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GASTRIC OUTLET OBSTRUCTION: TRANSFORM IN ETIOGENESIS: STUDY FROM NORTHERN RAJASTHAN

ZUBIN PRADEEP SHARMA, RAVINDRA SHARMA, DIVYA SHARMA, SANTOSH YADAV

Department of Gastroenterology, Aditya Hospital And Gastroenterology Centre, Rajasthan, India

ABSTRACT

Objective: To determine the frequency of various etiologies of Gastric Outlet Obstruction in Northern part of Rajasthan, India.

Design & Duration: Prospective study carried out from March 2018 to March 2019.

Methodology: The data of all the patients who presented with the features of Gastric Outlet Obstruction during the above mentioned period was collected. This data was analyzed with specific reference to recent trends in its etiology. This change in trend was compared with other local and international studies.

Results: Fifty patients were included in the study. All patients underwent upper GI endoscopy and biopsy; 40 cases were diagnosed by this method and the remaining by CT scan. Gastric carcinoma was the most common cause of Gastric Outlet Obstruction seen in 36% of the cases. The next common etiology was peptic ulcer disease which was responsible for 32% of the patients.

Conclusion: The ratio between benign and malignant etiologies of Gastric Outlet Obstruction is showing a gradual change in favour of malignant lesions. This change is similar to the trends reported in the western literature.

Keywords: Gastric Outlet Obstruction, etiology, Gastric Carcinoma, Peptic Ulcer disease

*Correspondence to Author:

ZUBIN PRADEEP SHARMA

Department of Gastroenterology,
Aditya Hospital And Gastroenterology Centre, Rajasthan, India

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Introduction:

Gastric outlet obstruction which was previously known as pyloric stenosis is not a single entity, it is the clinical and path physiological consequence of any disease process that produces a mechanical impediment to gastric emptying¹. Gastric outlet obstruction implies complete or incomplete obstruction of distal stomach, pylorus or proximal duodenum. This may occur as an obstructing mass lesion, external compression or as result of obstruction from acute edema, chronic scarring or fibrosis or combination of both^{1,2}. Clinical entities that can result in gastric outlet obstruction are categorized into two well defined groups of causes - benign and malignant. In the past when peptic ulcer disease was more prevalent, benign causes were the most common, however, the scenario has changed dramatically with the advent of potent medical treatments like H2 receptor antagonists, proton pump inhibitors and other drugs, reducing the incidence of peptic ulcer and its complications substantially. A recent review shows that only 37% of patients with gastric outlet obstruction have benign disease and remaining patients have obstruction secondary to malignancy^{3,4}. Although the disease presumably occurs with almost equal prevalence in this part of the world but local literature is quite scanty in recording the prevalence and identification of the etiological factors in our setup. The objective of this study was to identify the different etiologies of gastric outlet obstruction and their relative frequencies in northern Rajasthan.

Materials and Methods:

This prospective study was conducted at the Aditya Hospital and Gastroenterology Centre, Ganganagar, Rajasthan from March 2018 to March 2019. In total, 50 in-patients of gastric outlet obstruction have been studied **Inclusion criteria:** Patients presenting with gastric outlet obstruction who are treated on in-patients basis. All patients having symptoms and endoscopic or radiological evidence of gastric outlet obstruction were included in this study Patients willing for investigations and treatment. **Exclusion**

criteria: Patients aged 20 years and below. Pregnant females, patient with a recent history of any abdominal surgeries, gastric retention due to diabetic or uremic gastroparesis without any mechanical obstruction were excluded. Patients having drug induced delayed gastric emptying without any mechanical obstruction were also excluded from this study In history, details were noted about presenting complaints, duration, history of acid peptic disease, features of metabolic disturbances, occupation and personal history including diet, bowel and bladder habits, smoking, and alcoholism

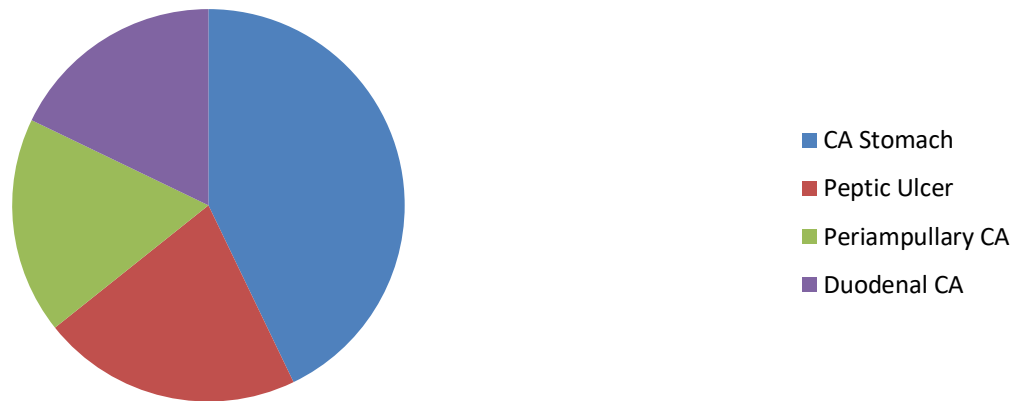
The demographics, clinical presentation, investigations, endoscopic findings and final diagnoses were analyzed for all patients presenting with features of gastric outlet obstruction during the above mentioned period. All patients underwent upper GI endoscopy and biopsy for the confirmation of diagnosis. If this modality was not able to confirm the diagnosis, then CT scan was done.

Observations and Results:

In all, there were 50 patients with Gastric Outlet Obstruction fulfilling the selection criteria during the above mentioned study period. The gender distribution was predominantly male (n=38) making up about 76% of the total patients. The mean age was 44 years; the range being 20 to 70 years (Table I). All patients underwent upper GI endoscopy and this procedure was diagnostic in 42 patients. Eight patients were diagnosed on CT scan and these included pancreatic and biliary malignancies. Overall, 34 (68%) patients were found to be having malignant lesions. Out of these 32 patients, carcinoma of stomach was found in 18 patients (36%). 6 (12%) patients had periampullary carcinoma, 5 (10%) patients had duodenal carcinoma, 3 (6%) patients had carcinoma of pancreas, 2 (4%) patients had cholangiocarcinoma. Rest of the 16 (32%) patients had peptic ulcer and biopsy was negative for any malignant etiology. The comprehensive list of etiology is shown in Table III.

Age Group	Number	%
<20	0	0
21-30	2	4
31-40	3	6
41-50	7	14
51-60	16	32
61-70	18	36
>70	4	8

Etiology



Etiology	No. of Patients
Peptic Ulcer	15
Ca Stomach	12
Periapillary Ca	6
Duodenal Ca	5
Pancreatic Ca	5
Cholangio Ca	4
Tuberculosis	2
Caustic Ingestion	1

Discussion:

The discussion is mainly in analysis and observation made regarding the presenting symptoms, signs, and investigations in 50 cases

of gastric outlet obstruction admitted to Aditya Hospital and Gastroenterology Centre, Ganganagar during March 2018 to March 2019. Gastric Outlet Obstruction has traditionally been considered synonymous with pyloric stenosis as

a result of peptic ulcer disease in adults, accounting for upto 90% cases in the 1960's and early 1970's². In this study the most common cause of gastric outlet obstruction is carcinoma of the stomach. The next most common cause is cicatrized peptic ulcer disease (PUD). These observations reveal that the incidence of gastric outlet obstruction secondary to chronic gastric or duodenal ulcer has come down while that of malignancy has relatively increased⁵. This may in part account for the great preponderance of peptic ulcer as a cause of gastric outlet obstruction. A ten year study, from 1970 to 1979, showed peptic ulcer to be the etiology amongst 81% of the gastric outlet obstruction patients⁶. The advent of proton pump inhibitors saw a sharp decline in the incidence of peptic ulcers and hence its complications like gastric outlet obstruction. Gastric cancers have shown a decline in the western hemisphere; they now rank third in frequency among gastrointestinal cancers in the United States following colorectal and pancreatic carcinomas, as compared to the most common tumour a few decades ago. In spite of its decline in incidence, its proportion as an aetiology of gastric outlet obstruction appears to be increasing. This is probably due to a sharp decline in the incidence of peptic ulcers in an era of H₂ receptor antagonists and proton pump inhibitors^{5,6}. In this study, out of 34 patients, 68% had malignancy as the cause of obstruction, while 32% had benign disease. Another study from Misra et al. showed malignancy as the cause of gastric outlet obstruction in 76% of the patients⁶. Another study from Nigeria described a similar figure of 14% for gastric carcinoma among cases of gastric outlet obstruction⁷. Postprandial vomiting and epigastric pain are the main symptoms (96%) in this series. Vomiting is usually spontaneous and projectile type. Other symptoms included anorexia (84%), weight loss (72%), postprandial epigastric fullness (68%), hematemesis (24%), melena (64%), and constipation (48%). In the series of Micheal L. Schwartz et al., postprandial vomiting was the most common symptom (91%)⁸. Other

symptoms included epigastric pain (86%) and weight loss (52%). In the series of Kaushik et al. epigastric pain was the most common symptom (87%). Other symptoms included postprandial vomiting (80%) and constipation (30%)⁹.

Conclusion:

Since the study has been based on a small number of cases, with a limited follow-up, it is rather difficult to come to definite conclusions. However, some of the conclusions which can be drawn from this series are as follows:

1. The original ratio between benign and malignant causes of gastric outlet obstruction is gradually reversing in favor of malignant lesions. In our country, this reversal is slow and gradual but similar to the trends reported in the western literature. This is probably due to a substantial decrease in peptic ulcer complications after the advent of proton pump inhibitors.
2. The most common causes of gastric outlet obstruction in adults are carcinoma stomach producing gastric outlet obstruction (68%) and cicatrized Peptic ulcer disease (32%)
3. Upper G.I. endoscopy should be mandatory in all suspected case of gastric outlet obstruction. It can diagnose the cause of obstruction very effectively than any other investigative modality
4. Effective treatment in carcinoma stomach depends on early diagnosis.

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