Spectrum of perforation peritonitis -260 cases experience

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ABSTRACT

INTRODUCTION: Perforation peritonitis is the most common surgical emergency in Nepal. The etiology and sites of perforation showed wide geographical variation. The aim of this study was to find the spectrum of perforation peritonitis managed at Bir hospital, Kathmandu, Nepal

METHODE: 260 Operated patients of perforation peritonitis were studied retrospectively in terms of clinical presentation, duration, operative findings and postoperative morbidity and mortality over a period of three years at Bir hospital. All the patients had undergone emergency laparatomy under general anesthesia and sites of perforation were identified.

RESULTS: The perforation peritonitis due to non-trauma were more (227 cases) than trauma (33 cases).In non-traumatic perforation common site of perforation was duodenum (83 cases) followed by ileum (70 cases) and appendix (60 cases). In traumatic cases common site was jejunum (15 cases) followed by transverse colon and sigmoid colon. Over all the most common sites of perforation was duodenum and peptic ulcer (73 cases) was the most common cause. Malignant perforation was low in number (11cases). Overall mortality was 11.5% and morbidity was at higher range, 57.7%.

CONCLUSION: Non-traumatic upper gastrointestinal perforation peritonitis is common in our place. Peptic ulcer is the leading etiology and traumatic perforation is also increasing. Mortality is comparable to that of best centers. The associated high morbidity requires more effort to rectify it.

KEY WORDS: perforation peritonitis, etiology, sites

INTRODUCTION

Peritonitis, inflammation of peritoneum is a life threatening condition ever since it was recognized many years ago. Primary, secondary and tertiary peritonitis remind us to undertake search for underlying etiology in a particular geographical area. Since most of these patients are admitted in hospital, even retrospective data are representative and hence we carried out the clinical study to find out the spectrum of underlying causes of peritonitis and sites of perforation.

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METHODE

260 diagnosis confirmed, consecutive patients with peritonitis treated in Bir hospital from 2063 to 2066B.S. were analyzed for clinical findings. It is a hospital based retrospective study. Each patients clinical features as well as prognostic indicators e.g.-duration of abdominal pain at the time of admission, guarding, rigidity of abdominal wall [localized or generalized], shock, age, underlying cause of peritonitis were meticulously noted. Compliance with treatment modality in emergency setting was checked. Final outcome of recovery or complication leading to further intervention were meticulously observed.

RESULTS

Table 1. Pre-operative Data

Parameters	No (n=260/%)
Age (years)	
< 50	225
> 50	35
Duration of pain abdomen	
< 24 hours	120(46.1%)
> 24 hours	140(53.8%)
Peritonitis	
Localised	10(3.4%)
Generalized	250(96.1%)

Table 2. Operative Data

A) Sites of Perforation	Non-Traumatic (n=227)	Traumatic (n=33)	Total (n / %)
Gastric	8	3	11(4.23%)
Duodenum	83	-	83(27.7%)
Jejunum	-	15	15(5.7%)
Ileum	70	4	74(28.4%)
Appendix	60	-	60(23.06%)
Caecum	-	2	2(.7%)
Transverse colon	3	4	7(2.6%)
Sigmoid colon	-	4	4(1.5%)
Gall bladder	3	-	3(1.1%)
Liver abscess	1	-	1(.3%)
Urinary bladder	-	1	1(.3%)

B) Etiology of Perforation	No
Gastric	
Malignancy	8
Trauma	3
Duodenum	
Peptic ulcer	73
NSAID	10
Jejunum	
Trauma	15
Ileum	
Enteric	20
Trauma	4
Appendix	
Appendicitis	60
Large Bowel	
Malignancy	3
Trauma	10
Urinary bladder	
Trauma	1
Others	
Clinically enteric	50
Gall bladder perforation	2
Liver abscess perforation	1

C) Nature of peritoneal collection

Types	n (%)
Clear	149(57.3%)
Purulent	98(37.6%)
Fecal	13(5%)

D) Surgical procedure (n=260)

Gram patch repair	83
Primary closure	93
Resection anastomosis	5
Diverting stomas	16
Appendectomy	60
Cholecystectomy	2
Peritoneal lavage with drain	1

Table 3. Postoperative data

Particular	Morbidity (n=150/%)
Wound infection	60 (40%)
Speticemia	48 (32%)
Burst abdomen	20 (13.3%)
Anastomosis leak	10 (6.6%)
Bed sores	5 (3.3%)
Electrolyte disbalance	7 (4.6%)

Particular	Mortality (n=30/%)
Speticemia	20 (66%)
Highout put fistula	5 (16%)
Others	5 (16%)

A total of 260 peritonitis patients were studied. The male patients were more (n=20,85.5%) than female (n=51,11.6%) [table-1] and the sufferers were the patients of age 17 to 86 years . The patients arriving to hospital within and beyond the 24 hours of the onset of pain abdomen was roughly equal [table-1]. 10(3.8%) patients presented with localized peritonitis [table-1] yet the general condition was poor and laparatomy was performed to treat them. So after adequate resuscitation all the 260 patients underwent laparatomy under general anesthesia and the site of perforation [table-2] and identification of underlying etiology [table-2] were done at time of operation. History, physical examination, intraoperative findings and postoperative report of biopsy were analysed to confirm the etiology[duodenal ulcer tissue, ileal perforation tissue of suspicious enteric, gall bladder and liver abscess perforation were not sent for HPE]. Duodenal perforation were seen in 83(31.5%) cases. The perforation due to peptic ulcer were 73(27.7%)

cases and NSAID use were 10(3.8%)cases, appendicular perforation were 60(23.06%), ileal perforation were 74(28.46%) and enteric perforation on HPE were 20(7.6%) cases and different traumatic viscus injuries were 33(12.69%) [table-2]. There were 11(4.23%) cases of malignant perforation. Gram patch repair was done on duodenal perforation. The small bowel perforation were treated by primary repair, resection anastomosis or stoma according to the condition of the bowel. All large bowel perforation were treated by formation of stomas. There were 9 cases of anastomosis leak from small bowel repair and 1 from tube caecostomy. Although overall mortality was 11.53% (30 cases) [table-3], the morbid condition was high 57%(150 cases) due to different causes[table-3].

DISCUSSION

Perforation peritonitis is common surgical emergency[1,2] mainly affecting youngs [3]. The mean age in this study is 37 years compared to other study where mean age is 45 years [4] .Majority of the patients in our study are male and the male to female ratio is 4:1 which is comparable to other study[4]. The perforation of proximal Gastrointestinal tract is common than distal part in our study which is consistent with Dorairajan LN [5] but in contrast to other studies[6] where distal part is more common. The reason is that in western world colonic diverticulitis and traumatic perforation are more. Gastroduodenal perforation are decreasing due to wide spread use of medical therapies for peptic ulcer as well as use of stress ulcer prophylaxis among critically ill patients. Moreover, the order of sites of perforation in our study is in duodenum [7] , ileum and appendix which is not comparable to other study [6] where appendicular infection was higher followed by colon and small bowel perforation. Similarly, Agrawal et al[8] showed higher number of perforation in ileum followed by jejunum and appendix. Tubercular perforation was more on that study and jejunum and ileum were common sites.

Etiologically, the non-traumatic perforation is higher than traumatic perforation [table- 2].The most common cause of perforation here is peptic ulcer which is comparable to other studies but contrast to study by Khanna et al [9] which showed typhoid perforation was more common. In west non-traumatic ileal perforation due to crohns disease, foreign body, diverticulitis and radiation enteritis were common[10]. Perhaps the irregular food habit, low socioeconomic status and infection are important bearing for peptic ulcer perforation in our country. The peptic ulcer perforation due to NSAID in this study were 10(3.8%) which is less in number. The enteric perforation is less and no tubercular perforation detected. This may be due to not sending tissue biopsy in all ileal perforation cases.

Gastric ulcer perforation due to malignancy is more and occur in advanced ages which is comparable to other study[11] but in contrast to other study[12] where wide spread use of NSAID and ingestion of herbal medicines and prolong fasting were common causes. Noon et all from Texas[USA][13] showed penetrating trauma the major burden yet it is not common here. This may be because of the trauma cases go to the nearest hospital where it occurred. The common site of perforation due to blunt abdominal trauma is jejunum followed by ileum and colon which is comparable to the study by Sule A-Z[14]. In absence of peritonitis primary closure of traumatic perforation is safely done[15]. Appendicular perforation is mainly seen on young age group. The incidence of colorectal perforation secondary to neoplasm accounts for majority of the cases but the incidence is low and carries high mortality. Other causes are colonic diverticula, inflammatory conditions, volvulus, ischaemia, trauma, amoebic colitis in tropical countries [16,17]. In this study colonic perforation due to trauma were more than malignancy. Simple closure with omental patch followed by Helicobactor pylori eradication is effective in managing peptic ulcer perforation with low morbidity and mortality despite the patients presented late[18]. Simple closure of duodenal and ileal perforation is safe. The Large bowel perforation is treated with formation of stomas which is safe [19]. The mortality in our study is 11.5% which is comparable to other study [20,21] and main cause is septicemia. This may be due to resuscitation, peritoneal lavage and antibiotic coverage to all the patients. The mortality significantly increased by age more than 50 years, late presentation, delay treatment and associated co-morbid conditions[20,22]. The morbidity on postoperative periods is 57.7% which comparable to other study [23]. The mortality and morbidity are closely related to the extent of intraperitoneal infection and incidence of postoperative complication[24]. Shock on admission, preoperative metabolic acidosis, tachycardia, acute renal failure, low serum albumin, symptoms more than 24hours of the duration are associated with poor prognosis[25].

CONCLUSION

The etiology of perforation in our country is from different causes mainly by non-trauma. Majority of perforations are seen in duodenum and peptic ulcer is the leading cause. Perforation due to malignancy is less and traumatic perforation is increasing. Aggressive resuscitation and early meticulous surgery is required to improve complications.. Mortality is 11.5% which is comparable to best centers.

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