



## CLINICAL STUDY OF GASTRIC OUTLET OBSTRUCTION OVER A PERIOD OF TWO YEARS IN A TERTIARY CARE HOSPITAL

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**ABSTRACT** **INTRODUCTION:** Gastric outlet obstruction is a clinical condition with complete or incomplete obstruction of the distal stomach or proximal duodenum. With the increased use of proton pump inhibitors incidence of duodenal ulcer producing gastric outlet obstruction decreases. The incidence of gastric carcinoma causing gastric outlet obstruction relatively increased. **METHODOLOGY:** In this study, 50 inpatients with gastric outlet obstruction features presented to King George Hospital Visakhapatnam from 2018 February to 2020 January have been studied. A detailed study of these cases with history, clinical features, routine and special investigation, pre-operative treatment, per operative findings, post-operative management. **RESULTS:** Among 50 cases, 27 cases had carcinoma stomach, and 20 cases had cicatrized duodenal ulcer, two patients secondary to corrosive ingestion, one had gastric outlet obstruction secondary to foreign body ingestion. The age of patients in the case of secondary to the duodenal ulcer is a maximum of between 30-40 years. The maximum age incidence of gastric outlet obstruction secondary to carcinoma stomach is 60-70. 80% are men, and 20% are female. 70% have a history of smoking, and 65% have a history of alcohol intake. Epigastric pain with postprandial vomiting is the main symptom in this study. **CONCLUSION:** The number of gastric outlet obstruction cases due to the chronic duodenal ulcer is diminishing, and the number of cases of antral carcinoma of stomach as cause of gastric outlet obstruction is increasing. Upper gastrointestinal endoscopy should be mandatory in suspected cases of gastric outlet obstruction

**KEYWORDS :** Gastric Outlet Obstruction, Carcinoma Stomach, Chronic Duodenal Ulcer.

### INTRODUCTION

Gastric outlet obstruction is a clinical condition with complete or incomplete obstruction of the distal stomach or proximal duodenum. Causes of gastric outlet obstruction include both benign and malignant condition<sup>[1,2]</sup>. Gastric outlet obstruction can occur from the obstructive mass lesion, chronic ulceration of the distal stomach, and duodenum, causing scarring and fibrosis and acute edema of gastric and duodenal mucosa<sup>[3]</sup>. In the adult's mechanical obstruction due to ulcers, tumors are common. It occurs in approximately 2% of Chronic Duodenal Ulcer (DU) patients. It accounts for 5-8% of complications of ulcer disease<sup>[4]</sup>. Some recent studies noted that 50-60% of Gastric outlet obstruction is due to malignancy. Up to the introduction of proton pump inhibitors and h2blockers chronic duodenal ulcer is the commonest cause of gastric outlet obstruction. In the era of this drug incidence of duodenal ulcers decreased. Simultaneously incidence of antral carcinoma of the stomach producing gastric outlet obstruction is comparatively increased<sup>[5]</sup>. Treatment of gastric outlet obstruction is fluid and electrolyte imbalance correction, correction of anemia, hypoproteinemia, correction of the local condition of the stomach, and treatment of the etiological condition.

### MATERIALS AND METHOD:

This is a clinical observational study of 50 patients with gastric outlet obstruction from King George Hospital Visakhapatnam during the period from February 2018 to 2020 January.

#### Inclusion Criteria

1. Upper gastrointestinal endoscopy demonstrating Gastric outlet obstruction.
2. Presence of projectile vomiting of undigested food material, succussion splash heard 3-4 hours after the meal, visible gastric peristalsis, presence of mass with above features.
3. Overnight gastric aspirate of >200ml in fasting state.
4. Positive saline load test: Retention of more than 400 ml of normal saline 30 minutes after administration of 750ml of NS.

#### Exclusive Criteria

Patient age below 18 years. Patients with other malignancy. A study of the cases with regard to history, clinical examination, all required investigation treatment, and post-operative complications is done.

A detailed history is taken regarding presenting complaints, history of the acid peptic disease, history of metabolic disturbances, history of chronic medication, and previous surgery.

A thorough physical examination has done, taking note in general

condition on examination about patient hydration, nutritional status anemia, and local examination presence of visible gastric peristalsis succussion splash, hepatomegaly, ascites, mass per abdomen is noted.

Routine investigation for surgical fitness is done special investigation like upper gastrointestinal endoscopy, ultrasound abdomen, and CECT abdomen done when required. The patient followed post operatively and required treatment done.

Oral feeding with fluids was then commenced, solids being given later. Early ambulation was encouraged, especially in elderly patients. Routine antibiotics were given during the immediate post-operative period. Regular monitoring of the temperature, pulse, respiratory rate, and blood pressure was done.

### RESULTS:

#### Causes Of Gastric Outlet Obstruction

Out Of the 50 cases of gastric outlet obstruction, 27 had carcinoma antrum, 20 had cicatrized duodenal ulcer, and two had gastric outlet obstruction secondary to corrosive ingestion, and one due to foreign body ingestion.

#### Age Distribution

The age incidence of the patients in this study ranged from 22 – 80 years, with a mean of 51.3 years. In case of obstruction secondary to the duodenal ulcer, the maximum age incidence is between 31 – 40 years. The youngest case of gastric outlet obstruction due to duodenal ulcer in the present series is 22 years.

The maximum age incidence of gastric outlet obstruction due to carcinoma antrum is 61 – 70 years. The youngest case of carcinoma in the present series is 39 years.

#### Sex Incidence

In this series, 40 patients (80%) were males, and eight patients (20%) were female. The male to female ratio (M: F) is 2:1. M: F ratio in cicatrized duodenal ulcer is 9:1, and in carcinoma antrum is 2.8:1.

#### Smoking

70% (35/50) of the patients were smokers in this series and 30% (15/50) were nonsmokers.

#### Alcohol

64% (32/50) of the patients in this series gave a history of consuming alcohol, and 36% (18/50) patients did not consume alcohol.

#### Symptom's

Postprandial vomiting is seen in all cases in this study. Abdominal pain

is seen in almost all cases (98%), followed by loss of appetite and weight loss. History of acid peptic disease was noted in 75% of patients.

### Signs

Dehydration is the most common sign seen in this study. Pallor was present in 28 (56%) cases and more so in carcinoma of the pyloric region. VGP was present in 20 (40%) cases, 10 of which were malignant. Succussion splash was present in 21 (42%) cases, of which 13 were malignant cases. Palpable mass was present in 9 (18%) cases of the pyloric region and nil in duodenal ulcer cases.

### Investigations

The upper gastrointestinal scope was done in all cases. All patients with duodenal ulcer sequel showed features of GOO. 12 patients with carcinoma stomach showed Fungating growth in the antrum, and 15 patients had prepyloric ulcerative growth Antral stricture seen in 1 case of corrosive poisoning, in other case scope could not be passed due to oesophageal stricture. Barium meal examination was done in 1 patient with corrosive esophageal stricture as upper GI scope could not be passed beyond stricture.

Ultrasonography was done in all cases of carcinoma pylorus. Liver metastasis was noted in 5 cases.

Ultrasound was normal in all duodenal ulcer cases except for 2 cases, which showed gallstones.

### Surgical Procedure

Carcinoma pyloric antrum:

Thirteen patients (48.18%) underwent anterior gastrojejunostomy, eight patients (29.6%) underwent Billroth II gastrectomy. Three patients (11.1) underwent anterior gastrojejunostomy and jejunostomy feeding jejunostomy done in 2 cases. One patient deferred surgery.

### Cicatrized Duodenal Ulcer:

Twenty patients (100%) underwent Truncal Vagotomy with gastrojejunostomy.

### Corrosive Antral Stricture:

One patient underwent feeding jejunostomy as they had an esophageal stricture. Other patient underwent antrectomy with Billroth II anastomosis.

## DISCUSSION

The commonest cause of GOO in our study was carcinoma pyloric antrum, followed by a cicatricial duodenal ulcer, similar to studies done by Jaka et al. Misra et al.<sup>[5,6]</sup>. This is unlike other studies that showed cicatricial duodenal as the commonest cause of GOO<sup>[7]</sup>.

### Age

In our study, the mean age group of gastric outlet obstruction 53.1 years. In this study, most patients were in the sixth and seventh decade. In our study, men outnumbered women by 4:1. The average age was 51.3, with a span of 22 – 81. In the series of Fisher et al. the average age was 54 with a span from 20 – 89 years, and men outnumbered women by 2:1<sup>[8]</sup>.

In antral carcinoma cases, the maximum incidence is seen in the age group of 61 – 70 years. The youngest age of presentation is 32 years. In chronic duodenal ulcer cases, the maximum incidence seen in the age group of 31-40 years.

### Smoking and alcohol

Our study showed 70% of patients were smokers and 65% consumed alcohol. These values are similar to study results conducted by Donald D Kozoll and Karl A Meyer, who reported the incidence of alcoholism and smoking to be 76.2% and 52.3%, respectively in their study<sup>[9]</sup>.

### Symptoms

Postprandial vomiting was the main symptom (100%) in all cases of gastric outlet obstruction in this study. Abdominal pain, loss of appetite, and loss of weight were other major symptoms. In the series of Michael L. Schwartz et al. postprandial vomiting was the commonest symptom (91%). Followed by Epigastric pain (86%) and weight loss (52%)<sup>[10]</sup>.

### Signs

Dehydration was noted in 62% of patients in this study. In the series of

Michael L. Schwartz et al. dehydration was present in 22%<sup>[10]</sup>.

Pallor is seen in 77.7 % of patients with carcinoma stomach compared to 35% in cicatrized duodenal ulcers, probably due to blood loss and cancer cachexia.

Visible gastric peristalsis was seen in 40% of patients in this study. Visible gastric peristalsis was noted in 48.8% and 35% in carcinoma antrum and cicatrized duodenal ulcer cases, respectively. In Yogiram and Chowdhary's study, visible gastric peristalsis is seen in 74% of patients<sup>[11]</sup>.

In 33.3 % of patients with carcinoma antrum, epigastric mass was palpable.

Succussion splash was seen in 75% of patients with cicatrizing duodenal ulcers. Succussion splash was not a major (33.3%) finding in patients with malignancy, which is similar to the observation made by Harold Ellis<sup>[12,13]</sup>.

### Surgical Procedure

The majority of carcinoma antrum cases (48.8) are unresectable underwent anterior gastrojejunostomy as a palliative procedure. 29.6 % of patients underwent Bill Roth II Polya gastrectomy. Two patients underwent anterior gastrojejunostomy and limbal anastomosis.

100% of patients with cicatrized duodenal ulcer underwent truncal vagotomy with posterior gastrojejunostomy.

A standard pre-operative treatment, which included stomach wash twice a day for three days prior to surgery.

Post-operatively, patients were allowed to take oral fluids and then liquid and solid diet after bowel movements established by noting bowel sounds, passing of flatus, and gross reduction in the quantity of Ryle's tube aspiration.

Eighteen patients of antral carcinoma were referred to the Department of Medical Oncology for further management.

Nine cases of the stenosing duodenal ulcer cases were lost for follow up. There has been no recurrence of symptoms in the remaining 11 cases.

## CONCLUSION

The most common cause of gastric outlet obstruction is carcinoma pyloric antrum (59.2%), followed by the cicatrized duodenal ulcer.

In gastric outlet obstruction, the most common presenting complaint is postprandial vomiting.

Visible gastric peristalsis and succussion splash were less noted in carcinoma pyloric antrum cases compared to stenosing duodenal ulcers.

The majority of the patients with duodenal ulcer and carcinoma stomach were smokers and consumes alcohol. All cases of cicatrized duodenal ulcer cases underwent posterior gastrojejunostomy.

In many cases, carcinoma pyloric antrum tumor was unresectable, so 48.18% of patients underwent the palliative procedure.

The incidence of gastric outlet obstruction secondary to duodenal ulcer disease has decreased due to the availability of highly effective drugs like proton pump inhibitors, Awareness of disease, change in food habits.

Truncal vagotomy and gastrojejunostomy is a good procedure for gastric outlet obstruction secondary to the cicatrized duodenal ulcer, as recurrence rate and operative mortality are very less.

Effective treatment of carcinoma stomach depends on early diagnosis of the disease.

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