

Evaluation Of Secondary Peritonitis A Record Based Study

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Abstract: Background: Secondary peritonitis is the most common indication for exploratory laparotomy in India. However the etiology of perforation varies from the western world. The objective of this study is to assess the etiology, presentation, management and post-op outcome of patients operated for secondary peritonitis at our hospital. Method: Hospital based retrospective study of 50 cases of secondary peritonitis during the period of 2015-2018. Pediatric patients, primary peritonitis and anastomotic leak patients were excluded from the study. Result: Maximum number of patients were in age group of 11-30 years with male: female =4:1. Out of 50 cases the most common clinical presentation was abdominal pain in all of the patients. Most common site of perforation was peptic perforation (44%), followed by small bowel perforation (36%), appendicular perforation (10%) and colonic perforation (10%). Overall rate of complication was 25%. Conclusion: In our setup the major etiology of perforation was infective and presentation of patients immediately after first symptom and timely surgical intervention resulted in good prognosis and less post-op complications. Complications in our study were wound infection (22%), electrolyte imbalance (20%), pulmonary complication (12%), septicemia (12%), intestinal obstruction (2%), fecal fistula (2%), burst abdomen (2%) and mortality (16%). [Astha Trivedi Natl J Integr Res Med, 2020; 11(1):22-25]

Key Words: Secondary peritonitis, exploratory laparotomy

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Introduction: Laparotomies are one of the most common surgeries on an emergency basis.¹ The common findings encountered during exploratory laparotomy includes secondary peritonitis following hollow viscous perforation or trauma.^{2,3} However the etiology of perforation varies from the western world.

Peritonitis is defined as an inflammation of the peritoneal cavity. Secondary peritonitis is peritonitis secondary to perforation of intraperitoneal hollow viscera. Even at the beginning of new millennium, peritonitis presents as a common life threatening condition associated with high mortality and morbidity. Peritonitis patients presented as acute abdomen.⁴

Rapid surgical control, modern intensive care and antibiotic therapy may offer the chance of decreased morbidity and mortality of the intra-abdominal infections. This study has been carried out to evaluate various modes of clinical presentation, per-op findings, morbidity and mortality patterns of specific types of secondary peritonitis presented at VSGH, Ahmedabad.

Materials And Methods: This is a record based retrospective analysis of 50 patients of secondary peritonitis, done over a period of 3 years 2015-2018 at VSGH, Ahmedabad. This study has been approved by the Institutional Ethical committee.

Informed consent of all the patients who participated in the study was taken.

Exclusion Criteria: Primary peritonitis and anastomotic dehiscence, Cases having incomplete records and Age < 12 years (patients sent to pediatric surgery) were excluded from this study. Cases were studied with respect to clinical features at the time of presentation, comorbid conditions, radiological investigations, operative findings and post-operative course.

Results: In our study maximum number of patients were seen in 11-30 years of age group (20 cases-40%), closely followed by 31-50 years of age group (19 cases-38%)(Table-1). Among 50 surgically proven secondary peritonitis patients, 80% (40) were males and 20% (10) were females, with a male to female ratio of 4:1(Table-2). Free gas under diaphragm was found in 40(80%) cases out of 50 cases in erect abdominal x-ray.

Discussion: Gastro-intestinal perforations causes considerable morbidity and mortality and requires surgical intervention. The type and degree of contamination depends on site, size and duration of perforation and also on the physiologic state, including the time from the last meal, mechanical bowel preparation before operation, coexistent disease and the presence or absence of an ileus or bowel obstruction with accompanying bacterial growth. The anatomic

Table-1 Age Distribution

Age Group	Peptic Perforation	Enteric Perforation	Appendicular Perforation	Small Bowel Perforation	Caecal Perforation	Colon Perforation	Duodenal Perforation	Total
11-30	5	6	3	5	-	-	1	20
31-50	8	1	1	4	2	2	1	19
51-70	4	-	1	1	-	1	-	7
71-90	3	-	-	1	-	-	-	4
Total	20	7	5	11	2	3	2	50

Table-2 Sex Distribution Of Various Etiology

Etiology	Male		Female		Total	
Peptic perforation	15	37.5%	5	50%	20	40%
Proximal Small bowel Perforation(traumatic-2)	9	22.5%	2	20%	11	22%
Ileal perforation(traumatic-1)	6	15%	1	10%	7	14%
Perforated appendix	4	10%	1	10%	5	10%
Colonic perforation(traumatic-1)	3	7.5%	-	-	3	6%
Duodenal perforation	2	5%	-	-	2	4%
Caecal perforation(traumatic-2)	1	2.5%	1	10%	2	4%
Total	40	100%	10	100%	50	100%

Table-3 Operative Procedures Performed

Operative Procedure	No. Of Cases.
Suturing of perforation with omentopexy.	22(44%)
Primary suturing	13(26%)
Perforation suturing with proximal stoma	6(12%)
Appendectomy	5(10%)
Resection and anastomosis	4(8%)

Table-4 Postoperative Complications And Mortality

Complication	Present study	N. Baba guru Prasad et al ⁵	Rajandeep Singh Bali et al ⁶
Wound infection	22%	8.6%	31.25%
Intestinal obstruction	2%	4.3%	-
Fecal fistula	2%	2.2%	1.5%
Pulmonary complications	12%	15.20%	16.75%
Septicemia	12%	3.3%	-
Electrolyte imbalance	20%	-	21.75%
Burst abdomen	2%	3.3%	13.75%
Mortality	16%	23.3%	7%

site of perforation significantly affects the type and burden of enteric contamination as microbiological colonization increases from proximal to distal. Our study was intended to evaluate the spectrum of secondary peritonitis compared with other studies.

It is commonly seen in a younger age group in the tropical countries(11-30 yrs. in our study-Table:1) as compared to the studies in the west.⁷⁻⁹In western countries more cases were due to

malignancies whereas in our study it was infectious etiology.¹⁰

In our study peptic perforation was the commonest etiology(44%) (Table:2), which is comparable with Rajandeep Singh Bali et al study(44.75%) and N Baba Guru Prasad et al study(40%) and cases were treated with suturing of perforation with omentopexy (Table:3).

Patients had symptoms of acid-peptic disease, history of analgesics intake and addiction to tobacco in any form.

Second most common cause was small bowel perforation (traumatic-3, infective-15) (Table:2) among which enteric perforation, nonspecific perforation and TB are commonly seen and history of fever was present in all the cases of enteric perforation, among which 1 patient required proximal stoma with perforation suturing, 4 patient undergone resection and anastomosis and rest 13 were treated by primary suturing of perforation (Table:3).

Appendicular perforation (10%) was detected on USG or CT-scan as there was no free gas in erect abdominal x-ray. Appendectomy was done in all the cases. Out of 5 colonic perforations both caecal and 1 colonic perforation were traumatic and 2 had infective etiology (Table:2), and all cases were treated with suturing and proximal stoma (Table:3).

In our study *E.coli*, *klebsiella*, *proteus* and *enterococcus* were commonly isolated organisms. Thorough peritoneal lavage, placement of drains and broad spectrum antibiotics followed by anti-biotics according to fluid or pus culture report helped to control and eliminate infective focus.

Most common presentation in our study was pain (100%), followed by vomiting (82%), abdominal distention (54%), fever (46%) and constipation (42%), which are comparable with Biram Chand Mewara et al study of 100 cases.¹¹

Most common post-operative complication was wound infection (22%), followed by electrolyte imbalance (20%), pulmonary complications (12%), septicemia (12%), intestinal obstruction (2%), burst abdomen (2%) and fecal fistula (2%) and mortality in our study was 16%, which is comparable with studies of N Baba Guru Prasad et al⁵ and Rajandeep Singh Bali et al⁶ (Table-4). Mortality in our study was mainly due to septicemia and MODS. Factors like late presentation, co-morbid conditions of patients, history of addiction, and site of perforation also affected mortality.

Conclusion: Present study reflects Indian scenario of secondary peritonitis. Patient may be optimized as far as the situation allow for better outcome following surgery. Mainstay of

treatment include fluid resuscitation, anti-biotics, source control-timely surgical intervention, organ system support and nutrition. Recent advances in availability of anti-biotics, novel anesthetic agents and sophisticated equipments have played a major role to decrease morbidity and mortality in patients of secondary peritonitis.

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