

The Trends and Causation of Peptic Ulcer Perforation in Young Indians

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Abstract:

Introduction: Peptic ulcer perforation is the commonest surgical emergencies in India. Recent emergency surgical procedures show an increasing trend in perforation in young Indians. This study is carried out with an aim to understand the trend, causation and complications of hollow viscous perforation in young Indians.

Methods: A retrospective study of young adult Indian patients operated for emergency peptic ulcer perforation for two year period from May 2017 to April 2019 was carried out. The incidence, causative factors and complications were analysed.

Results: In a study of 200 patients, the incidence of hollow viscous perforation in the age group 21 to 30 years was found to be of 42.85%. 80% of them were males. 60% patients was of blood group O. Association with smoking and alcoholism was seen in about 64% and 66.6% respectively. In about 13.33% there was an association seen with history of NSAID/treatment with PPI'S. Duodenal perforation was found in 84.6%. In 90% of patients the perforation was less than 1cm. wound infection was the commonest complication among all patients. Mortality was seen in 3.33%.

Conclusion: Hollow viscous perforation shows an increasing trend in young adult males and this increased incidence shows association to smoking, alcoholism, irregular food habits, use of NSAIDS /Steroids and overall stressed lifestyle.

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I. Introduction

Perforation peritonitis is one of the commonest surgical emergencies faced by surgeons all over India.^{1,2} Of these peptic ulcer perforation is the commonest cause of peritonitis.³ These perforations are usually encountered in the first part of the duodenum anteriorly and in the pylorus of stomach. The occurrence of perforative peritonitis is associated with previous history of peptic ulceration in only few patients. The workup of peptic ulcer perforation includes x-ray abdomen, ultrasound, basic laboratory investigations and special investigation for Helicobacter pylori in places where facility is available

The role of contrast enhanced CTSCAN exists only in areas where diagnosis is doubtful. The only rational treatment of perforated peptic ulcer is surgery. Simple closure of the perforation with non-absorbable suture material and graham's omentopexy using tongue of greater omentum are the procedures of choice. The role of conservative treatment is in only sealed perforations with little contaminated fluid in the abdominal cavity with resolving pneumoperitoneum and hemodynamically stable patient.

Local bilateral flank drain placement is done in cases not fit for anesthesia and provides an interim management by drainage of the infected fluid from the abdomen till fitness is obtained for general anaesthesia.

There is variation in the pattern of peptic ulcer perforation from one geographical area to another. The demographic variation is due to different ethnic, cultural, food, lifestyle factors in different geographical areas. With the advent of proton pump inhibitors, the overall incidence of peptic ulcer disease and its definitive surgery has declined.

However, the incidence of peptic ulcer perforation is showing increasing trend among young Indian patients predominantly males. This may be due to association of acid hypersecretion with alcoholism, smoking, NSAID/steroid use, irregular diet and stressful lifestyle led by young adults in today's competitive era. Helicobacter pylori infection has also been implicated in complicated peptic ulcer disease.^{4,5}

Considering the changing scenario, an observational study was planned to understand the trend of peptic ulcer perforation among young Indian adults in emergency surgery department of tertiary teaching hospital over a three years period.

II. Materials and Methods

This prospective study was carried out in the department of general surgery in Mysore Medical College and Research Institute Mysore , India for a period of 2 years.

Study design: prospective observational study

Study location: department of general surgery , mysore medical college and research institute

Study duration: May 2017 to April 2019

Sample size: 112 patients

Inclusion criteria :

1. Cases operated in the emergency with perforated peptic ulcer.
2. 18 to 30 years of age.

Exclusion criteria:

1. Traumatic perforations.
2. Perforations of other parts of bowel.

Procedure methodology

All patients underwent thorough history taking and examination.

Chest X ray, X ray erect abdomen with both domes of diaphragm and ultrasound abdomen was done in all cases. Basic laboratory investigations were done, and laparotomy performed after adequate resuscitation.

Graham's omentopexy, thorough peritoneal lavage with about 4 to 5 litres of normal saline, abdominal drain placement was done.

Helicobacter Pylori kit was started in all recovered patients for 14 days. Helicobacter pylori testing was not done due to lack of diagnostic facility at our center.

Patients were followed up for a period of 3 months on outpatient basis after discharge.

Statistical analysis

Used were percentage, mean and standard deviation.

III. Results

The study was carried out on young patients (18-30yrs) admitted and operated for emergency peptic ulcer perforation in the Department of General Surgery in K.R. Hospital, Mysore from May 2017 to April 2019. The incidence and causative factors were analysed, and the results tabulated.

Table no 1 : age incidence

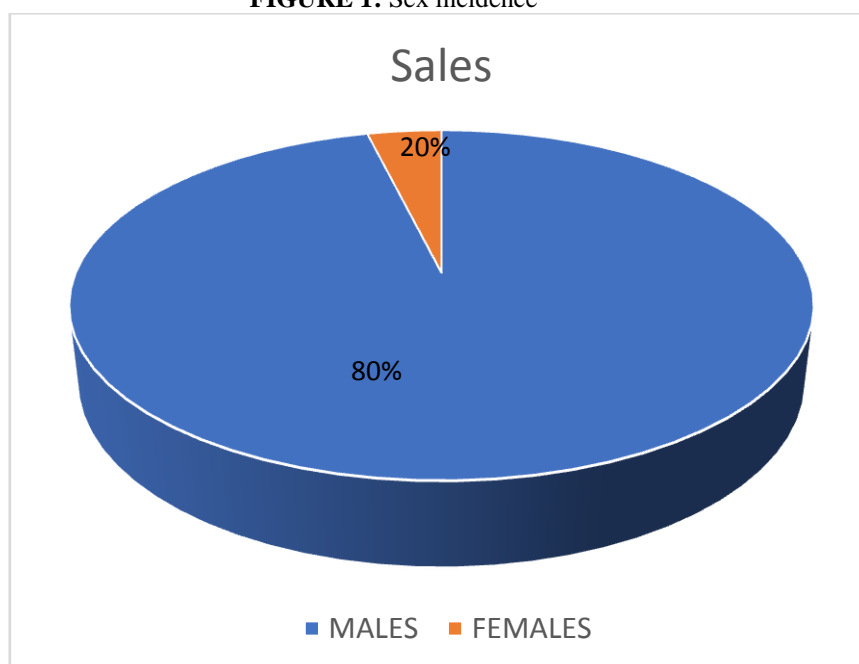
Age	No of patients	Percentage
0-17	0	0
18-20	2	1
21-30	40	35
31-40	26	24.8
41-50	24	22
51-60	16	15
61-70	3	2.8
71-80	1	1

In this study maximum age incidence of 35% was seen in 18-30 years of age group

The occurrence noted in 31 - 40 years age group was 25%

Least incidence was found in 71-80 years age group of around 1%.

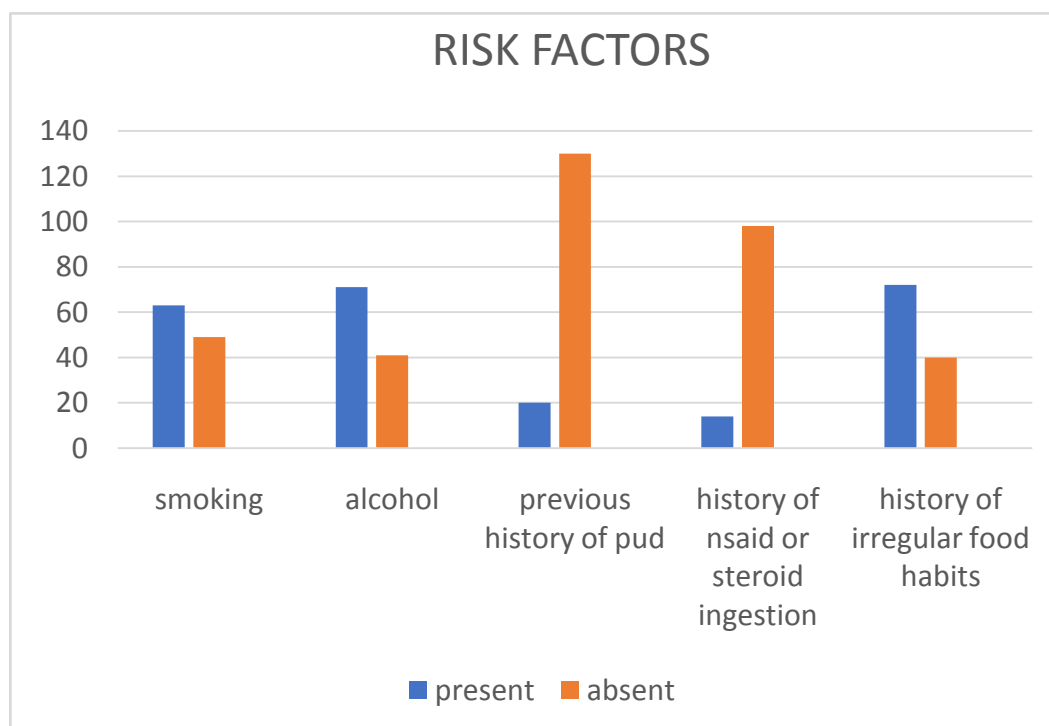
FIGURE 1: Sex incidence



In the present study of 112 patients of peptic ulcer disease 80% were males and 20% were females. Male to female ratio observed was 4:1.

This is perhaps due to increased association of the male sex with smoking, drinking, alcohol, stressed lifestyle and other factors.

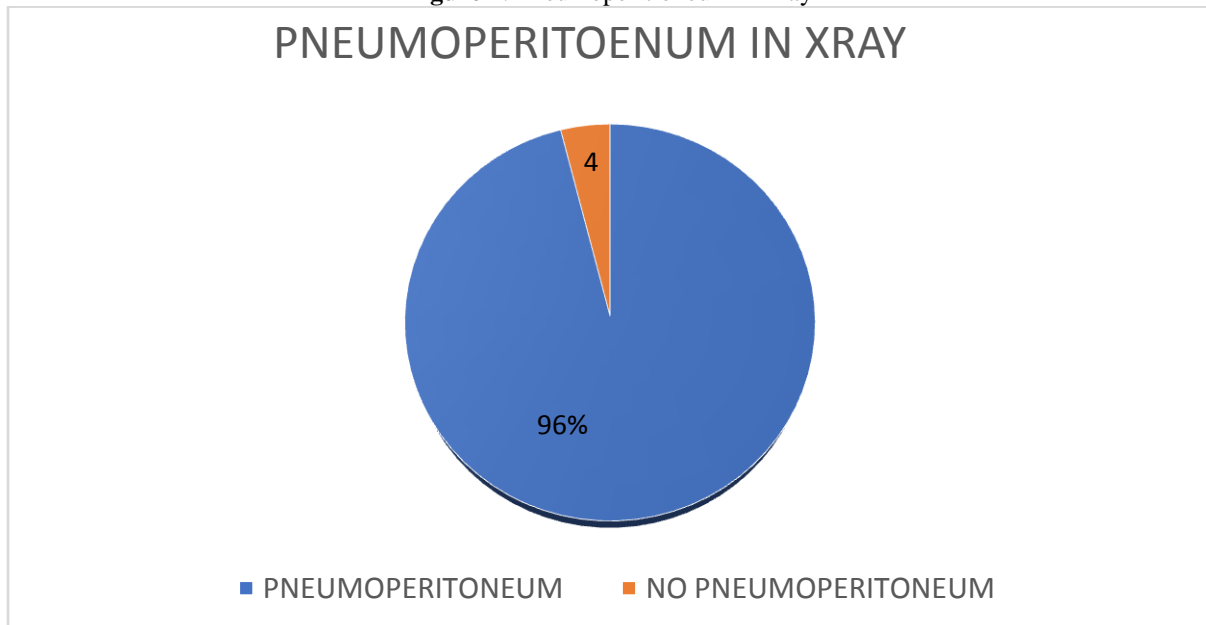
Table 2: risk factors



There was increased association with smoking (64%), alcoholism (66.6%) and irregular food habits (73.33%) among the patients with perforation. These factors predispose to hyperacidity like conditions. Previous history of peptic ulcer disease on treatment with proton pump inhibitors or H2 antagonists was present in

13.33%. There was positive history of NSAID/steroid ingestion in about 13.33% patients. Maximum incidence was seen in blood group O patients (58.66%) followed by blood group B (17.33%).

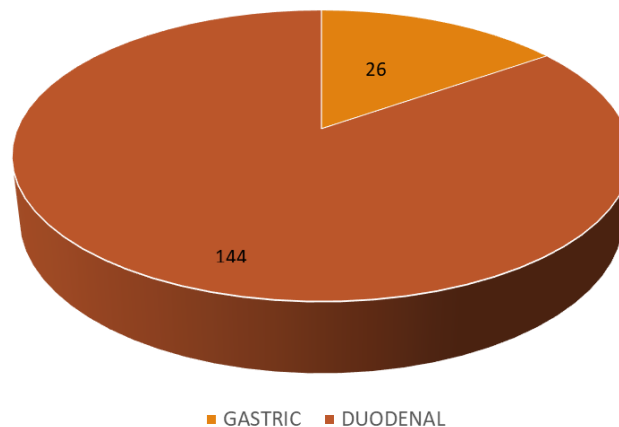
Figure 2: Pneumoperitoneum in xray



The X-ray positivity for pneumoperitoneum was seen in 96% of individual. In patients in whom x-ray was not confirmatory, ultrasound which showed evidence of septate collection or presence of free fluid was used to confirm the diagnosis.

Figure 3: Site of perforation

SITE OF PERFORATION



Intraoperatively duodenal perforation was found in 84.66% while gastric perforation was noted in 15.33% of patients. In 90% of patients perforation was less than 1cm. Large perforations larger than 1 cm was noted in only 15 patients.

IV. Discussion

Peptic ulcer perforation is the commonest surgical emergency requiring urgent surgical management. The review of literature reports increased incidence of peptic ulcer perforation in the age groups 21-30 years as seen in the results reported by Elnagib E et al and Chaliya PL et al (41%) while other studies reported a maximum incidence in the age groups of 31 to 40 years as seen in studies by Bharti RC et al (48%) and Hannan A (34%).⁶⁻⁹

Present study reports an incidence of 35% in the 21 to 30 years of age group which suggests predisposition of the disease in the younger adults. Young adults most commonly present directly with perforation with previous history of peptic ulcer disease seen only in few 13.33%. Smoking and alcoholism contribute majorly to the causation of peritonitis consistent with other studies.^{10,11} NSAID ingestion is seen in few patients only 13.33%.

Mortality is about 3.33%, This may be due to better physiological reserve in the young compared to the elderly age group.

V. Conclusion

Peptic ulcer perforation is surgical emergency requiring immediate operative attention. The occurrence of perforation is most often the first presentation of the disease. A shift in increased incidence is being observed from 30-40 age group to 21-30 years.

The incidence of peptic ulcer perforation is increasing in young adults due to addictions like smoking, alcoholism, irregular food habits and overall stressed lifestyle.

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