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ORIGINAL ARTICLE

Assessment of spectrum of perforation peritonitis

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ABSTRACT:

Background: Perforation peritonitis refers to inflammation of the peritoneum due to leakage of gastrointestinal contents into the peritoneal cavity through a perforation (hole) in any part of the gastrointestinal (GI) tract.The present study was conducted to assess spectrum of perforation peritonitis. **Materials & Methods:** 72 patients of perforation peritonitis of both genders were recruited. Aetiology and complication were recorded. **Results:** Out of 72 patients, 30 were males and 42 were females. Aetiology found to be gastric ulcer in 5, duodenal ulcer in 33, typhoid ulcer in 14, traumaticin 6, tubercular in 4 and appendicular in 10 cases. The difference was significant (P< 0.05). Complications were abdominal dehiscence in 5, wound infection in 14, faecal fistula in 2, intra-abdominal abscess in 7, septicemiain 6 and paralytic ileus in 3 cases. The difference was significant (P< 0.05). **Conclusion:** The majority of perforation peritonitis cases comprised of Duodenal ulcer, typhoid and ileal perforations.

Keywords: Perforation peritonitis, paralytic ileus, intra-abdominal abscess

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INTRODUCTION

Perforation peritonitis refers to inflammation of the peritoneum due to leakage of gastrointestinal contents into the peritoneal cavity through a perforation (hole) in any part of the gastrointestinal (GI) tract.[1,2]There are three types ofperitonitis- primary peritonitis, which arises from an external source outside the peritoneal cavityand is typically monomicrobial; secondary peritonitis, which arises from an intraabdominalsource, usually a perforated hollow viscous organ; or tertiary peritonitis, which develops aftersecondary peritonitis is treated.[3] The combination of numerous factors, such as patient-relatedfactors, disease-specific factors, and diagnostic and therapeutic measures, determines theprognosis and outcome of peritonitis.[4]Even with improvements in intensive care, antimicrobial therapy, and surgical procedures, managing peritonitis remains extremely challenging, complex, and demanding. An acute abdomen is the typical presentation of peritonitis.[5] Abdominal discomfort, rigidity or guarding, distension, and decreased bowel sounds are examples of local findings. Fever, chills or rigidity, tachycardia, perspiration, tachypnea, restlessness, dehydration, oliguria, confusion, and finally shock are examples of systemic abnormalities.[6]

The diagnosis is based mainly on clinical grounds. Plain x-ray, ultrasound and CT scan are the tools that can ascertain the diagnosis. However diagnostic laparoscopy can be helpful in some cases.[7]The present study was conducted to assess spectrum of perforation peritonitis.

MATERIALS & METHODS

The study was carried out on 72 patients of perforation peritonitis of both genders. All gave their written consent to participate in the study.

Data such as name, age, etc. was recorded. Resuscitation was administered first in all patients with suspected perforation peritonitis, and an initial diagnosis was determined based on a thorough history, physical examination, and the evidence of pneumoperitoneum on an erect abdominal X-ray. Hb%, serum urea and electrolytes, random blood sugar, and urine albumin and sugar were all examined during emergency examinations. An abdominal ultrasound was performed on a few chosen patients. A nasogastric tube was inserted for gastric aspiration in each instance. Urine production was monitored using urinary catheterization. All of the patients who were deemed suitable for anesthesia had emergency exploratory laparotomies following adequate hydration. During surgery, the source of contamination was controlled and repaired, the peritoneum was liberally irrigated, and a drain was inserted. An ongoing non-absorbable suture was used to seal the abdomen.Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 72		
Gender	**Male**	**Female**
Number	30	42

Table I shows that out of 72 patients, 30 were males and 42 were females.

Table II Aetiology of perforation

Aetiology	Number	P value
Gastric ulcer	5	0.01
Duodenal ulcer	33	
Typhoid ulcer	14	
Traumatic	6	
Tubercular	4	
Appendicular	10	

Table II, graph I shows that aetiology found to be gastric ulcer in 5, duodenal ulcer in 33, typhoid ulcer in 14, traumatic in 6, tubercular in 4 and appendicular in 10 cases. The difference was significant (P< 0.05).

Graph I Aetiology of perforation

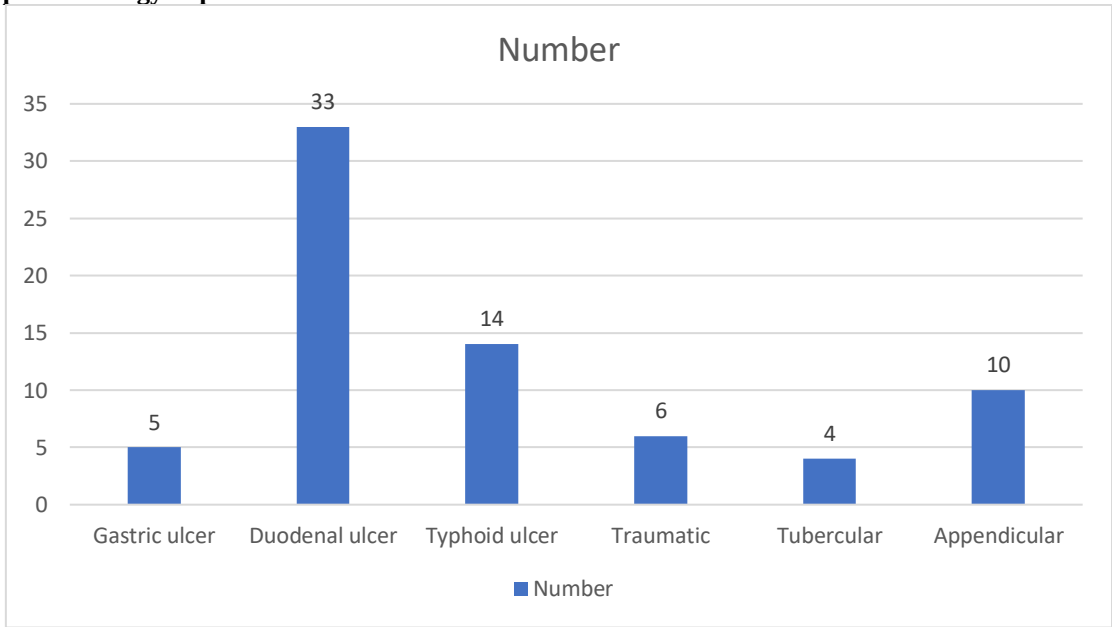

Table III Complications of perforation

Complications	Number	P value
Abdominal dehiscence	5	0.01
Wound infection	14	
Faecal fistula	2	
Intra-abdominal abscess	7	
Septicemia	6	
Paralytic ileus	3	

Table III shows that complications were abdominal dehiscence in 5, wound infection in 14, faecal fistula in 2, intra-abdominal abscess in 7, septicemia in 6 and paralytic ileus in 3 cases. The difference was significant (P< 0.05).

DISCUSSION

Abdomen is a ‘’Magic Box’’ presenting various clinical conditions of varied aetiology, which require early recognition and proper management and timely intervention to prevent life threatening complications.[8] Peritonitis is an inflammatory condition of the peritoneum. The process may be acute or chronic; it may be septic or aseptic and primary or secondary.Perforation of peptic ulcer is common cause of morbidity and mortality in patients of peptic ulcer disease.[9]

We found that out of 72 patients, 30 were males and 42 were females. Adensunkanni AR et al [10]determined the prognostic factors in typhoid ileal perforationin 50

patients. Attention was paid to pre-operative and post-operative factors. The sex ratio was 4:1 in favour of male, with an age range of 7-42 years and a mean of 19.5 years. The age and sex had no effect on the prognosis. Late presentation, delay in operation, multiple perforations, and drainage of copious quantities of pus and faecal material from the peritoneal cavity adversely affected the incidence of faecal fistula and the mortality rate. The development of faecal fistula significantly affected the mortality rate. Early presentation, single perforation and moderate amounts of pus/faecal matter draining from the peritoneal cavity enhanced the development of wound infection, wound dehiscence and residual intra-abdominal abscess. Fourteen patients (28%) died, 50% of these within the first 5 post-operative days. Seventy-one per cent of the 14 died within 10 days.

We found that aetiology found to be gastric ulcer in 5, duodenal ulcer in 33, typhoid ulcer in 14, traumatic in 6, tubercular in 4 and appendicular in 10 cases. Yadav D et al[11] included 77 consecutive patients of perforation peritonitis studied in terms of clinical presentations, causes, site of perforation, surgical treatment, postoperative complications, and mortality. All patients were resuscitated and underwent emergency exploratory laparotomy. On laparotomy cause of perforation peritonitis was found and controlled. The most common cause of perforation peritonitis noticed in our series was perforated duodenal ulcer (26.4%) and ileal typhoid perforation (26.4%), each followed by small bowel tuberculosis (10.3%) and stomach perforation (9.2%), perforation due to acute appendicitis (5 %). The highest number of perforations was seen in ileum (39.1%), duodenum (26.4%), stomach (11.5%), appendix (3.5%), jejunum (4.6%), and colon (3.5%). Overall mortality was 13%. The spectrum of perforation peritonitis in India continuously differs from western countries. The highest number of perforations was noticed in the upper part of the gastrointestinal tract as compared to the western countries where the perforations seen mostly in the distal part. The most common cause of perforation peritonitis was perforated duodenal ulcer and small bowel typhoid perforation followed by typhoid perforation. Large bowel perforations and malignant perforations were least common in our setup.

We found that complications were abdominal dehiscence in 5, wound infection in 14, faecal fistula in 2, intra-abdominal abscess in 7, septicaemia in 6 and paralytic ileus in 3 cases. Yang B et al[12]found that mean age at onset was 65 years (range from 45 to 73). Seven patients had a history of chronic constipation. All patients complained of sudden lower abdominal pain. The perforation occurred after coloclysis and administration of senna leaves in two patients. Nine patients had signs of peritoneal irritation. Seven cases underwent abdominal paracentesis, which was diagnostic in six. Only one case was definitely diagnosed prior to surgery. One patient underwent neoplasty of the colon, another a partial resection of colon, six a neoplasty of the colon plus sigmoid colostomy, and two underwent Hartmann surgery. All perforation sites were opposite to the mesenteric edge. The perforation sites were located on descending colon in one case, sigmoid colon in three cases, and rectosigmoid colon in six cases. In five patients, surgical pathological examination was consistent with the microscopical changes of colonic perforation caused by feces. Three patients died after surgery.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that the majority of perforation peritonitis cases comprised of Duodenal ulcer, typhoid and ileal perforations.

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