

Original Research Article

Rise in incidence of perforated peptic ulcer in young-change in the trends in etiology

Mohammed Muzamil Pasha, Divya R. I.*

Department of General Surgery, Bangalore Medical College and Research Institute, Bangalore, Karnataka, India

Received: 08 April 2022

Revised: 22 May 2022

Accepted: 24 May 2022

***Correspondence:**

Dr. Divya R. I.,

E-mail: Divya_swamy@hotmail.com

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ABSTRACT

Background: A total of 50 patients who were admitted and treated for perforated peptic ulcer, from February 2021 to December 2021, were included in the study to study the recent changes in the trends of etiology of perforated peptic ulcer in the young.

Methods: Patients who were diagnosed and treated with perforated peptic ulcer (prepyloric perforation and duodenal perforation) from February 2021 to December 2021 were included in the study. Data regarding dietary habits, use of addictive recreational substances, smoking, tobacco use, and alcohol consumption were collected and tabulated to study the recent trend in the etiology of perforated peptic ulcer in the young.

Results: Higher incidence of peptic ulcer perforation seen in young males with history of use of recreational drugs

Conclusions: There is a rise in cases of perforated peptic ulcers in young males with a history of use of habit-forming substances.

Keywords: Perforated peptic ulcer, Recreational drug use, Duodenal perforation

INTRODUCTION

Peptic ulcers occur when there is an imbalance between the gastric acid production and the gastro-duodenal defense mechanisms. Perforated peptic ulcer is a life-threatening condition, with an incidence of 7/1,00,000 population per year.¹ It usually affects middle and old age groups. There are many incriminating agents in the formation of peptic ulcer, such as use of steroids, NSAIDs, stress, *Helicobacter pylori* infection, alcohol consumption, and smoking.² It is one of the most common surgical emergencies. Surgery is still the mainstay treatment for perforated peptic ulcers.

Objectives

The purpose of our study was to correlate the rise in cases of perforated peptic ulcer in young patients with the use of habit-forming recreational drugs and substances.

METHODS

It is an observational study which was conducted in a tertiary care center in Bangalore, from February 2021 to December 2021. A recent rise in perforated peptic ulcer was seen in young patients. A total of 50 patients who were diagnosed and treated for perforated peptic ulcer during this period were selected by random sampling and were included in the study. The patients presented to the surgical emergency with history of pain abdomen, with tenderness, guarding and rigidity present on examination. The chest and abdomen X-ray showed presence of gas under the domes of diaphragm (Figure 1). All patients underwent emergency exploratory laparotomy and modified Graham's omental patch repair. The data regarding dietary habits, use of addictive recreational substances, smoking, use of tobacco, and alcohol consumption, were collected and tabulated.

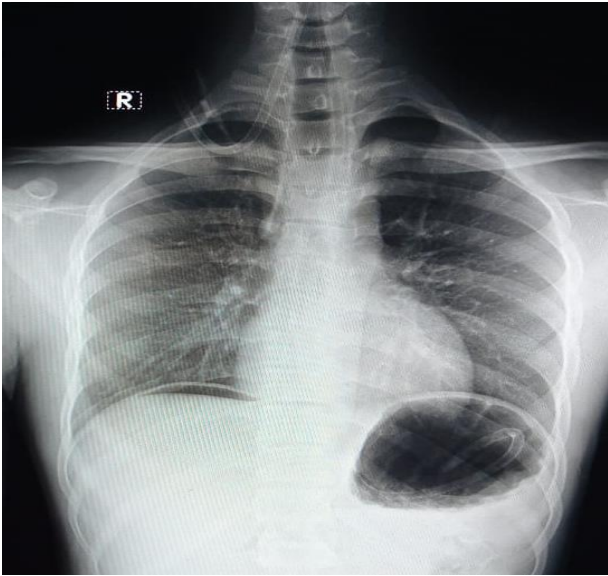


Figure 1: X-ray showing air under domes of diaphragm.

RESULTS

Out of the 50 patients included in the study, 32 patients (64%) were young patients, aged 18-30 years, 10 patients (20%) were middle aged between 31-50 years, and 8 patients (16%) were old patients above 50 years of age. (Figure 2).

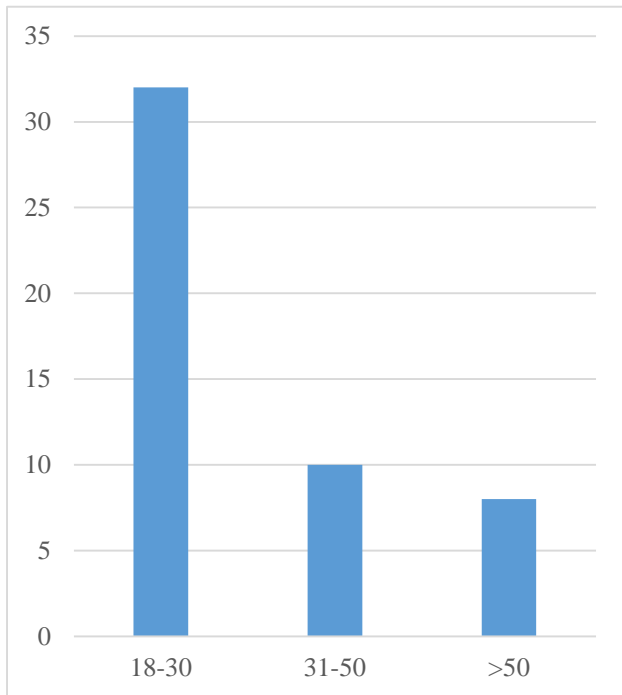


Figure 2: Age distribution of patients.

Out of the 32 young patients, 53% had history of use of tobacco in any form (smoking or chewing), 56% had history of alcohol consumption and 31% had a history of use of other recreational drugs (Figure 3).

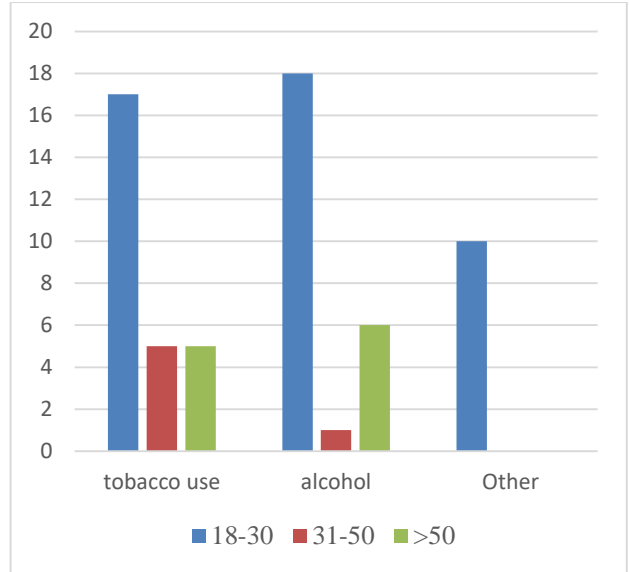


Figure 3: Age-wise distribution of etiological agents.

DISCUSSION

In our study, the majority of patients who presented with perforated peptic ulcers were young patients, aged between 18-30 years of age, as compared to middle and old aged patients. Prepyloric perforation (Figure 4) was more common than duodenal perforation (Figure 5).



Figure 4: Pre-pyloric perforation.

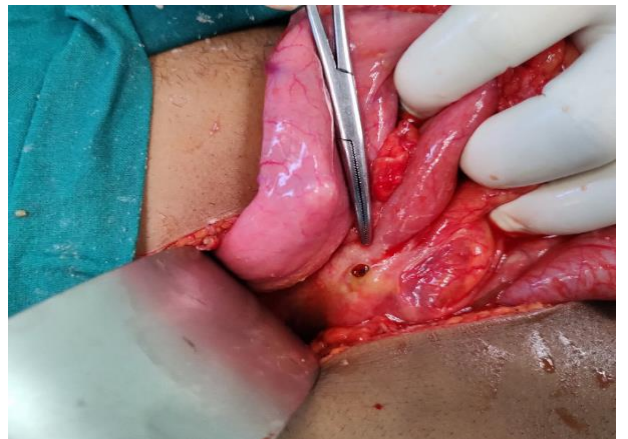


Figure 5: Duodenal perforation.

A number of studies proved that smoking is a major cause of peptic ulcer. Nicotine from smoking is known to have several effects on the GI tract.³⁻⁹ A) High concentration of nicotine increases gastric acid secretion in stomach and decrease bicarbonate production in duodenum. This process interferes with the defense mechanism in the stomach and duodenum leading to ulcer development, B) Platelet activating factor [PAF] is a vasoconstrictive phospholipid, it increases due to nicotine effect contributing more incidence of peptic ulcers in tobacco consumers and C) Nicotine causes immediate vasoconstriction and ischemia which reduces mucosal resistance resulting in perforation.¹⁰⁻¹³



Figure 6: Negative rapid urease test kit.

Out of the 32 young patients, 53% had history of use of tobacco in any form (smoking or chewing), 56% had history of alcohol consumption and 31% had a history of use of other recreational drugs. In these patients, other etiological factors such as a use of steroid drugs, NSAIDs, and *H. pylori* infection (using rapid urease test of freshened margin of ulcer) were excluded (Figure 6).

CONCLUSION

There is an increase in the use of recreational, habit-forming drugs amongst young people, which is likely to be a new etiological factor for perforated peptic ulcers in the young. Further study is needed in the area of its pathophysiology.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Pasha MM, Divya RI. Rise in incidence of perforated peptic ulcer in young-change in the trends in etiology. *Int Surg J* 2022;9:1156-58.