Journal of Cardiovascular Disease Research

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 10, 2023

Original research article

Peritonitis secondary to hollow VISCUS perforation: Post-operative complications

[1]Dr. Mallikarjuna M, [2]Dr. Ramesh Ainapure, [3]Dr. Gaurav Jain, [4]Dr. Darshan A M

[1]Associate Professor, Department of General Surgery, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

[2,4]Assistant Professor, Department of General Surgery, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

[3]Senior Resident, Department of General Surgery, Shimoga Institute of Medical Sciences, Shivamogga, Karnataka, India

Corresponding Author:
Dr. Darshan A M

Abstract

Secondary peritonitis is brought on by bacteria that are discharged into the peritoneal cavity when a hollow VISCUS is perforated. The polymicrobial nature of the illness and the occurrence of mixed aerobic and anaerobic pathogens as the most prevalent offending bacteriologic combination are the two crucial factors that have the most impact on the management of peritonitis. Depending on the site of perforation and pathological condition, appropriate procedure was adopted for its management, that includes omental patch closure, simple closure, open appendectomy, resection anastomosis and loop ileostomy. Postoperatively patients was examined for the development of any complications. The mortality rate in our study was 17% of the total 100 cases presenting with perforation. Mortality was high among duodenal perforation patients, as it was the most common site. Of the total 71 cases with duodenal perforation 14 expired during which the patient presented with pain abdomen for a duration of less than 3 days was five and those within 24 hours were 9. Sepsis was the endpoint in all of these cases.

Keywords: Hollow VISCUS perforation, post-operative complications, peritonitis

Introduction

90% of patients who underwent nonoperative treatment for intraabdominal infections by the end of the 19th century died. Since 1930, peritonitis has been managed according to surgical methods that were established during the first two decades of the 20th century [1].

The principles which have by remain unchanged are [2]:

I. Elimination of the source of infection.
II. Removal of infected material from peritoneal cavity.

The mortality of peritonitis decreased to 40-50% when these ideas were widely used in its treatment. The 1970s and 1980s saw the emergence of further mortality drop trends. 25 The decrease is due to improved knowledge of the disease's bacteriology, the availability of potent antibiotics that can effectively combat both the anaerobes and aerobes that cause peritonitis, as well as improved knowledge of how organ dysfunction occurs in sepsis and effective ICU treatment [3]. With the advent of new issues, the downward trend seems to have reached a plateau. For instance, microbial resistance issues in a compromised host can cause peritonitis that is susceptible to a variety of antimicrobials. A higher death rate results from such an event [4].

Significant improvements in the disease's antimicrobial therapy have been made as a result of the understanding obtained about the bacterial genesis of the illness. The majority of the bacterial causes of peritonitis were discovered by Freidrich and Heyde in the 1920s, but until the 1970s, most surgeons were unaware of the crucial role that anaerobes played in the disease [5, 6].

Secondary peritonitis is brought on by bacteria that are discharged into the peritoneal cavity when a hollow viscus is perforated. The polymicrobial nature of the illness and the occurrence of mixed aerobic and anaerobic pathogens as the most prevalent offending bacteriologic combination are the two crucial factors that have the most impact on the management of peritonitis [7, 8].

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 10, 2023

Methodology

- **Study design:** Prospective observational study.
- **Sample size:** Taking prevalence to be 10% and precision to be 6% and applying the formula 4pq/l2, sample size is 100.

Methodology

Informed, written consent was taken from the participants in the local language. Each patient presenting with peritonitis was examine thoroughly after taking a detailed history. The diagnosis was confirmed by history, clinical features and erect abdominal X-ray. Cases of peritonitis secondary to hollow viscus perforation undergoing emergency laparotomy was assessed for the site of perforation, its pathological condition and the amount of peritoneal contamination. Depending on the site of perforation and pathological condition, appropriate procedure was adopted for its management, that includes omental patch closure, simple closure, open appendectomy, resection anastomosis and loop ileostomy. Postoperatively patients was examined for the development of any complications.

Inclusion criteria

Patients admitted to hospital, who was diagnosed with peritonitis secondary to hollow viscus perforation and undergoing exploratory laparotomy.

Exclusion criteria

1. Peritonitis secondary to esophageal perforation.
2. Peritonitis secondary to reproductive tract perforation, blunt trauma.
3. Patients not willing to give consent for the study.

Data analysis

Statistical analysis was done and mean, median and mode was used for the analysis of this descriptive study relevant statistical tests applied wherever necessary.

Results

Table 1: Distribution of study subjects according to age

Age	No. of Patients	Percentage
20-29	20	20
30-39	18	18
40-49	28	28
50-59	9	9
>60	25	25

Most of the patients with hollow VISCUS perforation were in the age group of 40-49. The youngest and oldest in the group was 20 and 72 years respectively with both having duodenal perforation, both being male, which was the most common site among all.

Table 2: Distribution of Study Subjects According to Sex

Gender	Frequency	Percentage
Male	92	92
Female	8	8

Among the 100 patients with perforation, males were predominantly higher with a percentage of 92% with only a meagre of 8% being females.

Table 3: Frequency of Post-Operative Complications

Complications	Frequency
No complications	30
Wound infection	44
URTI	3
LRTI	8
Sepsis	17

The mortality rate in our study was 17% of the total 100 cases presenting with perforation. Mortality was high among duodenal perforation patients, as it was the most common site. Of the total 71 cases with duodenal perforation 14 expired during which the patient presented with pain abdomen for a duration of less than 3 days was five and those within 24 hours were 9. Sepsis was the endpoint in all of these cases.

ISSN:0975 -3583,0976-2833 VOL14, ISSUE 10, 2023

The remaining 4 cases of 17 death were due to ileal and colonic perforation respectively with 2 cases each. The 2 cases of colonic perforation were proceeded with right hemicolectomy and loop ileostomy due to the inoperability of the tumour. Sepsis was the endpoint again.

Table 4: Outcome

Outcome	Frequency
Discharged	83
Expired	17

Discussion

The age in our study group varied with the youngest at 20 years and oldest with 73 years, with both having duodenal perforation and undergoing omental patch repair for the same with the post-operative period being uneventful. The highest number of patients were in the age group of 40-49(28%), followed by the age group of >60 years (25%). In our study duodenal perforation was more in the age group of less than 50 years.

In the present study the ratio of men to women with irrespective of site and pathological condition was 11.5:1. The total number of male patients were 92 and female 8. Out of the total 92 male patients with perforation 71 had duodenal and 1gastric and 5 colonic secondary to malignancy. Out of the total of 8 patients with perforation, 4 had duodenal with rest having ileal and appendiceal distributed among them equally.

Post-operative complications were noted in 63% cases. Most common complication was surgical site infection which occurred on post- operative day 3 onwards in 44% cases, followed by sepsis in 17% cases which resulted in mortality in our study group. Respiratory complications were noted in 11% cases, which were treated accordingly. The Results are in par with other studies [9, 10].

Sepsis as an endpoint postoperatively, resulting in death occurred in 12% of duodenal ulcer patients, 1 with ileal perforation, 2 each with appendicular and colonic perforation. The overall mortality in our study group was 17%.

Conclusion

- Surgical site infection was the most common complication (44%), followed by sepsis which resulted in mortality of 17% cases.
- The overall mortality in our study group was 17%, 13% due to duodenal, 2% due to colonic, 2% due to ileal perforation.

References

1. Soll AH. Pathogenesis of peptic ulcer and implications for Therapy. N Engl. J Med. 1990;320:909-16.
2. Warren JR. Unidentified curved bacilli on gastric epithelium in active chronic gastritis. Lancet 1983;1:12-73.
3. Sir Alfred Cuschieri. Disorders of the Stomach & duodenum: Steele RJC, Mossa AR, Cuschieri A. Essential Surgical practice. 4ed. Ox ford University Press Inc., New York, 2002, 265.
4. Peterson WL, Barnett CC, Evans DJ Jr. Acid secretion and serum gastrin in normal subjects and patients with duodenal ulcer: The role of Helicobacter pylori. Am J Gastroenterol. 1996;91:2114-9.
5. Fries JF, Miller SR, Spitz PW. Toward an epidemiology of gastropathy associated with nonsteroidal anti-inflammatory drug use. Gastroenterology. 1989;96:647-55.
6. Bulstrode CJK, Russel RCG, Norman S. Williams. Bailey and Love's "Short Practice of Surgery", 2004.
7. Crawford M James. The gastrointestinal tract: Pathological basis of disease. Robbins & Cotran. W.B. Saunders Comp. Philadelphia. 7th ed., 2004.
8. Johnston D, Martin I. Duodenal ulcer and peptic ulceration: Michael J, Zinner, Seymour I, Schwartz Harold. Ellis. (ed.) Maingot's Abdominal Operation McGraw Hill 10 ed. 1997;1:941-63.
9. Olurin EO, Ajavi Bohrer. Typhoid perforation Roy J. Coll. Surg. Edinb. 1972;17:353-63.
10. Dickson JA. Cole Perforation of the terminal ileum A review of 38 cases. Brit J Surg. 1964;51:893-97.