

CLINICAL STUDY OF ABDOMINAL HOLLOW VISCERAL PERFORATION-NON TRAUMATICVinod Kumar B¹, A. S. Mathew²**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: INTRODUCTION: Perforation of any part of gastrointestinal track usually gives rise to a life threatening emergency. A high index of suspicion is essential to diagnose visceral perforation early as significant morbidity and mortality results from diagnostic delay. This study was undertaken to analyse regarding sex incidence, seasonal factors, etiological factors, clinical features, investigations, treatment, complications of hollow perforation and results were compared with results of previous similar studies. **METHODS:** The total number 31 cases of hollow visceral perforation in abdomen have been studied prospectively in detail during the period from October 2009 to September 2011. **RESULTS:** Among the 31cases of gastrointestinal perforation, perforation of duodenal ulcer 9 cases (29.3%) was the commonest, there was male predominance constituting 21(67.7%), peptic ulcer perforation maximum is seen between June and September. The most common complication recorded was wound infection 5 cases (16.1%), death 4 cases (12.9%.Median length of the stay was 13days (2-44days). **CONCLUSION:** From our study of 31 cases of hollow viscous perforation the following can be concluded most common age group affected is 40-60 years, more commonly seen in males. Duodenum is the most common site perforation. In general peptic ulcer perforation maximum is seen between June and September, in rainy season. Most presented with hollow viscous perforation after 24 hours to the hospital. Wound infection, septicemia was, most common cause of morbidity and mortality respectively.

KEYWORDS: Hollow visceral perforation, non-traumatic.

INTRODUCTION: Perforation of the stomach, duodenum and small bowel is on the increase and likely to form a considerable proportion of emergency work load than colonic perforation.^[1] An increasing proportion of elderly patients in western societies and the availability of powerful anti-inflammatory and analgesic medications combine to provide a fertile ground for upper gastrointestinal ulceration and its complications.

The great majority of perforations of the stomach or duodenum are complications of peptic ulcer.¹ Approximately 3% of patients with typhoid experience intestinal perforation.² The ruptured or perforated viscous challenges the surgeon's skill as a technician and his knowledge of preoperative, per-operative and postoperative care of the severely ill surgical patient.³

MATERIALS AND METHODS: The total number of 31 cases of hollow viscous perforation in abdomen have been studied prospectively in detail during the period from October 2009 to September 2011. These cases were selected randomly from admission in pushpagiri institute of medical sciences and research center, thiruvalla, Kerala.

Clinical diagnosis of viscous perforation was made based on history and thorough physical examination which will be confirmed by investigation or by laparotomy formed the basic of selection

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of cases. History was taken from patient and relatives. Perforation of stomach, duodenum, small intestine and large intestine included in the study. Perforation of abdominal part of esophagus, biliary tree, and female reproductive tract excluded from the study.

RESULTS: The result obtained in the present study were analyzed as follows. Most common site of perforation was duodenum as shown in Table 1. Most of the patients presented within 24 hours as shown in Table 2. In the present study peptic ulcer perforation maximum is seen between June and September, rainy season as shown in Table 3. In the present study the male: female ratio with all types of perforation irrespective of etiology was 2.1:1 as shown in table 4.

Incidence of peptic ulcer perforation accounts to 42% as shown in table 5. Most of the patients offered procedure like simple closure with omental patch, appendectomy, and colostomy. Complicated procedures are avoided. Type of surgery with corresponding site of perforation shown in Table 6. Median length of the stay in our study was 13 days (2-44 days) as shown in Table 7. In our study wound infection was most common complication 16.1%; mortality was 12.9% as shown in Table 8.

DISCUSSION: The results obtained in the present study were compared with previously conducted similar studies. Perforations of the proximal part of the gastrointestinal tract were more common, which is in contrast to the studies from western countries where perforation are common in the distal part.

The perforation of proximal gastrointestinal tract were six times as common as perforation of distal gastrointestinal tract as has been noted in earlier studies from India,⁴ which is in sharp contrast to studies from developed countries like United States,⁵ Greece⁶ and Japan⁷ which revealed that distal gastrointestinal tract perforation were more common. Study conducted by Gupta S and Kaushik R⁸ shows the same result. Duodenal ulcer perforation was the most common perforation noticed in our study. This is comparable to other studies Afridi et al⁹ and Gupta S and Kaushik R.⁸

Patients with ulcer syndrome usually have exacerbation of pain in the winter months. The same is true of its complications. Recent study by Kenneth¹⁰ noted that little difference in seasonal distribution. Perforation was least common in the summer months and most frequent in midwinter as noted by Kuratta J H.¹¹

The report by Christensen et al¹² in UK shows a higher incidence in August and September.

They concluded that there is no worldwide constituency in seasonal variation of perforation. In the present study peptic ulcer perforation maximum is seen between June and September rainy, but unable to explain the reason. In present study 13(42%) of cases presented within 24 hrs. rest presented after 24 hrs. Most common symptom was pain abdomen. This study was comparable to study by Jhobta et al.¹³

Late presentation may be due to ignorance, relating to heart burn. In the present study the male to female ratio with all types of perforation irrespective of etiology was 2.1:1. Incidence of peptic ulcer perforation accounts to 42% comparable to study by D.C.M Rao et al¹⁴ and Dandapat et al.¹⁵ In our study closure of perforation with omental patch was done in 13(42%) cases) comparable to study by Afridi et al.⁹

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Median length of the stay in our study was 13days (2-44 days) comparable to study by K. Mulari, A. Leppaniemi.¹⁶ Most of delay is caused by complications like respiratory tract infection, wound infection.

Wound infection was seen in 5(16.1%) patients, respiratory infection in 1(3.22%) patients. One case of faecal fistula (3.22%) was seen in case of necrotizing enterocolitis comparable to study by S. K. Nair et al¹⁷ related to delayed presentation. In our study mortality was 12.9%.

Afridi et al 2008⁹ study mortality was comparatively low 10.6%, due to the formation of only stoma in emergency in patients with serious illness and omentopexy in all patients present with gastro duodenal perforation due to acid peptic disease. There were 51(10%) deaths in Jhobta et al¹³

study. The main cause of death in that series of patients was septicemia (59%). They concluded that contamination was a crucial consideration in patients with peritonitis and problem of mortality is a problem of infection. S.K. Nair et al¹⁷ found that the mortality was directly related to perforation operation interval. In their series of 50 cases of gastro intestinal perforation there was no mortality in the cases operated upon within 12 hours of symptoms.

CONCLUSION: From our study of 31 cases of hollow viscous perforation the following can be concluded most common age group affected is 40-60 years. Hollow viscous perforation is more commonly seen in males. Duodenum ulcer perforation is the most common hollow viscous perforation. In general peptic ulcer perforation maximum is seen between June and September, in rainy season. Most of the patients presented with hollow viscous perforation after 24 hours to the hospital. Peptic ulcer was found to be most common cause of perforation.

Most of the patients with hollow viscous perforation were operated within 12 hours of admission in our study. All Cases of peptic ulcer perforation was closed with omental patch. Average duration of stay in the hospital for hollow viscous perforation was 13 days (2-44 days).Wound infection was most common complication in our study. Septicemia was most common cause of mortality in our study.

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Site of perforation	No. of cases	percentage
Duodenum	9	29.3%
Gastric	5	16.1%
Jejunum	1	3.2%
Ileum	5	16.1%
Appendix	5	16.1%
Sigmoid colon	6	19.2%

Table 1: Showing site of hollow viscous perforation in study subjects

Duration (hrs.)	No. of cases	Percentage
<24hrs	13	42%
>24hrs	18	58%

Table 2: Duration of Symptoms Before Seeking Medical Advice in study subjects

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Season	No. of patients
June-September	7(54%)
October-January	4(30.7%)
February-may	2(15.3%)
Total	13

Table 3: Seasonal variation of perforation of peptic ulcer in study subjects

Sex	No. of patients	Percentage
Male	21	67.7%
Female	10	32.3%

Table 4: Sex distribution of perforation in study subjects

Etiology		No. of cases	percentage
Duodenal perforation		9	29%
Gastric perforation	Benign ulcer	4	13%
	Malignant ulcer	1	3.2%
Tubercular		1	3.2%
Appendicular		5	16.1%
Colonic malignancy		1	3.2%
Non specific		10	32.3%

Table 5: Showing etiology of perforation in study subjects

Etiology	Type of surgery	No. of case	Percentage
Gastric ulcer perforation	Closure with omental patch	4	12.9%
	Gastrectomy, GJ, JJ	1	3.2%
Ileum	Simple closure	1	3.2%
	Resection anastomosis	4	12.9%
Appendicular perforation	Appendectomy	5	16.1%
Sigmoid colon perforation	Hartmann's	2	6.5%
	Loop colostomy	2	6.5%
	Simple closure	1	3.2%
	Res anastomosis	1	3.2%
Jejunum	Simple closure	1	3.2%
Duodenal ulcer perforation	Closure with omental patch	9	29.1%

Table 6: Type of surgery performed on study subjects

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Duration (days)	No. of patients	Percentage
0-10	9	29%
10-20	18	58.1%
>20	4	12.9%
Total	31	100%

Table 7: Duration of Hospital stay among the study subjects

Site of perforation	Mortality	Wound infection	Respiratory complication	Fecal fistula
DUODENUM	2	0	0	0
GASTRIC	0	0	0	0
ILEAL	0	1	0	1
APPENDIX	0	1	0	0
COLON	2	2	1	0
JEJUNUM	0	1	0	0
TOTAL	4	5	1	1
Percentage	12.9%	16.1%	3.22%	3.22%

Table 8: Causes of Mortality and morbidity in study subjects

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