Original Research Article

Management of Critically Ill Patients of Hoiiow Viscus Perforation by Mini Laprotomy Followed by Regular Laprotomy

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Abstract

Background: Gastrointestinal perforation is a common abdominal emergency having high morbidity and mortality. Surgery plays an important role in the management of perforation.**Methods:** 20 cases of critically ill patients with abdominal compartment syndrome are taken for the study. Abdominal compartment pressure more than 25 cm of NS are taken for the study. Study period is from January 2016 to February 2020.Patients are managed differently .mini laparotomy done under local anesthesia, abdomen decompressed. later regular surgery done. **Results**: Results obtained in this study are analyzed. In Majority of patients BP improved by10to20mmhg after mini laparotomy done under local anesthesia and urine out put also star ted increasing. Duodenal ulcer perforation is the commonest cause and then typhoid ulcer perforation. Smoking and alcohol intake are the common etiology for D.U. perforation. In this study mortality is 5%.**Conclusion :**Though mortality is high in critically ill patients of hollow viscus perforation, here probably mortality has reduced due to mini laprotomy done under local anesthesia. More studies are required to know more about This study.

Keywords: Hollow viscus perforation, morbidity, mortality.

Introduction

Hollow viscus perforation is a common abdominal emergency having high mortality and morbidity [1]. Mortality is especially high in critically ill patients. Majority of patients present late, some patients with more contamination and abdominal compartment syndrome Which further reduces venous return and aggravates shock.

These critically ill patients with compartment pressure more than 25 cm of NS are taken for the study. These patients are risky for anesthesia and chances of collapse during anesthesia is high. Here we have tried to prevent those patients with increased abdominal compartment pressure from collapsing during anesthesia by managing in a different way.

These critically ill patients after adequate resuscitation are taken to operation table. Small (5-6cm) midline incision made in abdomen under local anesthesia. Both skin and peritoneum are anesthetized. Once a small incision taken in Peritoneum all air and majority of fluid sucked with savage sucker. This led to decreased intra abdominal compartment pressure. Venous return improves, blood pressure which was <90 mm Hg improved to >100 mm Hg. later skin closed. After few minutes of further resuscitation, regional or general anesthesia given, routine surgery done[1-3].

Materials and methods.

Here 20 cases of decompensated (Bp<90 mm Hg) and grossly distended abdomen cases of hollow viscus perforation patients with compartment pressure more than 25 cm NS are taken for the study.

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Compartment pressure is measured with foley catheter connected to manometer. Stable patients and appendicular perforations are excluded from the study. Patients are treated In chamarajanagar, Karnataka, India, from January 2016 to February 2020. All our patients presented with pain abdomen guarding, rigidity. patients had dehydration,tachycardia,decreased urine output. X-ray erect abdomen showed gas under diaphragm in all our patients. Patients resuscitated with fluids, broad spectrum antibiotics and metronidazole.

Those patients whose general condition improved after resuscitation are not included in the study. Those patients whose general condition not improved well, BP<90 mm of Hg, gross distention abdomen with abdominal compartment pressure more than 25 cm of NS are taken for the study. All these patients are taken to operation theater. Under local anesthesia small incision(5-6cm) taken in the midline, peritoneum anesthetized and small opening done. once peritoneum is opened all gas and most of the fluid evacuated with savage sucker. Once distention relieved, skin closed. After few minutes(15-30 minutes) BP improved to >100 mm Hg in majority of patients. Inotropes are also given in majority of patients. After 30 minuets regularlaprotomy done under regional or general anesthesia. During laporotomy viscera inspected, site of perforation located, appropriate procedure performed, peritoneal toilet given, drain kept when ever necessary, abdomen closed. Post operatively patients kept nil orally for 3-4 days, ryles tube aspiration done, antibiotics ,analgesics given. Vitals monitored, I/O maintained, recovery observed, complications noted.

Results

Results obtained in the present study are analyzed as follows

Table 1:Age distribution

Age	No of patients	Percentage
< 20 years	02	10%
20 -40 years	08	40%
40 -60 years	08	40%
>60 years	02	10%
Total	20	100%

Majority patients are between 20 -60 years (16 patients)(80%)

Table 2:Sex distribution

Sex	No of patients	Percentage
Male	16	80%
Female	04	20%
Total	20	100%

In this study there were 16 male (80%) and 04 female(20%) patients were found

Table 3:Site of perforation

Site	No of cases	Percentage
Duodenal ulcer	16	80%
Typhoid ulcer(ileum)	04	20%

Most common perforation was in the first part of Duodenum and terminal pylorus ,in 4 (20%) cases it was typhoid perforation(ileum).

Table 4:Relation between sex and site of Perforation

Sex	Duodenal ulcer	Enteric
Male	13	03
Female	03	01
Total	16	04

Table 5:Etiology & Site of Perforation

Etiology	Duodenal ulcer	ileal
Only smoking	06	
Smoking & Alcohol	05	
NSAID drug intake	02	
No cause	03	
Typhoid fever		04

Smoking and alcohol intake are the most common etiology for D.U. perforation. Typhoid fever is the common cause of ileum perforation.

Table 6:Signs and symptoms.

Symptoms and signs	No. of patients	Percentage
Pain abdomen	20	100%
Vomiting	15	75%
Fever	12	60%
Distention abdomen	20	100%
Guarding & Rigidity	20	100%
Obliterated liver dullness	18	90%
Gas under diaphragm	20	100%
Free fluid in the abdomen	20	100%
Bowel sounds absent	17	85%
Air fluid levels	08	40%
Widal test positive	04	20%

All patients had pain abdomen, Guarding rigidity and gas under diaphragm. All patients had tachycardia, low BP and widal test was positive in all ileal perforations.

Table 7:Diagnosis and surgical procedure done.

Diagnosis	Procedure done	No.of patients
D.U. perforation	Closure of perforation with omental patch	16
Ileal perforation	Trimming of edges and closure	02
	Resection of small segment and anastomosis	02

Table 8:Complications

Complications	No.of patients	Percentage
Wound infection	8	40%
Wound dehiscence	2	8%
Ilial leak	1	4%
Mortality	1	4%

Wound dehiscence occurred in two patients and ileal leak occurred in one patient with ileal perforation. These patients are managed conservatively and improved after few days. One mortality occurred in an elderly (70 year) patient with D.U. perforation.

Discussion

Hollow viscus perforation is one of the common surgical emergency. D.U. perforation is the commonest cause. Patients condition depends on amount of contamination,which inturn depends on time following perforation, oral intake, size of perforation. Majority of

patients comes in shock. Resuscitation improves condition. In some patients who will have gross distention of abdomen will have compartment syndrome and will have decreased venous return. This type of patients will have poor general condition, many of them will not recover well after resuscitation, these patients are high risk for anesthesia, and chances of collapsing during anesthesia is high. This type of patients are managed in a different way, mini laparotomy done under local anesthesia, after this majority of patients improved. BP improved by 10 to 20 mm of Hg, urine output started increasing. Pain was there during handling of peritoneum. Later regular surgery done. With All this one patient died during anesthesia. All other patients survived, few patients had some morbidity.Various studies show mortality for hollow viscus perforation ranging from 0 to 10-20%. Following table shows mortality in various studies.

Table 9: mortality in various studies

Kemparaj t et al [2]	13.8%
Jhobta et al [3]	10.1%
Quereshi [4]	15%
Nishida [5]	13.1%
Dorairajan [6]	9.2%
Dandapat [7]	15%
Shah [8]	6.4%
Kachroo [9]	8.8%
Our study	5%

In our study mainly critical patients are included in spite mortality is low.

In our study majority are due to D.U. perforation. Rest are due to typhoid perforation. Smoking is the most important predisposing factor for D.U. perforation, then alcohol, and NSAID. Probably mortality has been reduced due to this methodology. Earlier bed side laparotomies were done which were showed improvements. More studies are required to know much about this study.

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