

A Study of Etiology, Management and Outcome of Peritonitis Due to Perforation of Hollow Abdominal Viscera

Kumawat Jamna L.^a, Mathur Prakash N.^b, Parihar Suman^a, Mehta Fateh S.^b

^aAssociate Professor ^bProfessor, Dept. of General Surgery, Geetanjali Medical College & Hospital, Udaipur, Rajasthan 313002, India.

Abstract

Background: Perforation Peritonitis is one of the common and Life Threatening Surgical Emergency all over the world. The outcomes in India and in our region i.e., Udaipur, Rajasthan are no exception to it. The most common etiology in our region is perforation of diseased Viscera, which is different from western world [2,5]. The present study was carried out to evaluate the etiology, pathology, site of perforation, and surgical management, post operative complications and mortality.

Keywords: Perforation; Peritonitis; Hollow Viscera; Omentopexy.

Introduction

Perforation Peritonitis is one of the common and life threatening Surgical Emergencies, all over the world. The most common etiological factor in our region, unlike the other parts of the world, is perforation of diseased viscera [2,5,7].

The study was carried out to evaluate Etiology, surgical management, morbidity and mortality of Peritonitis due to perforation of hollow viscera in Geetanjali Medical College & Hospital, Udaipur, Rajasthan.

Perforation due to peritonitis presents as acute abdomen, Clinical examination, supported by investigations like abdominal X-ray, ultrasonography and / or CT scan confirm the hollow

visceral perforation. Management almost always mandates exploratory laparotomy. If the patient is in critical or moribund state, drainage of peritoneal cavity under local analgesia may be attempted when the patient is being resuscitated in the intensive care unit.

Material & Methods

The study was carried out from April 2011 to March 2016 (5 years). Total number of 553 cases of Perforation Peritonitis was managed during this period in department of surgery at Geetanjali Medical College and Hospital, Udaipur, Rajasthan.

All patients presented to emergency or surgical outdoor (OPD) as acute abdomen. The patients were clinically evaluated, investigated, resuscitated and were admitted in Surgical ward / intensive care unit (ICU) of Geetanjali Medical College and Hospital, Udaipur. Patients with primary Peritonitis or other causes else than perforation of hollow viscera were excluded.

All the above patients were further evaluated and perforation of hollow abdominal viscera was confirmed by suitable imaging like, X-ray [2], ultrasonography, and/or computed tomography. Those who are fit to undergo surgery were subjected to exploratory laparotomy peritoneal toilet and drainage.

The adjunctive procedures like appendicectomy, simple closure of perforation, with or without omentopexy, resection anastomosis, etc were added as needed. All the resected specimens were sent for histopathological examination. Those who were too sick to tolerate surgery were treated by drainage of the peritoneal cavity under local analgesia while being resuscitated in ICU.

Corresponding Author: Prakash Narayan Mathur, Professor, Dept. of General Surgery, Geetanjali Medical College & Hospital, Udaipur, Rajasthan 313002, India.
E-mail: drpnmathur2@gmail.com

Received on 31.07.2017, Accepted on 28.08.2017

Results

In this study of 553 cases there were 466 male (84.27%) and 87 female (15.73%). Majority of our patients were from rural area 457 (82.64%) and 96 were from urban area. The patients in the age group of 21-50 years were mostly affected, 328 (59.31%) as shown in Table 1 & 2. The commonest site involved in our study was Duodenum 210 (37.97%) followed by ileum 179 (32.36%), rest were as in Table 3. The commonest cause was peptic ulcer, 235 (42.49%)

followed by traumatic, 191 (34.53%) and least common cause was perforation due to tuberculosis i.e., 12 (2.16%) as shown in Table 4. Exploratory laparotomy was done in all cases except in 2 in whom abdominal drain was put under local anaesthesia in Surgical ICU for the very critical condition and both ended in death. Resection and anastomosis was performed in 61 cases, ileostomy or colostomy in 51 cases, appendectomy in 57 and rest of all were treated with simple perforation closure with or without omentopexy, peritoneal toilet and abdominal drain, as shown in Table 9.

Table 1: Age & sex

Age	Male	Female
0 - 20	52 (74.28%)	18 (25.72%)
21 - 50	281 (85.67%)	47 (14.33%)
> 50	133 (85.81%)	22 (14.19%)
	466 (84.27%)	87 (15.73%)

Table 2: Rural / Urban

Residence	Male	Female
Rural	389 (85.72%)	68 (14.88%)
Urban	77 (13.92%)	19 (3.43%)
	465 (84.08%)	88 (15.92%)

Table 3: Site of Perforation

Viscera	Male	Female
Duodenal	191	19
Gastric	24	01
Appendicular	46	11
Ileum	135	44
Jejunal	55	07
Colon	14	04

Table 4: Causes

Peptic	235	42.49%
Traumatic	191	34.53%
Appendicular	57	10.30%
Typhoid	56	10.12%
Tubercular	12	2.16%

Table 5: Simple Closure of Perforation

Peptic	235
Traumatic	112
Typhoid	31
Tubercular	02

Table 6: Operative Procedure in Typhoid Perforation

Simple Closure	31	55.35%
Resection with end to end Anastomosis	12	21.42%
Ileostomy	11	19.64%
Abdominal drainage under local Anaesthesia	02	3.57%

Table 7: Site of Traumatic Perforation

Ileum	76	56.17%
Jejunum	36	26.86%
Colon	18	13.43%
Deodenum	04	2.98%

Table 8: Complications

Wound Infection	171	30.92%
Wound Dehiscence	07	1.26%
Respiratory Problems	39	7.05%
Faecal Fistula	07	1.26%
Septicaemia	34	6.14%
Renal Problem	28	5.06%
Electrolyte Inbalance	44	7.95%
Death	29	5.24%
Total	359	64.88%

Table 9: Surgical Procedure

Type of Operations	No. of Patients	Percentage (%)
Simple Closure	382	69.08
Appendectomy	57	10.30
Resection & Anatomize	61	11.03
Ileostomy/Colostomy	51	9.22
Abdominal drainage under L.A.	02	0.36

Discussion

Peritonitis due to perforation is a common surgical emergency and timely management and surgical intervention can reduce morbidity and mortality. Peptic perforation was the commonest site; same observation was reported in almost all studies as was in author's previous study [8,10].

The advances in medical treatment of acid peptic disease [APD] have resulted in dramatic change in cure & elective surgery, however the complications like perforation is still common and its only remedy for it is timely surgical intervention [9].

It was noticed that patients who had perforation on full stomach had spillage of food particles and bile causing serious contamination and septic shock. The perforation of proximal gastro-intestinal Tract (GIT) was more common than distal GI tract perforation, as reported in our study and other studies also. Duodenal ulcer perforation (210 patients i.e., 37.97%) was the commonest cause in our study and agrees with the findings in other studies. Gastric perforation was found in 25 (4.5%) [5,9].

Appendicular perforation was found in 57 patients (10.3%) and a similar observation was found in another study [11]. All Appendicular perforations were managed by appendectomy.

Typhoid perforation was noted in 56 patients (10.12%) but in Prajakt, the incidence reported was remarkably high (42%) [10]. Traumatic perforation was common in jejunum, ileum and colon but rarely in duodenum. The traumatic perforation was found in 191 (34.53%). Our institute is situated at N.H. and caters most of the trauma cases of the city, hence the

incidence found was higher [4,5]. In western world perforation due to penetrating trauma was common (48%) [7].

Tubercular perforation now a day is not very common, in our study we found 12 patients (2.16%) with tubercular perforation. Though abdominal tuberculosis is the sixth common site for extra pulmonary involvement, but the incidence of perforation is less frequent, because of anti tubercular treatment [3]. Colonic perforation occurred in 18 patients (3.25%) whereas colonic perforation is second important cause in western world, because of diverticular disease [7].

Simple closure, Peritoneal toileting with drainage was the commonest procedure done in our study (382 - 69.08%). Resection and anastomosis done in 11.03%, Ileostomy/colostomy in 9.22% and only abdominal drainage was done in 2 patients (0.36%), who came in profound shock and later expired. In this study wound infection was the most common complication and occurred in 30.92%. This is comparable to other studies [1]. Respiratory infections occurred in 7.05%, Electrolyte imbalance in 7.95%, Septicemia occurred in 6.14% and was mainly due to late arrival of patients and gross peritoneal contamination.

Enterocutaneous fistula developed in 7 patients (1.26%) of which 4 were in cases operated for typhoid ileal perforation and 2 fistulae developed in traumatic jejunal perforation. In one patient of tubercular perforation in whom local resection and anastomosis was done, there was faecal fistula. Death occurred in 29 patients and was mainly due to septicemia and renal [12]. Mortality increased in elderly patients with co-morbidity [13].

Conclusion

Perforation of a hollow viscera resulting in Perforation Peritonitis is a common surgical emergency needs proper and prompt diagnosis, resuscitation and urgent surgical intervention. Most common site of perforation in our study was duodenum and was due to peptic ulcer disease. The second common cause of perforation in our study was trauma. The most common site of traumatic perforation was Ileum. Most of the hollow visceral perforations were amenable to simple suture closure with or without omental patch. The mortality rate in our series was 5.24%.

Key Message

Perforation of hollow abdominal viscera causing peritonitis is a common surgical emergency. In our study, it was found that perforation of diseased viscera was more frequent and peptic perforation was the most common cause. Emergency surgical intervention and timely management is the corner stone of successful management and outcome

References

1. Ahmer A Memon, Faisal G Siddiqui, Arshad H Abro, Ahmed H Agha, Shahzadi Lubna and Abdul S Memon. An audit of secondary peritonitis at a tertiary care university hospital of Sindh, Pakistan. World Journal of Emergency Surgery 2012;7:6.
2. Dorairajan LN, Gupta S, Deo SVS, Chumber S, Sharma L: Peritonitis in India-A decade experience. Tropical Gastroenterology 1995;6(1):33-38.
3. Gupta RL: Abdominal Tuberculosis. In GI Surgery Annual Volume 2. Edited by: Chattopadhyaya TK. New Delhi: Saku Printing House; 1995:51-60.
4. Gupta S, Kaushik R. Peritonitis - the eastern experience. World J Emerg Surg. 2005 April 26;1:13 doi: .1186/1749-7922-1-13. 2005; PMID 16759427.
5. Jhobta RS, Attri AK, Kaushik R, Sharma R, Jhobta A. Spectrum of perforation peritonitis in India - review of 504 consecutive cases. World J Emerg Surg. 2006; 1:26.
6. Kumawat J.L., Mathur P.N, Mathur K., Mehta F.S.: A Retrospective Study of Blunt Trauma Abdomen: JEMDS 2015;59:10263-10269.
7. Malangoni MA, Insui T. Peritonitis the western experience. World J emerg surg. 2006; 1:25. Doi: 10.1186/1749-7922-1-25.
8. Mathikere Lingaiah Ramachandra, Bellary Jagadesh, Sathees B.C. Chandra. Clinical Study and Management of Secondary Peritonitis due to Perforated Hollow Viscous: Arch Med Sci 2007 March 1:61-68.
9. Mathur P.N., Kumawat J.L., Joshi C.P., Parihar S., Retrospective Study of Perforated Peptic Ulcer a Surgical Emergency : Int. Surg J. 2017 Jan;4(1):1-5.
10. Patil PV, Kamat MM, Hindalekar MM. Spectrum of perforative peritonitis-a prospective study of 150 cases. Bombay Hospital J 2012;54(1):38-50.
11. Sharma L, Gupta S, Soin AS, Sikora S, Kapoor V: Generalized peritonitis in India - The tropical spectrum. /ap/surg 1991;21:272-77.
12. Shrestha K, Paudel BR, Shah LL, Mukhia R, Dahal, Haque MA, Maharjan SB, Choudhary J. Spectrum of perforationk peritonitis-260 cases experience. Post graduate Medical Journal of NAMS. 2010;10(2):29-32.
13. Sujit M. Chakma, Rahul L. Singh, Mahadev V. Parmekar. K.H. Gojen Singh, Buru Kapa, K.H. Sharatchandra Singh, Amenla T. Longkumer, Santosh Rudrappa. Spectrum of Perforation Peritonitis. Journal of Clinical and Diagnostic Research, 2013 Nov;7(11):2518-2520.