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An observational assessment of the clinico-etiological profile and management outcome of peritonitis secondary to hollow viscus perforation

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Abstract

Aim: The aim of the present study was to assess the etiological profile, surgical management and its peri-operative complications of peritonitis secondary to hollow viscus perforation.

Methods: The present observational study was conducted in the department of general surgery for the period of 1 year. An analysis of 100 individuals with generalised peritonitis from hollow viscus perforation was conducted. Gender, diagnosis, operating technique, and first-month peri-operative problems were examined.

Results: 40% of patients were 20-40 years old, 80% men and 20% women. 72% had problems and 7% died. Peptic ulcer disease was the most prevalent cause at 35%, followed by idiopathic 29%, typhoid 13%, malignancy 12%, appendicular perforation 7%, and trauma 4%. Most perforations were gastric (35%), duodenal (20%), ileal (18%), large bowel 12%, appendicular 8%, and jejunal 7%. There were 9 (9%) appendicectomy instances. No problems occurred in 2 (22%) subjects. Wound infection was the most prevalent consequence in 21 patients (41%), followed by abdominal dehiscence (11%), paralytic ileus (11%), bronchopneumonia (18%), faecal fistula (10%), and abdominal abscess (7%).

Conclusion: Hollow viscus perforation is the most frequent surgical emergency, and its outcomes and consequences vary on age, general health, location, co-morbidities, and aetiologies, with tropical nations having different pathophysiology than western ones. Also observed is an increase in cancers.

Keywords: Hollow viscus perforation, peritonitis, surgical procedures, peri-operative complications

Introduction

Peritonitis due to hollow viscus perforation is the most prevalent life-threatening illness that requires emergency surgery, especially in underdeveloped nations ^[1]. Surgical therapy, techniques, and post-op problems affect outcomes. For a better result, operative surgeons must evaluate and manage properly ^[2]. This research will examine epidemiology, surgical care, complications, and results in India vs the west ^[3,4]. Medicine is continually evolving, yet certain illnesses and disorders still effect morbidity and death. Peritonitis is one. Infection and inflammation result from peritoneal sac fluid contamination by microbes. Microbial contamination source and kind classify it as primary, secondary, or tertiary. A monomicrobial peritoneal fluid infection without visceral perforation is primary peritonitis. After a hollow viscus breaks, secondary peritonitis is the most prevalent kind, particularly in poor nations like India ^[5,6].

Tertiary peritonitis arises after secondary peritonitis therapy due to host inflammatory response failure or superinfection ^[7]. Microbial contamination of the peritoneal sac may lead to infection, sepsis, multi-organ failure, and death if untreated. The morbidity and death rates are high even with good therapy ^[8,9]. Hollow viscus perforation-induced peritonitis is a worldwide health concern that may kill and injure ^[10,11]. Emergency surgery is needed for this life-threatening illness, especially in impoverished nations. Surgery outcomes and consequences depend on severity and procedure ^[12,13].

To enhance results, surgeons must evaluate and manage properly, which is difficult. This research examines hollow viscus perforation-related peritonitis in India, which varies from Western nations in epidemiology, surgical therapy, complications, and outcomes. Acid peptic illness was formerly assumed to cause most gastric and duodenal perforations in the West. With proper proton pump inhibitor usage, acid peptic disease has diminished.

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Gastric and duodenal perforations still cause the most peritonitis due to hollow viscus perforations. This research examined hollow viscus perforation-related peritonitis aetiology, surgical therapy, and consequences [14, 15].

The current research examined the aetiology, surgical therapy, and peri-operative complications of hollow viscus perforation-related peritonitis.

Materials and Methods

The present observational study was conducted in the department of general surgery for the period of 1 year. The ethical committee approval was taken and study conducted according to the prescribed protocol.

Inclusion criteria

All the patients presenting to casualty OPD with generalised peritonitis secondary to hollow viscus perforation were included in the study.

Exclusion criteria

Patients with primary bacterial peritonitis, peritonitis due to post-op leak and patients with immuno-deficiency were excluded from the study.

Methodology

An analysis of 100 individuals with generalized peritonitis from hollow viscus perforation was conducted. Gender, diagnosis, operating technique, and first-month peri-operative problems were examined.

Appropriate descriptive statistical analysis done using SPSS software version 22.

Results

Table 1: Demographic data

Gender	N	%
Male	80	80
Female	20	20
Age groups		
<20 years	20	20
21-40 years	40	40
41-60 years	28	28
>60 years	12	12

40% patients were in the age group of 20-40 years, with 80% males and 20% females

Table 2: Surgical outcome

Outcomes	No.	%
Complications	72	72
Death	7	7
Recovery without complication	21	21

72% patients had complications and 7% died

Table 3: Etiology

Etiology	No.	%
Acid peptic disease	35	35
Typhoid	13	13
Malignancy	12	12
Trauma	4	4
Appendicular perforation	7	7
Idiopathic	29	29

Peptic ulcer disease was most common cause with 35% incidence, followed by idiopathic cause with 29% incidence,

typhoid with 13% incidence, malignancy 12%, appendicular perforation 7%, followed by trauma 4%.

Table 4: Site of perforation

Site	No.	%
Gastric	35	35
Duodenal	20	20
Jejunal	7	7
Ileal	18	18
Appendicular	8	8
Large bowel	12	12

Commonest site of perforation was found to be gastric 35%, followed by duodenal 20% and ileal 18%, large bowel 12%, appendicular 8%, jejunal 7%.

Table 5: Management

Surgery	No.	%
Primary closure	55	55
Resection + Anastomosis	20	20
Resection + Diversion	16	16
Appendicectomy	9	9

Appendicectomy done was 9 (9%) cases

Table 6: Complications

Complications	No.	%
Wound infection	21	21
Abdominal dehiscence	11	11
Abdominal abscess	7	7
Paralytic ileus	11	11
Broncho pneumonia	18	18
Fecal fistula	10	10
No complications	22	22

22 (22%) patients didn't have any complications. Most common complication being wound infection in 21 patients (41%), followed by abdominal dehiscence in 11 (11%), paralytic ileus in 11 (11%), bronchopneumonia in 18 (18%), fecal fistula in 10 (10%), abdominal abscess in 7 due to anastomotic leak (7%).

Discussion

The most common surgical emergency in general surgery is perforation peritonitis [16]. It is a serious condition with a mortality rate of up to 20%, and it is the third most common cause of surgical abdomen after appendicitis and intestinal obstruction [17]. Peptic perforation, appendicular perforations, typhoid, intestinal tuberculosis, Meckel's diverticulum, diverticulitis, trauma, gastrointestinal carcinomas, foreign body ingestion, gall bladder perforation secondary to gall stones, perforation due to obstruction, and iatrogenic perforation are some of the etiological conditions [18]. Because the signs and symptoms are typical, a clinical diagnosis of peritonitis is usually possible. The mainstay of treatment is adequate resuscitation, antibiotics, and surgical intervention to treat the underlying pathologic process, eliminate the source of bacterial contamination, reduce the degree of bacterial contamination in the peritoneal cavity, and prevent recurrent or residual infection [19, 20].

40% patients were in the age group of 20-40 years, with 80% males and 20% females. 72% patients had complications and 7% died. Peptic ulcer disease was most common cause with 35% incidence, followed by idiopathic cause with 29% incidence, typhoid with 13% incidence, malignancy 12%, appendicular perforation 7%, followed by trauma 4%. Commonest site of

perforation was found to be gastric 35%, followed by duodenal 20% and ileal 18%, large bowel 12%, appendicular 8%, jejunal 7%. Peptic ulcer disease stands as major cause of perforative peritonitis in India now, compared to previous studies where infection has a major role in aetiology with typhoid as cause in 13.54% [21-23]. Distal gastric perforation was more common followed by duodenal perforation [24, 25].

Previous studies in the west showed generalised peritonitis secondary to hollow viscus perforation was common in younger age group [26, 27]. Appendectomy done was 9 (9%) cases. 22 (22%) patients didn't have any complications. Most common complication being wound infection in 21 patients (41%), followed by abdominal dehiscence in 11 (11%), paralytic ileus in 11 (11%), bronchopneumonia in 18 (18%), fecal fistula in 10 (10%), abdominal abscess in 7 due to anastomotic leak (7%).

Conclusion

The most frequent surgical emergency are hollow viscus perforations. The results of surgery and the associated complications are influenced by factors such as age, overall health, location, co-morbidities, and causes, with variations in the underlying mechanisms between tropical nations and the western world. There is also an observed rise in the incidence of cancers.

Conflict of Interest

Not available.

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