



A CLINICAL STUDY ON GASTRIC OUTLET OBSTRUCTION: CHANGE IN ETIOLOGY

Dr. Dasari Benjiman

Postgraduate

Dr. M.Mallikarjuna Reddy*

Professor*Corresponding Author

Dr. Haleema Neshath

Assistant Professor

ABSTRACT **INTRODUCTION:** A clinical condition known as gastric outlet obstruction occurs when the proximal duodenum or distal stomach is entirely or partially blocked. The incidence of duodenal ulcers causing gastric outlet obstruction reduces with increased usage of proton pump inhibitors. The frequency of gastric carcinomas that result in occlusion of the stomach outlet has somewhat increased. **METHODOLOGY:** From January 2021 to December 2022, NRI General Hospital, Guntur received 40 inpatients with features of gastric outlet obstruction. Detailed analysis of these cases, including the background, the clinical characteristics, standard and special investigations, pre-operative care, intraoperative findings, and postoperative management. **RESULTS:** Of the 40 cases, 21 cases had stomach cancer, 17 cases had cicatrized duodenal ulcers, two patients had gastric outlet obstruction due to caustic ingestion, and one had a foreign body ingestion-related obstruction. Patients with secondary duodenal ulcers are often between the ages of 30 and 40. The average age at which gastric outlet obstruction caused by stomach cancer occurs is between 60 and 70. There are 20% women and 80% men. 70% of people have smoked in the past, and 65% have consumed alcohol. The primary symptom in this study is epigastric pain accompanied by postprandial vomiting. **Conclusion:** Antral stomach cancer cases are on the rise as a cause of gastric outlet obstruction, while the number of cases caused by chronic duodenal ulcers is declining. Anytime there is a suspicion of a gastric outlet obstruction, an upper gastrointestinal endoscopy should be performed.

KEYWORDS : Gastric outlet obstruction, Carcinoma Stomach, Chronic Duodenal Ulcer

INTRODUCTION

A clinical condition known as gastric outlet obstruction occurs when the distal stomach or proximal duodenum is completely or partially blocked. Gastric outlet obstruction can be caused by both benign and malignant conditions [1, 2]. The chronic ulceration of the distal stomach and duodenum, which results in acute edema of the gastric and duodenal [3] mucosa as well as scarring and fibrosis, can all cause gastric outlet obstruction. Tumors are frequent in the mechanical obstruction that ulcers cause in adults. About 2% of those with Chronic Duodenal Ulcers (DU) experience it. It is responsible for 5-8% of ulcer [4] disease complications. According to several recent studies, cancer accounts for 50–60% of gastric outlet obstruction. The most common cause of gastric outlet obstruction prior to the development of proton pump inhibitors and H2 blockers was a chronic duodenal ulcer. When this medication was popular. Duodenal ulcer occurrence reduced. Antral cancer of the stomach, which causes gastric outlet obstruction, is considerably more prevalent

simultaneously [5]. Correcting fluid and electrolyte imbalances, anemia, hypoproteinemia, the local condition of the stomach, and the underlying cause are all ways to treat gastric outlet obstruction.

MATERIALS AND METHOD :

A clinical observational study of 40 patients with gastric outlet obstruction from NRI General Hospital was conducted using the following materials and methodology from January 2021 to December 2022.

Inclusion Criteria

1. Upper gastrointestinal endoscopy demonstrating obstruction of the gastric outlet.
2. The occurrence of projectile vomiting of undigested food, a splash of water heard 3–4 hours after eating, visible stomach peristalsis, and the existence of a mass with the aforementioned characteristics.
3. Overnight gastric aspiration of more than 200 ml when fasting.
4. A positive saline load test occurs when more than 400 ml of normal saline is retained 30 minutes after 750 ml of NS has been administered.

Exclusion criteria

The patient is under the age of 18. patients who also have malignancy. Case studies should be examined for history and clinical examination, where necessary. Investigation as well as treatment and postoperative complications is done.

A thorough history is collected, including information on any presenting symptoms, previous surgeries, chronic medication use, metabolic changes, and acid-peptic disease history. During a detailed physical examination, the patient's general health, nutritional status, anemia, and the existence of visible gastric peristalsis were noted. succession splash, hepatomegaly, ascites, and an abdominal mass are observed. Regular surgical examinations are conducted, and when necessary, specialized examinations such as upper gastrointestinal endoscopy, abdominal ultrasonography, and CECT are performed. The patient required post-operative care and needed to receive treatment.

After initiating oral feeding with liquids, solids were added later. It was suggested that patients begin walking right away, especially the elderly. During the initial post-operative phase, routine antibiotics

Table 1: Causes of gastric outlet obstruction.

Benign causes	Number (%)	Malignant causes	Number (%)
Peptic ulcer	30(28.8%)	Ca stomach	33(31.7%)
Caustic ingestion	6(5.7%)	Ca pancreas	10(9.6%)
Tuberculosis	2(1.9%)	Ca gallbladder	4(3.8%)
Bezoar	1(0.9%)	Cholangiocarcinoma	6(5.7%)
Other	2(1.9%)	Ampullary ca	7(6.7%)
		Duodenal ca	3(2.8%)



Figure 1 (a): Narrow and deformed pylorus. (b): Duodenal ulcer. (c): CRE dilation. (d): Dilated duodenum.

were administered. The body's temperature, pulse, respiration rate, and blood pressure were all regularly checked.

RESULTS:

Gastric Outlet Obstruction Causes

There were 40 cases of gastric outlet obstruction, and 21 of those patients had cancer. Sixteen people had cicatrized duodenal ulcers, two had gastric outlet obstruction from caustic ingestion, and one had one from ingesting a foreign body.

Age Distribution

The patients in this study ranged in age from 22 to 80, with a mean of 51.3 years. The maximal age incidence for blockage due to a duodenal ulcer is between 31 and 40 years. In the current series, the youngest patient with gastric outlet obstruction brought on by a duodenal ulcer is 22 years old.

The maximum age at which gastric outlet obstruction caused by cancer antrum occurs is between 61 to 70 years. The current series' youngest case of cancer is 39 years old.

Sex predominance

12 patients (30%) were female and 28 patients (70%) were male in this series. 2.5:1 is the male-to-female ratio (M: F). M: F ratios are 7:3 in cicatrized duodenal ulcers and 2.5:1 in carcinoma antrum.

Smoking

In this series, 80% (32/40) of the patients smoked, while only 20% (8/40) did not.

Alcohol

27% (11/50) of the patients in this series did not drink alcohol, while 73% (29/40) of the patients in this series reported drinking in the past.

Symptoms

Postprandial vomiting is a symptom that is present in every case in our study. Abdominal pain is observed in almost all cases (96%), followed by appetite loss and weight loss. Seventy-five percent of patients had a history of acid-peptic illness.

Signs

The most common symptom in this study is dehydration. Pallor was more common in cancer of the pylorus in 28 (56%) cases. 20 patients (about 40%) had VGP, 10 of which were cancerous. 21 (42%) of the patients had succession splash, 13 of which were cancerous. In cases involving the pyloric region, palpable mass was found in nine cases (18%) but not in situations involving duodenal ulcers.

Investigations

In each case, an upper gastrointestinal scope was performed. All patients with duodenal ulcer complications showed GOO characteristics. 10 patients with gastric cancer were evident. Fungating growth in the antrum and pre-ulcerative growth in 12 patients. One case of caustic poisoning had antral stricture; the second case's oesophageal stricture prevented scope passage. One patient who had a corrosive oesophageal stricture underwent a barium meal evaluation since the upper GI scope could not pass through the stricture.

In every case of carcinoma pylori, an ultrasound was performed. Five cases of liver metastases were reported. With the exception of two cases, all of the duodenal ulcer cases had normal ultrasound imaging.

Surgical Procedure

9 patients (42.8%) with carcinoma of the pyloric antrum received an anterior gastrojejunostomy.

In 8 patients (38%), a Billroth II gastrectomy was performed. An anterior gastrojejunostomy was performed on two patients (9.5%), and one case of jejunostomy feeding was performed. One person postponed surgery.

16 patients (100%) who had cicatrized duodenal ulcers underwent truncal vagotomy with gastrojejunostomy.

One patient had a feeding jejunostomy due to a corrosive antral stricture and oesophageal stricture. An antrectomy with Billroth II anastomosis was performed on another patient.

DISCUSSION

According to other studies, carcinoma pyloric antrum and cicatricial

duodenal ulcer were the most common causes of GOO in our study.

Jaka et al., Misra et al., performed in [5,6]. This is in contrast to other studies that indicated cicatricial duodenal as the most common reason for GOO.

Age

The median age of gastric outlet obstruction in our study was 53.1 years. Most of the participants in this study were in their sixth and seventh decades.

In our survey, there were 3.5:1 more men than women. With a range of 20 to 78, the average age was 49. In the Fisher et al. series, the gender ratio was 2:1 and the average age was 54 with a range of 20 to 89 years. The age ranges from 61 to 70 years is where antral carcinoma instances are most prevalent. 32 years old is the earliest age of presentation.

In situations with persistent duodenal ulcers, the peak incidence age group of 31 to 40 years.

Alcohol and smoking

Our research revealed that 73% of patients drank alcohol and 80% of patients smoked. These numbers are comparable to those from a study by Donald D. Kozoll and Karl AMeyer, who observed that smoking and alcoholism were prevalent in their sample, with respective rates of 76.2% and 52.3%. (7)

Symptoms

In this study, postprandial vomiting was the only symptom seen in 100% of patients with gastric outlet obstruction. Pain in the abdomen, loss of appetite, and weight were two additional key signs. Postprandial vomiting was the most prevalent symptom (91% of the time) in the series by Michael L. Schwartz et al. Epigastric pain (86%) and [8] weight loss (52%) were the next two symptoms.

Signs

In this study, 67% of the patients had dehydration. Pallor is observed in 77.7% of patients with stomach cancer compared to 35% of individuals with cicatrized duodenal ulcers; this is likely a result of blood loss and cachexia from the malignancy. Of the patients in this study, 40% showed visible stomach peristalsis.

In cases of cicatrized duodenal ulcer and carcinoma antrum, visible stomach peristalsis was observed in 48.8% and 35%, respectively. 74% of [9] patients in Yogiram and Chowdhary's study had visible stomach peristalsis. Epigastric mass was palpable in 33.3% of patients with carcinoma antrum.

Seventy-five percent of individuals with cicatrizing duodenal ulcers experienced succession splash. Similar to the finding revealed by [10], succession splash was not a substantial (33.3%) finding in patients with cancer by Richard Ellis.

Surgical Procedure

An anterior gastrojejunostomy was performed as a palliative treatment in the majority of cancer antrum cases (42.8) that were incurable. 38% of patients, a Billroth II Poly A gastrectomy was performed. An anterior gastrojejunostomy and limbic anastomosis were performed on two individuals. Truncal vagotomy with posterior gastrojejunostomy was performed on all patients with cicatrized duodenal ulcers. A typical pre-operative regimen that includes twice-daily stomach wash for three days before the procedure.

Following surgery, patients were given permission to take oral fluids before moving on to liquid and solid diets once bowel movements had been confirmed by observation of bowel sounds, the passing of air, and a significant decrease in the amount of aspiration from Ryle's tube. The Department of Medical Oncology received referrals for the further management of 16 antral carcinoma patients. Nine stenosing duodenal ulcer cases were unavailable for further investigation. The remaining 9 instances have not seen any recurrence of symptoms.

CONCLUSION

Carcinoma pyloric antrum is the most common cause in gastric outlet obstruction (59.2%), followed by cicatrized duodenal ulcer. Postprandial vomiting is the most frequent presenting symptom of gastric outlet obstruction.

In cases of carcinoma pyloric antrum, visible gastric peristalsis and

succussion splash were less evident than in cases of stenosing duodenal ulcers.

The majority of patients with duodenal ulcers and stomach cancer consumed alcohol and smoked. The posterior gastrojejunostomy procedure was performed in every case of cicatrized duodenal ulcer.

46.24% of patients received palliative treatment because the carcinoma pyloric antrum tumor was generally unresectable. Due to the availability of very efficient medications like proton pump inhibitors, more public awareness of the condition, and dietary changes, the incidence of gastric outlet obstruction secondary to duodenal ulcer disease has decreased.

While the risk of recurrence and surgical mortality is very low, truncal vagotomy and gastrojejunostomy is an effective treatments for gastric outlet obstruction related to the cicatrized duodenal ulcer. Early detection of the condition is essential for the effective treatment of stomach cancer.

REFERENCES :

1. Gaidos JK, Draganov PV. Treatment of malignant gastric outlet obstruction with endoscopically placed self-expandable metal stents. *World J Gastroenterol.* 2009 Sep 21;15(35):4365-71.
2. Johnson CD. Gastric outlet obstruction malignant until proved otherwise. *Am J Gastroenterol.* 1995 Oct;90(10):1740.
3. Dworken HJ, Roth HP. Pyloric obstruction associated with peptic ulcer: a clinicopathological analysis of 158 surgically treated cases. *JAMA.* 1962 Jun 23;180(12):1007-10.
4. Kozoll DD, Meyer KA. Obstructing gastro duodenal ulcer, symptoms and signs. *Arch Surg.* 1964 Sep;89:491-8.
5. Misra SP, Dwivedi M, Misra V. Malignancy is the most common cause of gastric outlet obstruction even in a developing country; *Endoscopy.* 1998; 30(5):484-6.
6. Hyasinta Jaka, Mabula D, Mchembe Peter F, Rambau and Phillip L. Chalya; Gastric outlet obstruction at Bugando Medical Centre in Northwestern Tanzania: a prospective review of 184 cases; *BMC Surgery.* 2013; 13:41
7. Kozol DD, Meyer KA. Obstructing gastroduodenal ulcers: symptoms and signs, *Arch. Surg.* 1964; 89:491.
8. Schwartz MC et al. Gastric outlet obstruction in peptic ulcer disease, an indication for surgery, *Am. J Surg.* 1982; 143:90.
9. Yogiram B, Choudhary NVS. Jan, Duodenal (ulcer) stenoses in Andhra Pradesh: A tenyear study, *Indian Journal of Surgery,* 1983, 12.
10. Ellis H et al. *Surgery of the stomach and duodenum,* 4th edition, Little Brown Publications, Boston, 1986, 475.