



International Journal of Surgery Science

E-ISSN: 2616-3470
P-ISSN: 2616-3462
© Surgery Science
www.surgeryscience.com
2020; 4(3): 362-365
Received: 28-05-2020
Accepted: 30-06-2020

Dr. Govindaraj A
Post Graduate, Dept of General
Surgery, Rajah Muthiah Medical
College and Hospital, Annamalai
Nagar, Chidambaram, Tamil
Nadu, India

Dr. Anvar Ali A
Professor, Dept of General Surgery,
Rajah Muthiah Medical College
and Hospital, Annamalai Nagar,
Chidambaram, Tamil Nadu, India

Dr. Ravisankar P
Associate Professor, Dept of
General Surgery, Rajah Muthiah
Medical College and Hospital,
Annamalai Nagar, Chidambaram,
Tamil Nadu, India

Dr. Prema M
Associate Professor, Dept of
General Surgery, Rajah Muthiah
Medical College and Hospital,
Annamalai Nagar, Chidambaram,
Tamil Nadu, India

Dr. Premkumar T
Assistant Professor, Dept of
General Surgery, Rajah Muthiah
Medical College and Hospital,
Annamalai Nagar, Chidambaram,
Tamil Nadu, India

Dr. Ram Prasath E
Post Graduate, Dept of General
Surgery, Rajah Muthiah Medical
College and Hospital, Annamalai
Nagar, Chidambaram, Tamil
Nadu, India

Corresponding Author:
Dr. Anvar Ali A
Professor, Dept of General Surgery,
Rajah Muthiah Medical College
and Hospital, Annamalai Nagar,
Chidambaram, Tamil Nadu, India

A prospective study on non traumatic hollow viscous perforation

Dr. Govindaraj A, Dr. Anvar Ali A, Dr. Ravisankar P, Dr. Prema M, Dr. Premkumar T and Dr. Ram Prasath E

DOI: <https://doi.org/10.33545/surgery.2020.v4.i3f.524>

Abstract

Background: Non traumatic hollow viscous perforation is one the most common surgical emergency presenting to casualty. An acute perforation is estimate to occur in 2% to 10% of patients with duodenal ulcer.

Materials and Methods: It was a prospective study conducted on cases of non traumatic hollow viscous perforation admitted in surgical ward durning the period of October 2018 to October 2020. The patients admitted with non traumatic hollow viscous perforation were taken up for study and analyzed. Among the 50 patients taken up for study, they were prospectively analyzed and followed up. Patients satisfying the inclusion criteria and who gave consent were taken up for study. A clinical history, examination and appropriate investigation were done. After clinical assessment and basic investigation, patient were first actively resuscitated after nasogastric aspiration with intravenous fluid, antibiotics and analgesics. Urine output and vitals monitored. In laparotomy the site and size of perforation and various associated pathologies regarding the intra operative findings were elicited and worked up for the extent of disease and assessment of morbidity and mortality.

Result: A maximum number of perforation was found in age group of 61-70. Male predominance with male to female ratio of 9:1. Perforation was most common in patients with "O" blood group.

Conclusion: Non traumatic hollow viscous perforation is due to multiple cause like acid peptic disease, infection, injudicious use of non steroidal anti inflammatory drugs, tumour. Male have higher incidence due to smoking and alcoholism so lifestyle modification may reduce the incidence of perforation in men.

Keywords: prospective study, non traumatic, lifestyle modification

Introduction

The knowledge of perforation dates back to over 2000 years remote past when sushrutha the great Indian surgeon described it as parinamashula giving the relation of food, pain, vomiting. Mural to first described duodenal ulcer at autopsy in 1688. Hippocrates described face of terminal peritonitis as Hippocrates fancies in 460BC^[1]. Non traumatic Hollow viscous perforation is defined as perforation of hollow viscous presenting as acute abdomen with or without extra luminal air on radiology. Despite the widespread use of anti secretory agents and eradication therapy, the incidence of perforated peptic ulcer has changed little. However, there has been considerable change in the epidemiology of perforated peptic ulcer in west over the last two decades. Previously most patients were middle aged, with time there has been steady increase in age of patients suffering this complication^[2]. There are multiple causes for perforation like peptic ulcer disease, infections, trauma, malignancy, closed loop obstruction, diverticulitis, foreign body ingestion. The most common cause of hollow viscous perforation is peptic ulcer disease^[3]. The incidence of perforation has been reported to be 2% to 5% with peptic ulcer disease. Perforated peptic ulcer disease carries significant morbidity and mortality in old age patients, because many patients are elderly and have comorbidities^[4]. The classical symptoms of hollow viscous perforation are abdomen pain, abdominal distention, fever, vomiting. Signs of hollow viscous perforation include tenderness, guarding, rigidity, abdominal distention, dehydration due to third space loss, and reduced urine output. Radiological investigation shows air under diaphragm on X-ray and free fluid on ultrasound, CT abdomen shows pneumoperitoneum with free fluid abdomen. Primary resuscitation followed by exploratory laparotomy was done in all cases. In this study I have statistically analyzed the incidence of non traumatic hollow viscous perforation at different site in GIT (excluding

appendicular perforation) and various etiology, size of perforation and other details related to perforation during the period of October 2018- October 2020.

Materials and Method

This is a observational study, entitled A prospective study on non traumatic hollow viscous perforation Carried out on 50 patients admitted in department of general surgery in rajah Muthiah medical college and hospital during the period October 2018 to October 2020.

Inclusion criteria

All patients with non traumatic hollow viscous perforation between age 15 - 80 years admitted in rajah Muthiah medical college and hospital.

Exclusion Criteria

1. Patients aged below 15 years and above 80 years
2. Patients with traumatic perforation
3. Patients with appendicular perforation
4. Patients who did not give consent for the study
5. Pregnancy

All patients suspected of hollow viscous perforation with symptoms of abdominal pain, abdominal distention, vomiting, fever were initially admitted in emergency ward and transferred to surgical ward. On admission, patient were resuscitated, followed by history taking and clinical examination done.

Patients demographic details such as age, gender, residence, occupations, socio economic status. Complaints of abdominal pain, abdominal distention, fever, vomiting, reduced urine output were recorded with duration. History of non steroidal anti inflammatory drug intake, alcohol consumption, smoking were recorded. Co-morbid condition such as diabetes mellitus, hypertension, tuberculosis, seizure disorder, respiratory problems were recorded with duration and treatment. History of previous surgery, if any was recorded. Blood investigation such as complete blood count, renal function test, serum electrolyte, blood grouping and typing, liver function test done followed by radiological investigation. Ryle's tube and foley's catheterisation was done. Close observation of patients vitals with urine output was done. After stabilizing the patient was shifted to operation theatre for exploratory laparotomy. On laparotomy site, size of perforation and associated pathology if any was recorded. Patient were followed up for 6 months following surgery.

Statistical analysis was done from the above data. The ethical committee clearance was obtained from institutional Ethical committee.

Results

- Maximum number of hollow viscous perforation was observed in age group of 61-70 years (26%) followed by 51-60 years (20%) and 41-50 years (20%), 21-30 years (18%), 31-40 years (06%).
- Hollow viscous perforation was more common in male (90%) than females (10%) in a ratio of 9:1
- The most common of non traumatic hollow viscous perforation was acid peptic disease (94%) followed by infection (4%), tumour (2%)
- Hollow viscous perforation was common in low socioeconomic group.

- Mortality was seen in 2 patients (4%) due to septic shock.
- Most common form of addiction in patients with hollow viscous perforation was alcohol with smoking (70%).
- 50% of cases with non traumatic hollow viscous perforation present with past history of analgesic abuse.
- Hollow viscous perforation was common in alcoholic 42 (84%) patients of the 50 were chronic alcoholics
- Hollow viscous perforation was common in smoker than non smoker. out of the 50 patients in the study 33 (66%) patients were smokers
- Perforation was common in "O" blood group (40%) followed by "A" blood group patients (30%), "B" blood group (24%), "AB" blood group (6%).
- The most common site of non traumatic hollow viscous perforation was stomach (60%) specifically pyloric region followed by duodenum (36%), anterior wall of D1, followed by ileum (4%).
- The size of perforation was <1 cm in 36 (72%) of patients, 1-2cm in 11 (22%) and more than 2cm in 3(6%).
- 40% patient developed some form of postoperative complications like surgical site infection, respiratory complications, dyselectrolytemia, burst abdomen, bed sore.
- Most common presenting complaint was abdominal pain (96%), followed by abdominal distention (80%), vomiting (74%), fever (44%).
- The most common finding on general examination was Dehydration (80%), tachycardia (68%), hypotension (44%), pallor (32%).
- On abdominal examination tenderness (100%) was the most common finding, guarding/ rigidity (86%), abdominal distention (70%).
- Anemia (56%) was the commonest hematological finding followed by leucocytosis (36%)
- Air under diaphragm was the most common radiological finding (80%), this was seen more on X-ray abdomen erect than chest X-ray.
- All patients underwent exploratory laparotomy with omental patch closure (96%), simple closure with proximal ileostomy in (4%).
- Surgical site infection was most common postoperative complication followed by respiratory complications and dyselectrolytemia.
- The mean duration of hospital stay of patients with non traumatic hollow viscous perforation was 8 days.

Table 1: Age Distribution

Age	Number of cases	Percentage
<20 years	01	02%
21-30 years	09	18%
31-40 years	03	06%
41-50 years	10	20%
51-60 years	10	20%
61-70 years	13	26%
71-80 years	04	08%
Total	50	100%

Table 2: Gender

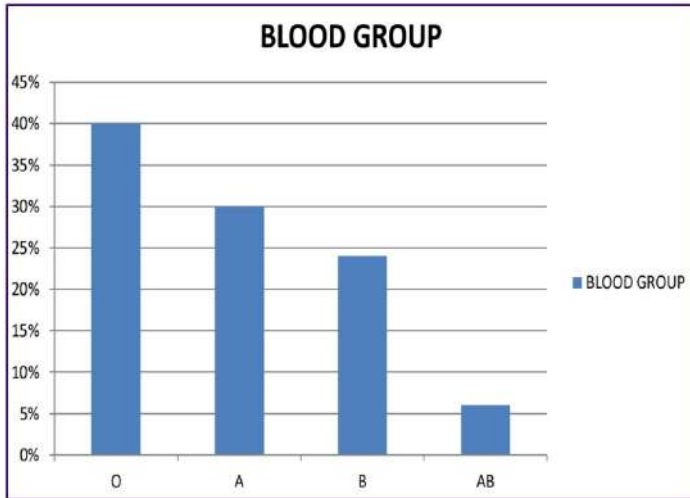
Gender	Number of cases
Male	45
Female	05

Table 3: Etiology

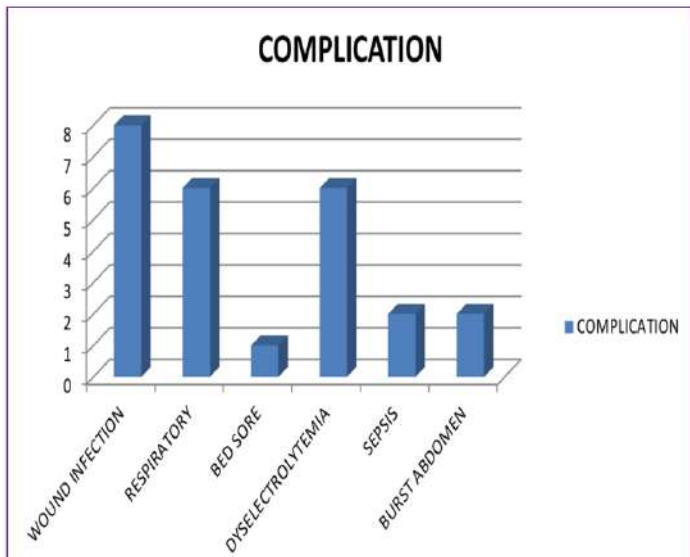
Etiology	Number of cases
Acid peptic disease	47 (94%)
Infection	02 (4%)
Tumour	01 (02%)

Table 4: Site of perforation

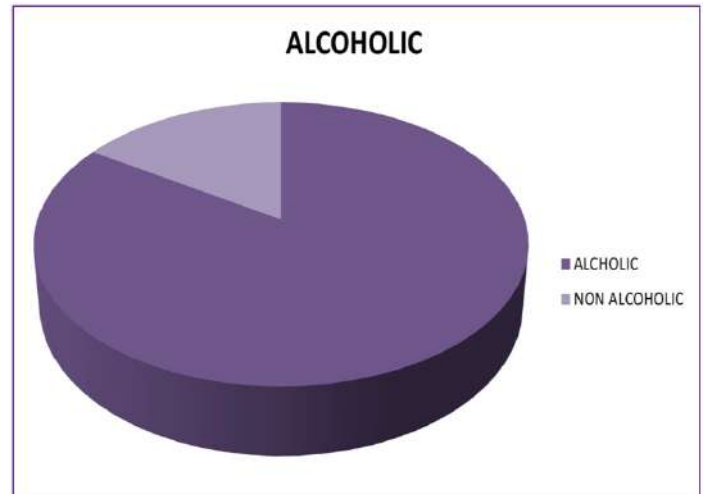
Site	Number of cases
Stomach	30
Duodenum	18
Ileum	2



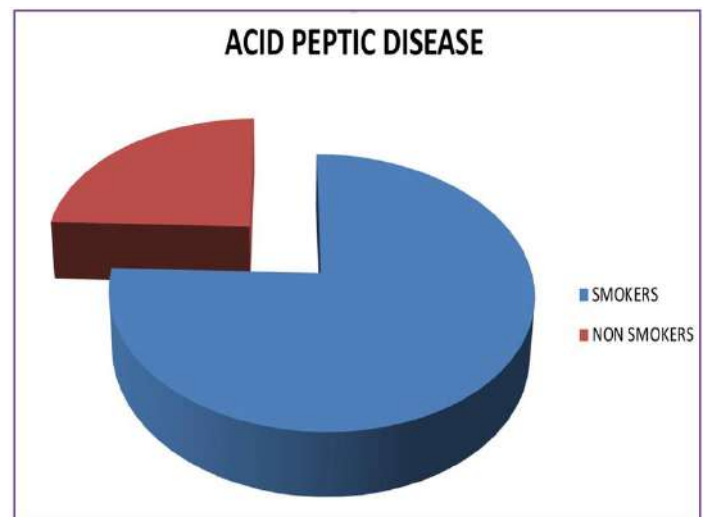
Graph 1: Blood Group



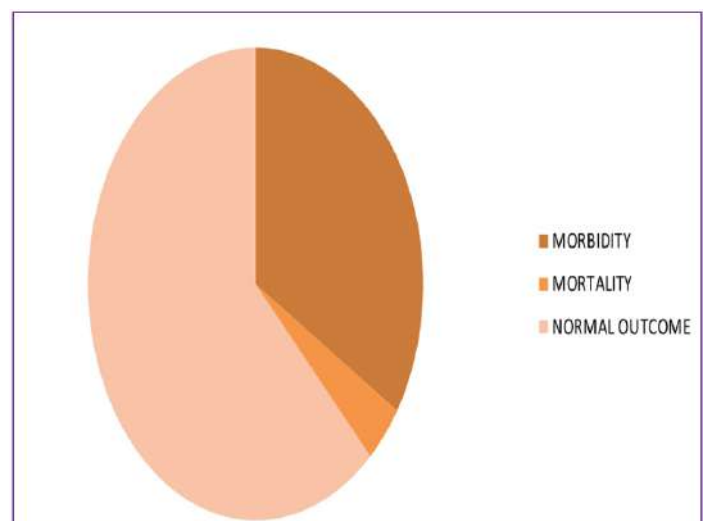
Graph 2: Complication of perforation



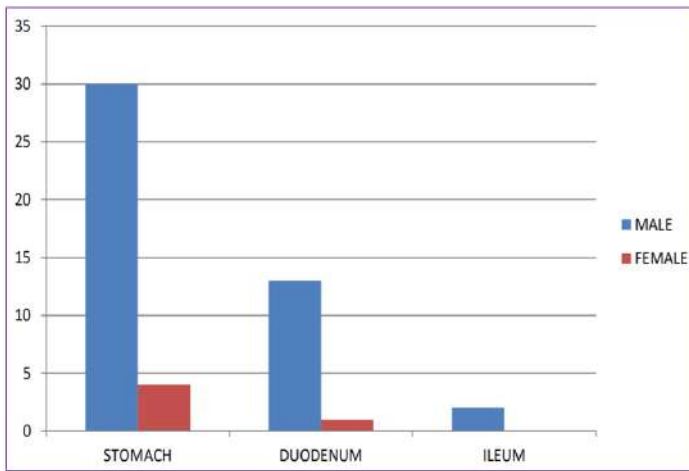
Graph 3: Relation of Alcohol and perforation



Graph 4: Acid peptic disease and smoking



Graph 5: Clinical Outcomes



Graph 6: Site of perforation relation to gender

Discussion

In general, the incidence rates of emergency surgery, hospital admission and mortality of perforated peptic ulcer have remained stable throughout last 2 decades [5]. Of note, the mortality rate of perforated ulcer is higher in elderly and higher after gastric than duodenal perforation. Hollow viscous perforation is one of the commonest acute abdomen surgical condition. Though perforation in proximal region is more common in developing world, distal perforation more common in western world, it has wide geographic variation also [6]. It has been demonstrated that within first 6 weeks of medical therapy for newly diagnosed ulcer, complications of haemorrhage, perforation or obstruction developed in 3% to 6% of patients [7]. In the present study hollow viscous perforation was more common in males with male to female ratio of 9:1. This is similar to that of brajandra *et al.* (2016) study probably due to alcohol consumption and smoking. In the present study gastric perforation was more common.

In the present study perforation is more common in 61- 70 age group followed by 51-60 years, 41-50 years, 21-30 years.

Peptic perforation occurred more commonly in farmers followed by labourer, house wives probably due to low socioeconomic status, mental stress, and injudicious use of analgesics.

H.pylori infection is more common in low socioeconomic group. The mean prevalence of *H.pylori* infection in patients with perforated peptic ulcer is 60% as opposed to 90% to 100% figure reported in uncomplicated ulcer disease.

Alcohol, tobacco and excessive smoking have been blamed as associated cause of peptic ulcer. The influence of alcohol has been emphasised by author Parmar (2012) [8] and Al- marsoumi (2013) [9].

In this study, the most common site of perforation was duodenum followed by stomach, ileum. By far the most common site of perforation is the anterior aspect of duodenum [2].

In this series perforations was most common "O" blood group cases followed by "A" blood group, "B" blood group, "AB" blood group similar to Clark (1985). This may be due to the higher incidence of acid peptic disease in blood group "O" patients.

Tobacco and alcohol addiction was seen in 70% population in this study, which may be the cause for higher incidence of perforation in males. Addiction of both is associated with higher incidence of perforation than alone. Tobacco and alcohol have a synergistic effect. Lifestyle modification can reduce the incidence of hollow viscous perforation.

Conclusion

The incidence of peptic ulcer disease on raise. It is estimated that more than 50% of world population is infected by *H.pylori* infection, the most important factor responsible for peptic ulcer disease. The environmental factor like Alcohol consumption, smoking, consumption of spicy food, stress, injudicious use of analgesics all contribute to complications of peptic ulcer disease. The persistence of acid peptic disease is due in increase in causative factor of acid peptic disease with decrease mucosal resistance. Non traumatic hollow viscous perforation was diagnosed on clinical and radiological grounds. Life style modification such as abstinence from smoking, alcohol consumption which are modifiable factors, can reduce the incidence of non traumatic hollow viscous perforation and their by reduce overall burden of perforation.

References

1. Jeremy T. The peritoneum, omentum, mesentery and retroperitoneal space. 24th edition. In: Russel RCG, Williams NS, Bulstrode CJK, Bailey and love short practice of surgery. London: Arnold publisher; 2000, 1133-62.
2. Bailey and Love's short practice of surgery, 26th edition London chapter 64, 104-42
3. David Mahvi M, Seth Krantz B. Stomach. In, Courtney M. Townsend. Sabiston. Textbook of surgery the biological basis of surgical practice, 19th edition, Philadelphia, Elsevier, 2012, 1191.
4. Silas Chikinguwo M, James Maher W. Perforated duodenal ulcer. In, Josef E. Fischer(ed) Fischer's master of surgery, 6th edition, Lippincott Williams and Wilkins, Santa printers, 2012, 1030
5. Charles Yeo J, Daniel Dempsey T, Andrews Klein S, John Pemberton H, Jeffrey Peters H. Shackelford's Surgery of Alimentary Tract 6th edition volume 1, 823-24
6. Nitekci W. colonoscopies injuries. Asian J surg 1997;20:283-86.
7. Katkhouda N. Peptic ulcer surgery. Endosc surgery 1994;2:87-90.
8. Danubian JC, Naaeder SB, Clegg- Lamptey JN. Gastroduodenal peptic ulcer perforation East African medical journal, 2009, 86(3).
9. Al- marsoumi AM, Jabbo NS. Risk factors in perforated peptic ulcer: incidence and relation to morbidity and mortality. Mustansiriya Med J 2013;12:35-44.