



OBSERVATIONAL STUDY OF ETIOLOGY AND OUTCOME IN HOLLOW VISCUS PERFORATION

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ABSTRACT **Background:** Gastrointestinal perforation is a common abdominal emergency having a high morbidity and mortality. Missed diagnosis and late intervention are frequent causes of increased morbidity and mortality especially in patients who survive the initial phase of insult. Diagnosis and treatment of gastrointestinal perforation remains a formidable problem in our country. **Aim & Objectives:** To compare certain common etiologies and their outcomes in the following diseases and sites respectively Acid Peptic Disease–Duodenal/Gastric Typhoid- Ileal Diverticulitis-Colon Trauma-Any Part **Methods:** Retrospective observational study of 50 Operated Patients done in Government Medical College Surat during period of September 2019 to December 2020 According to Inclusion and Exclusion Criteria. Data is analysed using descriptive statistics (Percentage, Proportions). **Results & Conclusion:** Among 50 cases of hollow viscus perforation, Peptic perforation was common (33 out of 50 cases). Next being Ileal perforation. Jejunum was common site of perforation in blunt abdominal trauma. Peptic Perforations are more commonly seen in 40-60yrs of age group with alcohol and smoking as their addiction, with worker as occupation. Typhoid Perforations are more commonly seen in 20-40yrs of age group. In this study except for wound dehiscence in 4 cases which needed secondary suturing, no major morbidity noted. 4% mortality noted in the present study.

KEYWORDS : Penetrating Abdominal Trauma, Blunt Abdominal Trauma, Morbidity, Mortality

INTRODUCTION

Gastrointestinal perforation is a common abdominal emergency having a high morbidity and mortality. Missed diagnosis and late intervention are frequent causes of increased morbidity and mortality especially in patients who survive the initial phase of insult. Diagnosis and treatment of gastrointestinal perforation remains a formidable problem in our country. A great majority of perforation of stomach and duodenum are due to complications of peptic ulceration. Perforation of large intestine represents a major surgical challenge to the clinician. Since it is a rapidly fatal condition death being caused by sepsis from peritoneal contamination with various pathogens both aerobic and anaerobic. Main aims of treatment are to control sepsis, to minimise contamination and treat the underlying cause. Surgery plays an important role in the management of perforation. The structure of the hollow viscera is more fragile than Parenchymatous organ and even minor degrees of trauma can cause serious injury. This clinical study was undertaken to find the age and sex incidence and etiological factors and clinical features of different types of perforations. It also assesses the common type of perforations and its presentations, complications arising post operatively and finally to analyse the prognosis in our setup from the basis of present study.

AIMS & OBJECTIVES

To compare certain common etiologies and their outcomes in the following diseases and sites respectively
Acid Peptic Disease– Duodenal/Gastric
Typhoid-ileal
Diverticulitis-Colon
Trauma-Any Part

METHODS

This is a Retrospective observational study of 50 patients done in Tertiary Teaching Hospital during period of September 2019 to December 2020. All cases of this study group were subjected to preoperative standard investigations and after preoperative resuscitative measures exploratory laparotomy were performed and after identifying site of perforation suitable standard surgical procedures adopted.

During Study Period, Cases are approached in a backward pattern, starting from the most recent surgery and going backwards till 50 cases are completed fulfilling the inclusion and exclusion criteria.

Inclusion Criteria:

- (1) Patients who are operated case of Hollow Viscus Perforation
- (2) Aged above 18 years and less than 60 years

Exclusion Criteria:

- (1) Aged below 18 years and above 60 years
- Data is entered in Microsoft Excel sheet and analyzed using descriptive statistics (Percentage, Proportions).

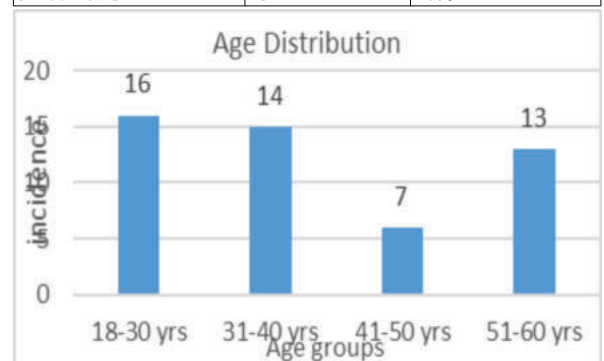
RESULTS & DISCUSSION

The study of 50 cases of Hollow Viscus Perforation, operated in emergency was done from which following observations were derived and discussed with other studies.

Age Incidence:

Table/Fig-1 : Age Distribution:

Age Distribution	Incidence	Percentage
18-30 Years	16	32%
31-40 Years	14	28%
41-50 Years	7	14%
51-60 Years	13	26%



Table/Fig-2: Distribution of Patients based on Age

The highest incidence was observed in 2nd decade of life, which is peak active period. This may be due to stress and strain during that period. The youngest patient was 19 years. This is compared with following studies.

Table/Fig 3: Age distribution comparison with various authors

Authors	Peak Age in Years
Parimala S. Devi(1)	20-30
DP Velappan(2)	21-40
Mali Nishkanth(3)	41-50
S.Das(4)	30-50
Present Study	18-30

Sex Incidence:

Perforation is more common in males compared to females because of more association with smoking and alcohol. The ratio being 9:1. Out of 50 cases 44 were male and 6 were female.

Table/Fig 4: Gender Distribution

Sex	Incidence	Percentage
Male	44	88%
Female	6	12%



Table/Fig 5: Distribution based on gender

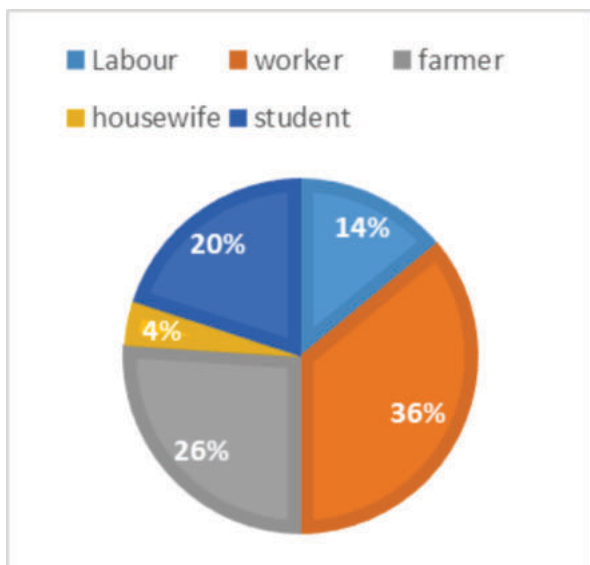
This is compared with the following study

Table/Fig 6: Gender Incidence Comparison With Various Authors

Authors	Male: Female Ratio
Parimala S. Devi(1)	10:1
DP Velappan(2)	6:1
Mali Nishkanth(3)	2:1
S.Das(1194)(4)	12.1 to 20:1
Present Study	09:1

Table/Fig 7: Occupation of subjects

Occupation	Incidence	Percentage
Labourer	7	14%
Farmer	13	26%
House wife	2	4%
Student	10	20%
Worker	18	36%



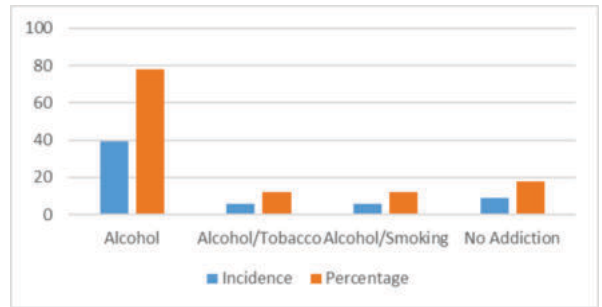
Table/Fig 8: Occupation distribution of subjects

It is believed that perforation occurs in those people who is engaged in heavy manual labour. Mac. Kay. C et al(5) in relatively Large Study 5343 cases in Scotland, found highest incidences in fisherman, farm

labourers and heavy manual worker.

Table/Fig 9: Addictions of Subjects

Addiction	Incidence	Percentage
Alcohol	39	78
Alcohol/Tobacco	7	14
Alcohol/Smoking	6	12
No Addiction	8	16



Table/Fig 10: Addictions of Subjects

Relation with Smoking and Alcohol:

Among 50 patients only 9 patients had no history of alcoholism and smoking. The incidence of perforation is more in cases of smokers and alcoholics. Parimala S. Devi(1) and DP Velappan(2) showed that chronic smoking increased the risk of perforation to 10 fold in the age group of 15- 74yrs.

Relation of Addictions in Peptic Perforations:

Among 33 Peptic Perforations , all patients are having either smoking (or) alcohol (or) tobacco chewing as their addiction.

Table/Fig 11: Relation of addictions with Peptic Perforation

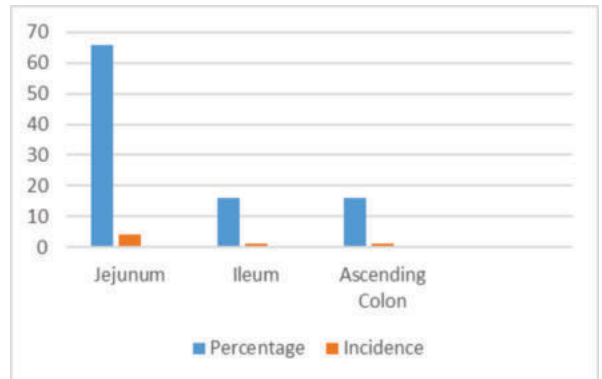
Addiction	Incidence	Percentage
Alcohol	29	87
Smoking	5	15
Tobacco	7	21

Site of perforation:

Among 50 patients, 6 were traumatic perforations. Three due to blunt abdominal trauma, Three due to penetrating abdominal trauma.

Table/Fig 12: Incidence of Traumatic Perforation

Site of Perforation	Incidence	Percentage
Jejunum	4	66
Ileum	1	16
Ascending Colon	1	16



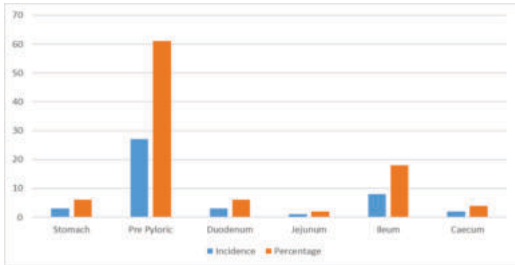
Table/Fig 13: Traumatic Perforation Incidence

Among 4 Traumatic Jejunal Perforations, three were due to Blunt Abdominal Trauma.Among 3 Penetrating Abdominal Injuries, one in Jejunum, other in Ascending colon, another in Ileum. In our study, Jejunum was common site of perforation in blunt abdominal trauma

Table/Fig 14: Diseased Perforations Incidence

Site Of Perforation	Incidence	Percentage
Stomach	3	6
Pre Pyloric	27	61

Duodenum	3	6
Jejunum	1	2
Ileum	8	18
Caecum	2	4



Table/Fig 15: Incidence of Diseased Perforations

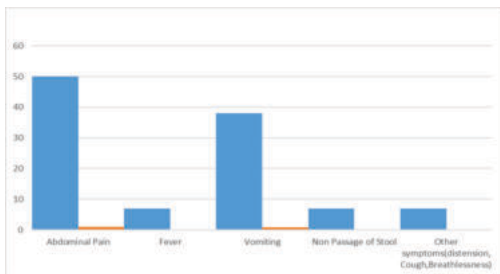
Among 50 patients, 44 were diseased perforations. No Perforations noted in rectum, urinary bladder and gall bladder. Pre pyloric perforation was the most common. DP Velappan(2) and Mali Nishanth(3) showed that the most common site of perforation in their study was duodenal perforation in its anterior wall and first part of duodenum. In Present Study, Peptic Perforations are more commonly seen in 40-60yrs of age group with alcohol and smoking as their addiction, with worker as occupation. Among 8 diseased ileal perforations, 5 were due to typhoid perforations, 2 were due to abdominal TB, 1 due to intestinal worms. In Present Study, Typhoid Perforations are more commonly seen in 20-40yrs of age group.

Symptoms and Signs

Pain was the main presenting symptom in all cases and onset was acute in all of them. Nausea and vomiting was present in 38 patients started along with pain in abdomen and contained food particles and bile. Fever was present in 7 cases and Difficulty in passing stool was present in 7 cases. Abdominal tenderness was present in all 50 cases. Guarding was present in 23 cases and rigidity was present in 24 cases.

Table/Fig 16: Symptoms

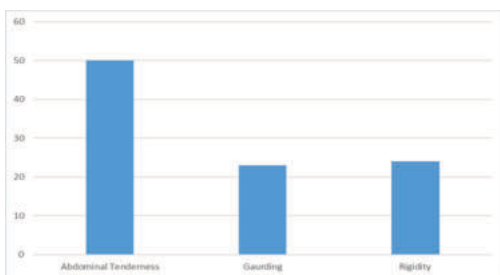
Symptoms	Incidence	Percentage
Abdominal Pain	50	100%
Fever	7	14%
Vomiting	38	76%
Non Passage of Stool	7	14%
Other symptoms(distension, cough, breathlessness)	7	14%



Table/Fig 17: Symptoms and Incidence

Table/Fig 18: Signs

Signs	Incidence	Percentage
Abdominal Tenderness	50	100%
Guarding	23	46%
Rigidity	24	48%



Table/Fig 19: Signs and Incidence

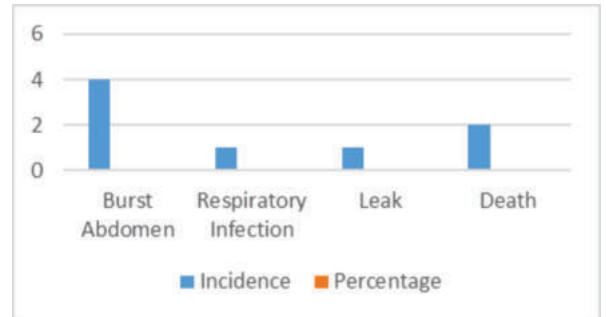
Radiological investigations:

Plain X ray abdomen in erect posture was done in all 50 cases and free gas under the diaphragm was found in 41 cases.

Postoperative Complications:

Table/Fig 20: Incidence of Postoperative Complications

Complications	Incidence	Percentage
Burst Abdomen	4	8%
Respiratory Infection	1	2%
Leak	1	2%
Death	2	4%



Table/Fig 21: Incidence of Postoperative Complications

In this present study, among 50 patients studied, most common postoperative complication was Burst Abdomen in about 4 cases. 1 patients had leak. 1 had respiratory infection and we found 4 % mortality.

Among 50 patients, 4 patients developed burst abdomen. In all patients mass closure of abdomen done in interrupted manner using prolene I as suture material and suturing was done by PG resident. 4 patients developed burst abdomen

- (1) Pre pyloric perforation - secondary to covid infection and steroids.
- (2) Ileal perforation - secondary to poor wound hygiene by patient.
- (3) Traumatic Jejunal Perforation - secondary to postoperative pelvic collection.
- (4) Pre pyloric Perforation - secondary to intraoperative high contamination.

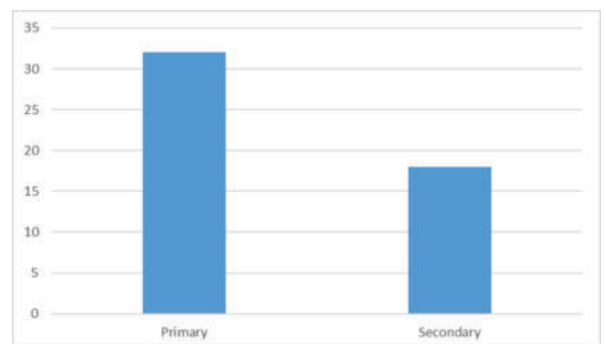
Among 50 patients, mortality was seen in 2 patients secondary to Septic shock.

Skin Closure

Primary closure is the one in which skin is closed during the operative procedure (same sitting), when contamination was minimal. Whereas in secondary closure, skin is kept open during the operative procedure, when contamination was moderate and closed after 72 hours of the primary surgery.

Table/Fig 22: Skin Closure

Closure	Incidence	Percentage
Primary	31	64%
Secondary	17	36%



Table/Fig 23: Type of Skin Closure done in Subjects

Among 50 patients , 2 patients expired due to secondary to Septic shock.

Skin Closure and Wound Complications**Table/Fig 24: Skin Closure vs Wound Complications**

Closure	Incidence	Wound Complications
Primary	30	0
Secondary	14	0

CONCLUSIONS

This is a Retrospective study consisting of 50 cases of hollow viscus perforation of abdomen selected from surgical units of Teaching Hospital from September 2019 to December 2020. All case of this study group were subjected to preoperative standard investigations and after preoperative resuscitative measures exploratory laparotomy were performed and after identifying site of perforation suitable standard surgical procedures adopted. The results obtained in the present study were analysed and following conclusions were drawn:

- Among hollow viscus perforation, Peptic perforation was common (33 out of 50 cases). Next being Ileal perforation.
- Age group of 18-30 years were affected mainly.
- Males are affected more than females.
- Jejunum was common site of perforation in blunt abdominal trauma.
- Peptic Perforations are more commonly seen in 40-60yrs of age group with alcohol and smoking as their addiction, with worker as occupation.
- Typhoid Perforations are more commonly seen in 20-40yrs of age group.
- Signs and symptoms of acute abdomen like acute abdominal pain vomiting fever may present tachycardia, hypotension, abdominal tenderness guarding rigidity.
- In this study except for wound dehiscence in 4 cases which needed secondary suturing, no major morbidity noted.
- 4% mortality noted in the present study.

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