive tract perforations (genitor-urinary perforations), patient's previously undergone GIT surgery were excluded from study.

Method:

Every patient was examined thoroughly, after taking detailed history. The diagnosis and examination was done with history, clinical features, USG, x-ray abdomen erect posture to support the diagnosis was studied.

Peritonitis secondary to hallow viscous perforation underwent emergency laparotomy. The site of perforation, its pathological condition and the amount was noted. The procedure adapted in the

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management were omental patch closure, simple closure, open appendectomy resection anatomises and loop ileostomy.

The duration of study was December 2015 to January 2019

Statistical Analysis

The observed clinical manifestations site of perforations and types of surgeries were classified with percentage. The statistical analysis was performed in SPSS software. The ratio of males and females was 3:1.

RESULTS

Image 1: Radiograph showing free gas under diaphragm

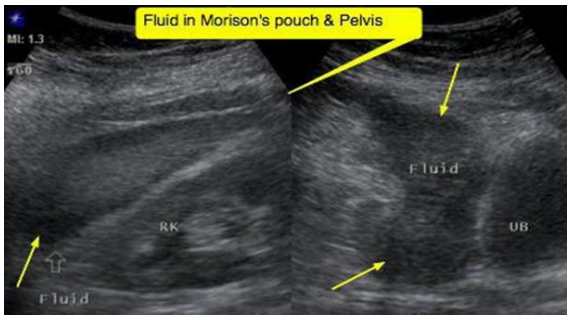

Image 2: Ultrasound images showing free fluid in Morrison's pouch and Pelvis

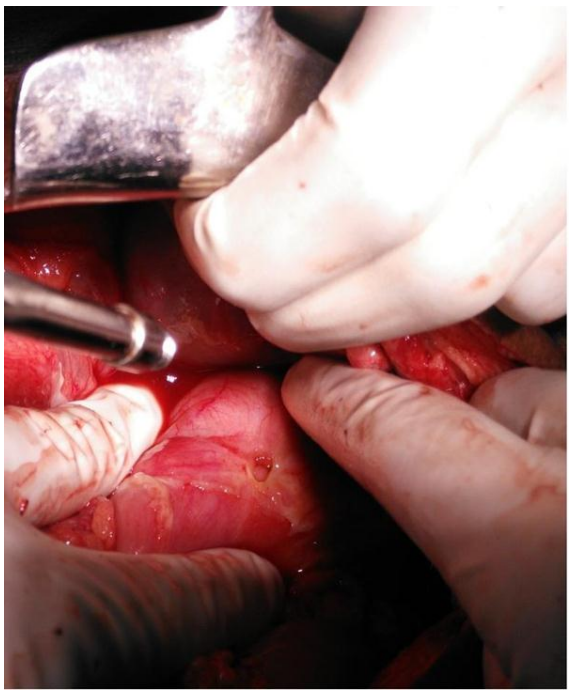

Image 3: Duodenal Perforation

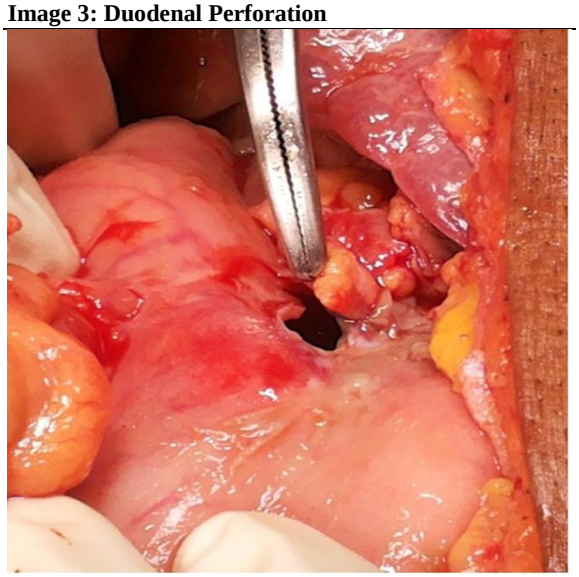

Image 4: Gastric perforation

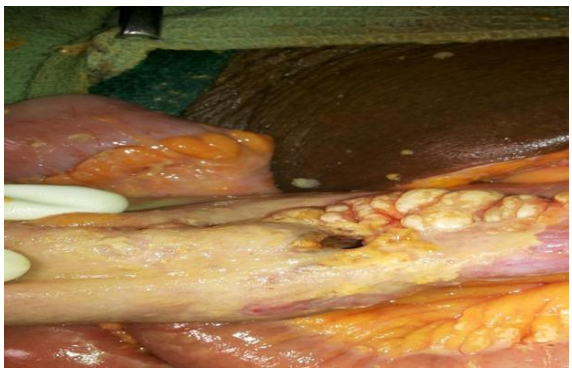

Image 5: ILEAL perforation in tuberculosis

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Image 6: Ileal perforation in typhoid

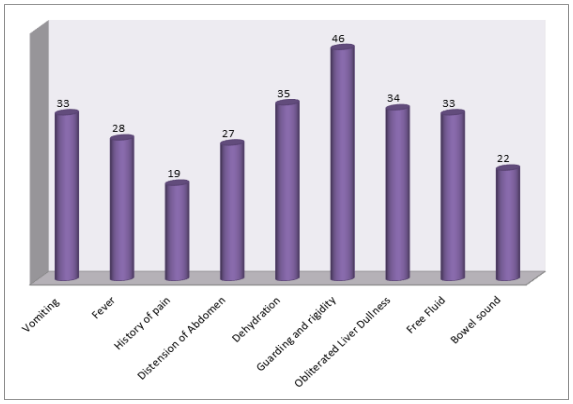

Figure 1: Clinical manifestations in peritonitis patients

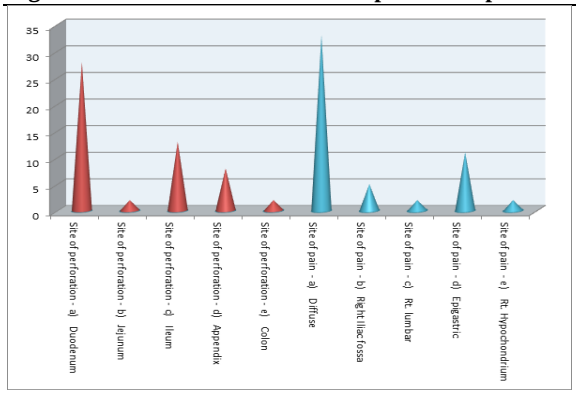

Figure 2: Study of site of perforation and site of pain

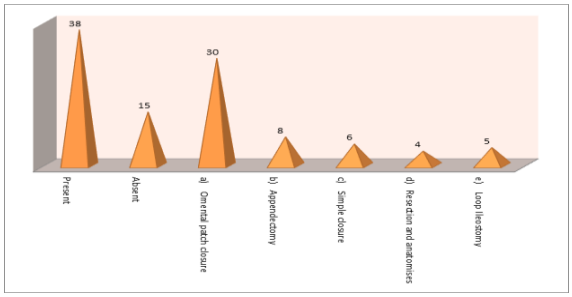

Figure 3: Study of pneumo peritoneum in x-ray abdomen and type of surgery performed

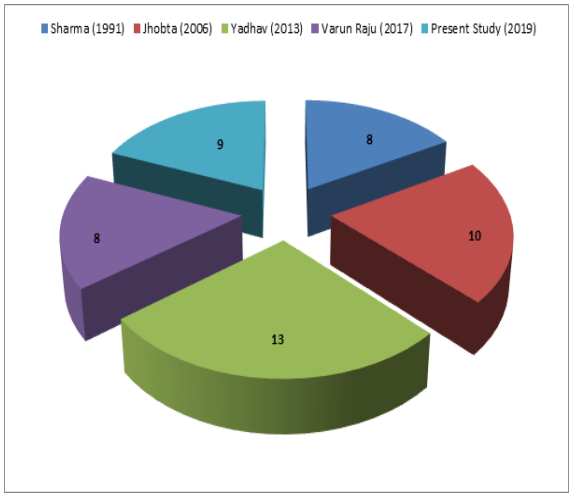

Figure 4: Comparison of Mortality with preview studies

[Table 1] Clinical Manifestations in peritonitis patients – 33 (62.2%) had frequency of vomiting, 28 (52.8%) had fever, 19 (35%) had history of pain, 27 (50.9%) had distension of abdomen, 35 (66%) had dehydration, 46 (86.7%) had guarding and rigidity, 34 (64%) had obliterated liver dullness, 33 (62.2%) had free fluid, 22 (41.5%) had Bowel sound.

Table 1: Clinical manifestations in peritonitis patients (No. of patients: 60)

Sl. No	Clinical Manifestation	Frequency	Percentage (%)
1	Vomiting	33	62.2
2	Fever	28	52.8
3	History of pain	19	35
4	Distension of Abdomen	27	50.9
5	Dehydration	35	66.0
6	Guarding and rigidity	46	86.7
7	Obliterated Liver Dullness	34	64
8	Free Fluid	33	62.2
9	Bowel sound	22	415

Table 2: Study of site of perforation and site of pain

Sl. No	Anatomical site involved	Frequency	Percentage (%)
1	Site of perforation Duodenum	 28	 52.8
	Jejunum	02	3.77
	Ileum	13	24.5
	Appendix	8	15
	Colon	2	3.77
2	Site of pain Diffuse	 33	 62.2

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	Right Iliac fossa	5	9.43
	Rt. lumbar	2	3.72
	Epigastric	11	20.7
	Rt. Hypochondrium	2	3.77

Table 3: Study of pneumo peritoneum in x-ray abdomen and type of surgery performed

Sl. No	Pneumo-peritoneum	Frequency	Percentage (%)
1	Present	38	71.6
2	Absent	15	28.3
	Total	53	100
3	Type of surgery Omental patch closure	 30	 56.6
	Appendectomy	8	15
	Simple closure	6	11.3
	Resection and anatomises	4	7.5
	Loop Ileostomy	5	9.4

Table 4: Comparison of Mortality with preview studies

Sl No	Name of the Author	Year	Mortality
1	Sharma	1991	8
2	Jhobta	2006	10
3	Yadhav	2013	13
4	Varun Raju	2017	8
5	Present Study	2019	9

[Table 2] Study of site of perforation and site pain
(A) Site of perforation – 28 (52.8%) had Duodenum, 2 (3.7%) had jejunal perforation, 13 (25%) Ileum, 8 (15%) had Appendix perforation, 2 (3.7%) had perforation of colon.
(B) Site of pain – 33 (62.2%) had diffuse pain, 5 (9.43%) had pain in right iliac fossa, 2 (3.7%) had pain in right lumbar, 11 (20.7%) had pain in Epigastric, 2 (3.7%) had pain right hypochondrium.
[Table 3] Study of pneumo-peritoneum in x-ray abdomen and type of surgery perform
(A) Prevalence of pneumo-peritoneum 38 (71.6%) had presence of pneumo-peritoneum
(B) Types of surgery performed – 30 (56.6%) omental patch closure, 8 (15%) appendectomy, 6 (11.3%) simple closure, 4 (7.5%) resection and anastomosis, 5 (9.4%) had Loop Ileostomy
[Table 4] Comparison of mortality occurred in present study with previous authors – present study had 7 (13.2%) which is more or less agreement with previous studies.

DISCUSSION

Present study of acute peritonitis to hallow viscous perforations in Maharashtra Population – Clinical manifestations included 33 (62.2%) frequency vomiting, 28 (52.8%) fever, 19 (35%) history of pain, 27 (50.9%) Distension of abdomen, 35 (66%) dehydration, 46 (86.7%) guarding and rigidity, 34 (64%) of obliterated liver dullness, 33 (62.2%) Free fluid, 22 (41.5%) Bowel sound [Table 1].

(a) The Site of perforations were 28 (52.8%) duodenum, 2 (3.7%) jejunum, 13 (24.5%) Ileum, 8 (15%) appendix, 2 (3.7%) colon
(b) Site of pain included – 33 (62.2%) diffuse, 5 (9.43%) right iliac fossa, 2 (3.7%) right lumbar, 11 (20.7%) epigastric, 2 (3.7%) right hypochondria [Table 2].
(a) Presence of pnemo peritoneum was 38 (71.6%).
(b) Type of surgery were 30 (56.6%) omental patch closure, 8 (15%) appendectomy, 6 (11.3%) simple closure, 4 (7.5%) resection and anastomosis, 5 (9.4%) loop Ileostomy [Table 3] and mortality rate was 7 (13.2%) [Table 4] [Image 1-6]. These findings were more or less in agreement with previous studies.[5-7]

Perforation (word derived from "perforates" a latin word to bore through) is defined as abnormal opening in an organ or viscous. All patients of perforative peritonitis were treated as surgical emergency. Pre-operatively all patients had broad spectrum antibiotic coverage, nasogastric suction and management of fluid and electrolytic imbalance and oxygen supplementation when necessary. Anaemic patients required blood transfusion. Post-operatively parental antibiotics were continued after those oral antibiotics were given for 5 days.
In present study of peritonitis which is a life threatening complications of peptic ulcer disease Diagnosed is made clinically and confirmed by the presence of pneumo peritoneum on radiographs. The success of proton pump inhibitors and the eradication of H. Pylori have virtually eliminated the need for elective ulcer surgery. Perforated peptic ulcer is a common surgical emergency and major cause of death in elderly patient's perforated peptic ulcer is becoming common in older patients and associated with a higher incidence of recent consumption of non-steroidal anti-inflammatory drugs (NSAIDS).
Spontaneous ileal perforation is a serious complication of a variety of disease; these perforations are mostly because of foreign bodies, radiotherapy, drugs, crohn's disease, malignancies and congenital malformations. Although tuberculosis is an important cause, the most

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important is typhoid fever. Enteric perforations are more common in males than females.[8] Enteric perforation usually occurs in second and third week of fever. Absence of liver dullness was observed in all the cases of ileal perforations.

In the diagnosis of perforated appendicitis, gray scale ultrasound is also valuable despite the fact that the perforated appendix may not be visualised. Acute mesenteric ischemia is an abdominal catastrophe that carries high mortality rates, Leukocytosis and elevated serum lactate levels are common. At laparotomy, the appearance of the bowel wall may vary from pallor to haemorrhagic infarction.[9]

Post-operative morbidity was towards higher side because of late presentation to the hospital, poor build and malnourishment, associated anaemia and dehydration at presentation. Most common complications developed by patients were lower respiratory tract infection.[10] The next most common post-operative complication was wound infection which may be sustained by the fact that surgical incision site gets contaminated and most of the patients are malnourished and anaemic. Hence mortality rate was 9 (15%) in the present study.

Limitation of Study

Owing to tertiary location of research centre, small number of patients and lack of latest techniques we have limited findings and research.

CONCLUSION

The study of acute peritonitis secondary to viscous perforation still has mortality and morbidity. The atypical clinical presentation and delay in presentation can make diagnosis difficult. In addition to the availability of modern radiological methods, a careful clinical examination is still the most important way to achieve rapid, accurate diagnoses. Surgical attitude is rapid control contamination, abdominal lavage and abdominal drainage. In low risk patient, surgeons prefer a single definitive operation but it is reasonable to use staged procedures and “second look” re-laparotomy in patients who are at high risk. There is no way to prevent peritonitis, however, efficient surgery, modern anaesthesia and intensive care support may offer the chance of decreased morbidity and mortality of the intra-abdominal infection.

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