

Clinical Profile and Outcome Assessment of Management of Perforation Peritonitis

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Abstract

Aim: The aim of the present study was to assess the clinical profile, management of perforation peritonitis and its surgical outcomes.

Methods: The study was carried out in the setting of tertiary care hospital in the Department of General Surgery, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India. All patients admitted with perforation peritonitis were included in the study. A total of 500 patients with perforative peritonitis were included in the study admitted from February 2017 to January 2019.

Results: The underlying aetiology of the perforation peritonitis among the patients was evaluated and it was observed that acid peptic disease was the common cause accounting for 35% of the patients, followed by typhoid (16%), trauma (13%), obstruction (11%) and tuberculosis (6%). In about 15% of the cases the etiology was not defined. The commonest site of perforation was found to be duodenum accounting for 36% of the cases followed by appendicular (20%), Ileum (16%), Jejunal (13%), large bowel (11%) and gastric (4%). All the patients were followed up for a period of 6 months and the surgical outcome of the patients was assessed where in the mortality rate among the patients was at 10% and the rate of complication was at 48% and remaining 42% of the patients recovered completely. Among the complications wound infection (32%) and respiratory complication (23%) were common, followed by abdominal collection (10%), Obstruction (14%), diselectrolymia (8%), burst abdomen (5%) and anastomotic leak (5%).

Conclusion: GI perforations are one of the most common surgical emergencies. Duodenal perforations are most common. Ileal perforations have the highest morbidity and mortality. Mortality depends on the age and general condition of the patient, associated pre-operative co- morbidities, site of perforation and etiology.

Keywords: Perforation peritonitis, surgical outcome, etiology, complication, mortality

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Introduction

Peritonitis is known from the days of Hippocrates who described the Hippocratic facies that is seen in the terminal stages of diffuse peritonitis, which is even recognised today as a most valuable prognostic sign. [1] Perforative peritonitis is the most common surgical emergency in general surgical practice. [2] The Indian aetiological spectrum of perforation continues to differ from that of the Western world and there is paucity of data regarding its aetiology, prognostic indicators, morbidity and mortality pattern. In the majority of cases, delayed presentation to the hospital occurs with well-established generalized peritonitis and varying degree of septicaemia. [3-4] The signs and symptoms are typical and therefore a clinical diagnosis of peritonitis is usually possible. The

mainstay of treatment is adequate resuscitation, antibiotics and surgical intervention. [4-5]

Historically, peritonitis was considered an absolute or relative contraindication for laparoscopic surgery (LS) due to multiple factors and arguments. [6-7] Firstly, the theoretical risk of hypercapnia due to increased absorption of carbon dioxide is directly related to increased intraabdominal pressure (IAP), infection, and inflammation. Secondly, the risk of toxic shock syndrome due to increased IAP results in the passage of toxins and bacteria into the general circulation. Lastly, the surgeons opted not to use laparoscopic therapy for perforative peritonitis due to inflamed and friable bowel, limited working space, and difficulty manipulating the bowel. [8-9]

However, greater acceptance of laparoscopy in recent years has encouraged surgeons to use it due to its proven benefits of less pain, short hospital stays, faster recuperation, and decreased morbidity [10-12]. Performing diagnostic laparoscopy in cases of suspected viscous perforation or peritonitis has the advantage of identifying an occasionally unexpected pathology. If favourable abdominal pathology is discovered, it can be managed and repaired laparoscopically. However, if laparoscopy-assisted conversion is to be conducted, it has the advantage of a more selective and shorter laparotomy incision. According to the European Association for Endoscopic Surgery (EAES) guidelines, in cases of the peritonitis abdomen, laparoscopy is no longer an absolute contraindication. [13-15]

The aim of the present study was to assess the clinical profile, management of perforative peritonitis and its surgical outcomes.

Materials and Methods

The study was carried out in the setting of tertiary care hospital in the Department of General Surgery, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India.

Study subjects: All patients admitted with perforative peritonitis were included in the study. A total of 500 patients with perforative peritonitis were included in the study admitted from February 2017 to January 2019.

Sampling: Non-random purposive sampling was adopted to select patients

Study period: Study was done by collecting data retrospectively from the year 2017 to 2019

Data variables: Among the selected patients socio demographic profile, the clinical profile, surgical interventions undertaken and the outcome including complications was noted. All the patients were followed for 6 months.

The collected data with respect to various variables was entered into an excel sheet and after appropriate data filtering, the data was transferred and analysed using SPSS version 20 appropriate descriptive statistics was used to analyse the findings and to draw the inferences.

Results

Table 1: Clinical profile of the patients

Parameter	Frequency	Percent
Etiology		
Acid peptic disease	180	35
Trauma	65	13
Malignancy	15	3
Obstruction	55	11
Typhoid	80	16
Tuberculosis	30	6
Not defined	75	15
Perforation site		
Gastric	20	4
Duodenal	180	36
Jejunal	65	13
Ileal	80	16
Appendicular	100	20
Large bowel	55	11
Investigative findings		
Pneumoperitoneum on xray	465	93
Air fluid level on xray(>4)	85	17
Dyselectrolytemia	235	47
Raised leucocyte count >14k	415	83
Raised renal function tests	205	41
Low haemoglobin	60	12

The underlying etiology of the perforative peritonitis among the patients was evaluated and it was observed that acid peptic disease was the common cause accounting for 35% of the patients, followed by typhoid (16%), trauma (13%), obstruction (11%) and tuberculosis (6%). In about 15% of the cases the

etiology was not defined. The commonest site of perforation was found to be duodenum accounting for 36% of the cases followed by appendicular (20%), Ileum (16%), Jejunal (13%), large bowel (11%) and gastric (4%).

Table 2: Surgical outcome among the patients

Outcome		Frequency	Percent
	Complication	240	48
	Mortality	50	10
	Recovered	210	42
Type of complication			
	Wound infection	160	32
	Dyselectrolemia	40	8
	Respiratory complication	115	23
	Abdominal collection	50	10
	Obstruction	70	14
	Burst abdomen	25	5
	Anastomotic leak	25	5

All the patients were followed up for a period of 6 months and the surgical outcome of the patients was assessed where in the mortality rate among the patients was at 10% and the rate of complication was at 48% and remaining 42% of the patients recovered completely. Among the complications wound infection (32%) and respiratory complication (23%) were common, followed by abdominal collection (10%), Obstruction (14%), dyselectrolemia (8%), burst abdomen (5%) and anastomotic leak (5%).

Discussion

Veillon and Zuber (1893) showed multi microbial infection in peritonitis. [16] In 1907 Pawlowsky described bacterial translocation of from the gut. [17] The first time the exact bacteriology of peritonitis was reported was in 1922 by Weinberg. [18] Murphy JB advocated early operation, with no sponging or irrigation, closure with drainage and rectal infusion (Murphy drip). [19]

The underlying etiology of the perforation peritonitis among the patients was evaluated and it was observed that acid peptic disease was the common cause accounting for 35% of the patients, followed by typhoid (16%), trauma (13%), obstruction (11%) and tuberculosis (6%). In about 15% of the cases the etiology was not defined. More commonly the perforations involve the proximal part of the gastrointestinal tract; [20,21] this being in contrast to studies from the western countries, where perforations are common in the distal part. [22,23] Etiological factors also show a wide geographical variation. According to a study from India, infections formed the most common cause of perforation peritonitis. [24] In contrast to this, Noon et al. [8] from Texas in their study reported only 2.7% cases due to infections. [25]

The commonest site of perforation was found to be duodenum accounting for 36% of the cases followed by appendicular (20%), Ileum (16%), Jejunal (13%), large bowel (11%) and gastric (4%). All the patients were followed up for a period of 6 months and the

surgical outcome of the patients was assessed where in the mortality rate among the patients was at 10% and the rate of complication was at 48% and remaining 42% of the patients recovered completely. Among the complications wound infection (32%) and respiratory complication (23%) were common, followed by abdominal collection (10%), Obstruction (14%), dyselectrolemia (8%), burst abdomen (5%) and anastomotic leak (5%). Study by Chaiya et al [26] reported a surgical site infection rate of 48%. [26]

Conclusion

GI perforations are one of the most common surgical emergencies. Duodenal perforations are most common. Ileal perforations have the highest morbidity and mortality. Mortality depends on the age and general condition of the patient, associated pre-operative co-morbidities, site of perforation and etiology.

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