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Original Research Article

Spectrum and outcome of gastric outlet obstruction in a tertiary care hospital

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ABSTRACT

Background: Gastric Outlet Obstruction is a disorder wherein there is an obstruction in the opening of the stomach (Pylorus), blocking the entrance of ingested food coming from the stomach to the duodenum. Gastric Outlet Obstruction is the one of the most common clinical scenarios encountered in general surgery. Pyloric obstruction occurs in 2-4% of patients with chronic duodenal ulcer and it is described by Sir James Walton as "the stomach you can hear, the stomach you can feel and the stomach you can see". Predominant cause for Gastric Outlet Obstruction has changed substantially with identification of *H. Pylori* and the use of proton pump inhibitor. In this study the various aspects and management of Gastric Outlet Obstruction are analysed.
Methods: This prospective cohort study of 18 months duration was conducted among 50 patients in the department of general surgery from August 2016 to February 2018. The study population included patients presenting with gastric outlet obstruction in the deparment of general surgery who are treated on in-patient basis. An elaborate study of these cases was done and data pertaining to history, clinical features, investigations, management and follow up collected in a structured proforma.
Results: Of the 50 cases of gastric outlet obstruction, 30 patients were diagnosed carcinoma pylorus and 17 of them were found to have cicatrising ulcer. Remaining 3 patients had other causes attributed to the presentation. The age incidence of the patients in this study ranged from 20 to 70 years with a mean age of 45.2 years. Majority of patients were manual labourers. 70% of the study subjects were smokers and 60% consumes alcohol. Vomiting and abdominal pain were the predominant symptom with recorded loss of weight in 35 cases.
Conclusions: Gastric outlet obstruction is a common presentation of malignancy and cicactrising duodenal ulcers. However there has been changing trends in the pattern of disease incidence in view of changing trends in management and investigation modalities.

Keywords: Gastric outlet obstruction, Carcinoma pylorus, Cicatrising duodenal ulcer

INTRODUCTION

Wallace P Richie Jr called stomach an elegant organ, once thought to be the seat of the soul, always handy to bring to the dinner table, and a recognised source of ecstasy and grief. Gastric outlet obstruction is a disorder wherein there is an obstruction in the opening of the stomach (Pylorus), blocking the entrance of ingested food coming from the stomach to the duodenum. Gastric outlet obstruction is the one of the most common clinical scenarios encountered in general surgery. Pyloric obstruction occurs in 2-4% of patients with chronic duodenal ulcer and it is described by Sir James Walton as "the stomach you can hear, the stomach you can feel and

the stomach you can see". Predominant cause for Gastric outlet Obstruction has changed substantially with identification of H. Pylori and the use of proton pump inhibitor. Until the late 1970's benign disease was responsible for the majority of Gastric Outlet Obstruction in adult, while malignancy accounted for only 10-39% of causes. By contrast in recent decades 50-80% of cases have been attributed to malignancy. In this study the various aspects and management of Gastric Outlet Obstruction are analysed.[1] One of the main symptoms of advanced gastric cancer is GOO. Treatment for GOO includes operative and non-operative options. Traditionally, open gastrojejunostomy was the treatment modality of choice to bypass the obstruction. However, in recent years endoscopic stenting has been used more frequently. While stenting is considered less invasive and associated with a quicker return to oral intake, it is associated with several disadvantages including a high rate of re-obstruction and stent migration.[2,3] Gastric outlet obstruction poses diagnostic and therapeutic challenges to general surgeons. There is a paucity of published data on this subject in our setting. This study was undertaken to highlight the etiological spectrum and treatment outcome of gastric outlet obstruction in our setting and to identify prognostic factors for morbidity and mortality.

The objectives of this study is to study the spectrum of cases presenting as gastric outlet obstruction, to study the various modes of intervention, management and outcome in the study population.

METHODS

This prospective cohort study of 18 months duration was conducted among 50 patients in the department of general surgery from August 2016 to February 2018

Inclusion criteria

The study population included patients presenting with gastric outlet obstruction in the department of general surgery who are treated on in-patient basis.

Exclusion criteria

Patients below 12 years of age.

An elaborate study of these cases was done and data pertaining to history, clinical features, investigations, management and follow up collected in a structured proforma. Visible gastric peristalsis, projectile vomiting of undigested food consumed the previous day, gastric succusion splash, palpable hypertrophic stomach, ultrasonographic findings, gastric residue more than 500 ml in an adult or demonstration at autopsy were considered as criteria to diagnose gastric outlet obstruction.

Haemoglobin, bleeding time, clotting time, blood sugar levels, renal function tests, urine routine, blood grouping, ECG and chest xray was done as a part of work up. Ultrasound study was done in all cases. Contrast enhanced CT abdomen study and upper GI endoscopy was done wherever feasible.

Statistical analysis was performed using Epi info version 7 [Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia (US)]. Frequency and percentage of each variables were calculated and the same was depicted as tables and graphs. The follow up period ranges from 3 months to one year.

RESULTS

Of the 50 cases of gastric outlet obstruction, 30 patients were diagnosed carcinoma pylorus and 17 of them were found to have cicatrizing ulcer. Remaining 3 patients had other causes attributed to the presentation.

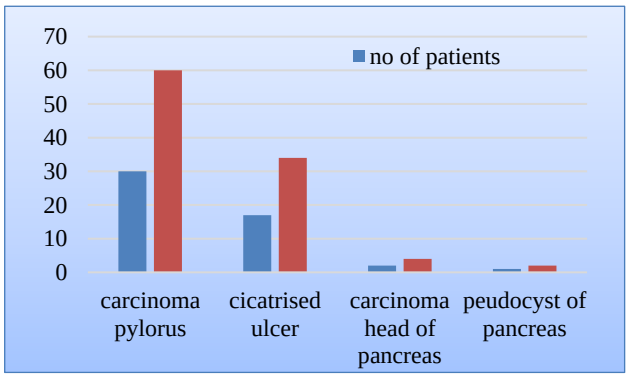

Figure 1: Causes of gastric outlet obstruction in the study population.

The age incidence of the patients in this study ranged from 20 to 70 years with a mean age of 45.2 years. In case of obstruction secondary to duodenal ulcer, the maximum age incidence occurred in 41-50 age group and obstruction due to malignancy occurred in 51-60 age group. In this study, 43 patients were males and 7 patients were females.

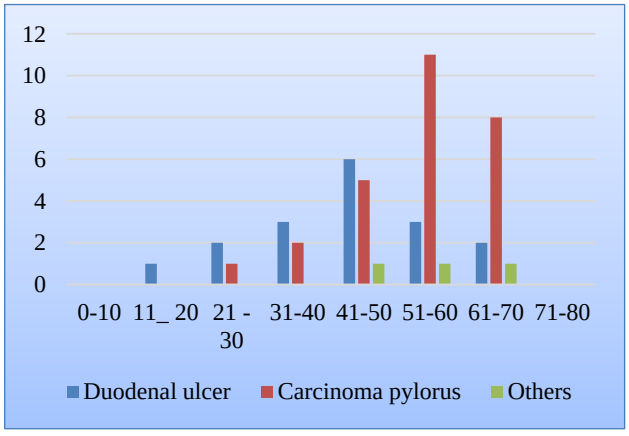

Figure 2: Age wise incidence of gastric outlet obstruction.

Majority of patients were manual labourers. 70% of the study subjects were smokers and 60% consumes alcohol. Vomiting and abdominal pain were the predominant symptom with recorded loss of weight in 35 cases. Visible Gastric peristalsis was present in 25 cases, in which 4 were malignant. However, palpable mass was present in 5 cases, all of them being malignant. Upper GI endoscopy was done in all the cases and malignancy was proved in 17 cases. Of the 30 patients with carcinoma pylorus, 8 underwent Billroth II resection, and the rest underwent distal gastrectomy with roux-en-y anastomosis. Truncal vagotomy with gastrojejunostomy was done in cases of duodenal ulcer cases. Postoperative complications in the study population included wound infection, respiratory tract infections, postoperative anastomotic leak and mortality.

DISCUSSION

Gastric outlet obstruction is a common presentation of malignancy and cicactrising duodenal ulcers. However there has been changing trends in the pattern of disease incidence in view of changing trends in management and investigation modalities. The discussion is mainly on analysis and observation made regarding the presenting symptoms, signs, operative findings and management of 50 cases of gastric outlet obstruction. The commonest cause of gastric outlet obstruction is cicatrised duodenal ulcer.[4] The next commonest cause is carcinoma of pyloric antrum. However, in the present study, carcinoma of pylorus is the leading cause of gastric outlet obstruction (30%). The values differ very much from the values observed by WH series.[5] The incidence of gastric outlet obstruction due to cicatrising duodenal ulcer is 80.5% in Ballint and Spence study.[6] The incidence of obstruction secondary to carcinoma pyloric antrum is 11.02% which is less than present series.

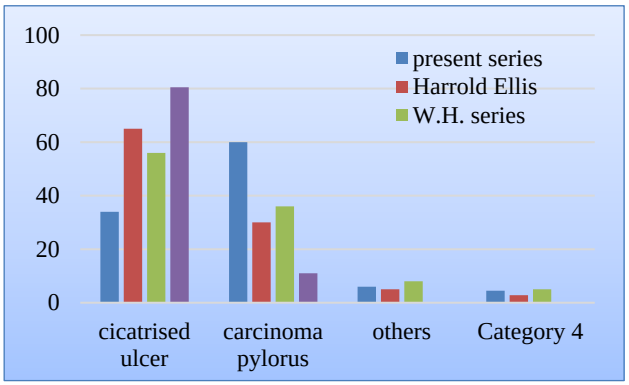

Figure 3: Etiological factors of Gastric outlet obstruction in comparison to other studies.

In this study most, patients were in the fifth and sixth decade of life with the average age being 45.26 years with a span from 20 to 70 years. Men outnumbered women by 6.14:1. In the series of Fischer et al, men outnumbered women by 2:1 ratio.[7] However Yogiram and Choudhary observed a ratio of 5.5:1.[8] The higher incidence in males, worldwide can be explained because of more consumption of gastric irritants. 46% of the patients were manual labourers who gave history of irregular diet habits, which seemed to contribute to the disease process. The series of Kozoll DD and Meyer KA also showed the same pattern with the nonskilled day labourer group listed most frequently with obstruction.[9]

In this series, 70% of patients had history of smoking and 60% had history of alcohol intake. Kozoll DD and Meyer KA reported this to be 76.2% and 52.3% respectively. This states the fact that use of tobacco and alcohol are significant risk factors.

Post prandial vomiting containing partially digested food particles is the main symptom in this study. Other symptoms included epigastric pain (88%), weight loss (70%), post prandial epigastric fullness (46%), anorexia (76%) and malena (44%). In the series of Michael L Schwartz et al, post prandial was the commonest symptom (91%).[10] Other symptoms included epigastric pain (86%) and weight loss (52%). Keith and Kelly, in their study reported intractable vomiting and weight loss in 54% of patients and upper GI bleed in 34%.[11] Weight loss was seen in the series of Kazoll DD and Karl A Meyer and 32% in the series of Harvey J Dworken and Harold P Roth.[12] Post prandial fullness was present in 50% of patients and this corresponds to the values observed by James Disario.[13] Thus, weight loss seemed to be significant in patients with pyloric obstruction and this signifies the chronic nature of the disease and the need for preoperative nutritional supplementation in these patients. All the patients in this study were subjected to a standard pre oprative treatment, which included stomach wash twice a day for three days prior to surgery. Post operatively ryle's tube aspiration was done till bowel sounds appeared.

The average hospital stay in this study was 13 days. This is higher when compared to the series of Matties RA and Robert E Hermann where the average hospital stay was 8.3 days.[14]

CONCLUSION

This study reveals the increasing incidence of gastric outlet obstruction due to carcinoma pylorus unlike in previous studies where cicatrising duodenal ulcer was the major cause for obstruction. This can be attributed to increase in incidence of carcinoma stomach and the decrease in the complications of peptic ulcer disease due to widespread use of proton pump inhibitors.

Incidence is highest in the fifth and sixth decades of life with majority of patients belonging to lower socioeconomic group, especially non-skilled labourer group with irregular diet habits.

A high incidence of alcohol and tobacco abuse is found in these patients. Mortality in this study is 2%, which is

comparatively low. However, this could be due to smaller sample size of this study.

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

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