

## Management of Patients with Hollow Viscus Perforation

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### Abstract

*Introduction:* A high index of suspicion is essential to diagnose visceral perforation early as significant morbidity and mortality results from diagnostic delay. *Methodology:* Each patient was examined thoroughly, after taking a detailed history. Clinical diagnosis of hollow viscus perforation is made based on history and physical examination which will be confirmed by investigations and laparotomy. *Results:* Patients with duodenal ulcer perforation were treated with omental patch (5), two layer closure (5) and truncalvagotomy with pyloroplasty (1). 16 patients had appendicular perforation treated by appendicectomy. Gastric perforation closed by omental patch in one patient. Ileal perforation was closed in two layers. *Conclusion:* Most patients with appendicular tip perforation treated surgically by appendicectomy.

**Keywords:** Viscus Perforation; Management; Appendicectomy.

### Introduction

Gastro intestinal perforation is a common abdominal emergency faced by general surgeon [1,2]. It is a common dictum that abdomen is a Pandora's Box and gastrointestinal perforation is one such condition to prove it. Perforation of a hollow viscus from wide variety of causes comprises the major portion of emergency surgical admissions and

emergency laparotomies [3,4]. The diagnosis and treatment of gastro intestinal perforation remains main problem in our country [5,6]. Improved medical and surgical care has reduced this problem in North America and the U.K., where vascular lesions and malignancies are predominant cause of perforations, while in our country, peptic disease, typhoid, tuberculosis are still preceding malignancies [7]. The first clinical description of perforated peptic ulcer was made by Crisp in 1843. Smoking and use of non-steroidal anti-inflammatory drugs are important risk factors for perforation [8]. Especially these days, the inadvertent use of NSAIDs and other over the counter analgesics forms one of the most common risk factors [9]. Perforation of the stomach, duodenum and small bowel form a considerable proportion of emergency work load than colonic perforation [10]. In developed societies most common cause are, the diverticular disease and colonic carcinoma, where as in the developing countries infective conditions such as amoebiasis is important. Perforation of the large intestine is a rapidly fatal condition, death being caused by sepsis from peritoneal contamination with various enteric pathogens both aerobic and anaerobic. Majority of patients present with sudden onset of abdominal pain. A high index of suspicion is essential to diagnose visceral perforation early as significant morbidity and mortality results from diagnostic delay

### Methodology

This study has been based on the analysis of 40 cases of hollow viscus perforation admitted to Khaja Bande Nawaz Teaching & General Hospital (KBNIMS), KALABURGI, from November 2011 to April 2013 patients (cases) fulfilling the criteria were randomly selected for the study.

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Each patient was examined thoroughly, after taking a detailed history. Clinical diagnosis of hollow viscus perforation is made based on history and physical examination which will be confirmed by investigations and laparotomy.

Preoperative resuscitation of patients was done by fluids and electrolyte imbalance was corrected. Antibiotics like 3<sup>rd</sup> generation cephalosporins and metronidazole were used initially, later shifted according to culture and sensitivity. Exploratory laparotomy was done under general anaesthesia. Midline incision either upper or lower or right paramedian incision was made depending on the suspected site of perforation.

Viscera was inspected carefully, the site of perforation noted and appropriate surgical procedure like closure of perforation by omentopexy or closure in two layers done and definitive procedure like bilateral truncalvagotomy with pyloroplasty, resection and end to end anastomosis was performed if required. Peritoneal lavage with normal saline done and peritoneal cavity was drained. Post operatively patients were put on continuous nasogastric aspiration, intravenous fluids, analgesics and antibiotics.

Postoperative complications noted, treated accordingly. Patients were discharged on recovery. Patients were followed upto 3 months but few patients didn't turn up after discharge.

## Results

### *Treatment of Various Perforations*

Patients included in this study were managed according to the standard measures. Preoperative resuscitation in cases of shock and correction of fluid and electrolyte abnormality were carried out in all patients. Anaemia was treated by blood transfusion; meanwhile all relevant investigations were carried out. None of the patients were treated conservatively. Once the patient was stabilized, the cases were posted to laparotomy and the primary cause was identified and treated accordingly.

### *Surgical Treatment of Various Perforations*

Patients with duodenal ulcer perforation were treated with omental patch (5), two layer closure (5)

**Table 1:** Relation between sex and site of perforation

Sex	Gastric	Duo denum	J junum	Ileum	Appendix	Colon	Rectum
Male	1	11	0	7	13	0	0
Female	0	1	1	1	3	1	1

Among the Male patients, 13 patients had appendicular perforation, 11 patients had

**Table 2:** Signs and site of perforation

Signs	GP	DP	IP	JP	AP	CP	RP
Hypotension	0	7	7	1	13	1	1
Tachycardia	0	7	7	0	12	1	1
Distension	0	2	6	0	3	1	1
Guarding	1	9	7	0	14	0	0
Rigidity	1	9	6	0	6	0	0
Obliteration of liver dullness	1	8	4	0	1	0	0
Absent bowel sounds	0	10	7	0	8	1	0
Free fluid in abdomen	0	0	4	1	2	1	1

**Table 3:** Treatment of various perforations

Aetiology	Operation	No. of cases
GUP	COP with OP	1
DUP	COP with OP	5
	COP with TL	5
	B/L TV with pyloroplasty	1
TP(ileal)	COP with TL	4
Tu P	Right Hemicolectomy with end to end anastomosis	1
AP	Appendicectomy	16
Tr DP	COP with TL	1
Tr IP	COP with TL	1
Tr RP	Primary closure	1
SBG	Resection E-E anastomosis	2
CP(malig)	End colostomy with resection+ mucus fistula	1

**Table 4:** Comparison of surgical treatment

Surgical procedure	Dinesh et al <sup>11</sup> 2011(77)	Present study 2013(40)
Omentopexy	29	7
Primary repair	25	11
Resection and anastomosis	15	4
appendectomy	3	16
Stoma	3	1
B/L TV with pyloroplasty	0	1
Only peritoneal toileting	2	0

and truncalvagotomy with pyloroplasty(1). 16 patients had appendicular perforation treated by appendicectomy. Gastric perforation closed by omental patch in one patient. Ileal perforation was closed in two layers. Perforated gangrene segment was noted in 2 patients, resected and end to end anastomosis was done. Traumatic perforation in duodenum, ileum were closed in two layers and traumatic rectal perforation was closed by primary suturing. Tubercular perforation with stricture was treated with right colectomy with ileotransverse anastomosis. Colon carcinoma with perforation noted in descending colon was resected and end colostomy with mucus fistula done.

Peritoneal lavage: most patients after laparotomy peritoneal lavage were done with normal saline and sometimes with metronidazole.

Post operatively input and output chart, vitals monitored every 2<sup>nd</sup> hourly, antibiotics, analgesics, IV fluids and continuous nasogastric suction done.

Early ambulation and breathing exercises were practiced in all cases. Bowel sounds appeared average of 3-5 days in most cases, after appearance of bowel sounds ryles tube removed. Drain was removed depending on quantity and content of drainage, most times removed if content less than 50ml for two days. Suture removal was done depending on clinical judgement in individual cases.

## Discussion

Patients with duodenal ulcer perforation were treated with omental patch (5), two layer closure (5) and truncalvagotomy with pyloroplasty(1). 16 patients had appendicular perforation treated by appendicectomy. Gastric perforation closed by omental patch in one patient. Ileal perforation was closed in two layers. Perforated gangrenous segment was noted in 2 patients, resected and end to end anastomosis was done. Traumatic perforation in duodenum, ileum were closed in two layers and traumatic rectal perforation was closed by primary suturing. Tubercular perforation with stricture was treated with right hemicolectomy with anastomosis.

Colon carcinoma with perforation noted in descending colon was resected and end colostomy with mucus fistula done.

Peritoneal lavage: most patients after laparotomy peritoneal lavage were done with normal saline and sometimes with metronidazole.

## Conclusion

Laparotomy with closure of the perforation with omental patch and primary repair in two layers are the commonest operative management for hollow viscus perforation.

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