

A PROSPECTIVE STUDY OF PRESENTATIONS OF GASTRIC OUTLET OBSTRUCTIONPrakash S. S¹, Raghavendra Prabhu T. C²¹Assistant Professor, Department of Surgical Oncology, K. R. Hospital, MMC RI, Mysore, Karnataka, India.²Postgraduate Student, Department of Surgical Oncology, K. R. Hospital, MMC RI, Mysore, Karnataka, India.**ABSTRACT****BACKGROUND**

Gastric Outlet Obstruction (GOO) also known as pyloric obstruction is not a single entity. It is the clinical and pathophysiological consequence of any disease process that produces a mechanical impediment to gastric emptying.

Aim- To study various diseases presenting as gastric outlet obstruction in Krishna Rajendra Hospital, Mysore attached to Mysore Medical College and Research Institute, Mysore.

MATERIALS AND METHODS

The patients for this study have been selected from Krishna Rajendra Hospital, Mysore attached to Mysore Medical College and Research Institute, Mysore during the time period of August 2016 to August 2018. Overall, 64 patients have been studied. An elaborate study of the cases with regard to history, clinical features, routine and special investigations, pre-operative treatment, operative findings, post-operative management and complications in the post-operative period is done. Apart from routine surgical profile special investigations like serum electrolytes, barium meal study, upper GI endoscopy and ultrasound abdomen and pelvis were carried out.

RESULTS

Out of the 64 cases included in our study, 32 patients (50%) had carcinoma of pyloric antrum, 26 patients (40.6%) had cicatrised duodenal ulcer, 4 patients (6.25%) had corrosive antral stricture and 2 patients (3.125%) had gastric outlet obstruction due to carcinoma head of pancreas.

CONCLUSION

The following conclusions were made in our study: -1. Carcinoma of the antrum of stomach was the commonest cause for Gastric Outlet Obstruction; 2. Age incidence varies between 51-60 years. Patients of 5th and 6th decades were the commonest victims; 3. Slight male predominance was observed in our study; 4. Vomiting was the commonest presentation of Gastric Outlet Obstruction; 5. UGI scopy was invaluable in diagnosing the aetiology of Gastric Outlet Obstruction.

KEY WORDS

Gastric Outlet Obstruction, Cicatrised Duodenal Ulcer, Carcinoma Pyloric Antrum.

HOW TO CITE THIS ARTICLE: Prakash SS, Prabhu RTC. A prospective study of presentations of gastric outlet obstruction. J. Evolution Med. Dent. Sci. 2018;7(50):5337-5339, DOI: 10.14260/jemds/2018/1181

BACKGROUND

Gastric outlet obstruction was described by Sir James Walton as- "The stomach you can hear, the stomach you can feel and the stomach you can see." Gastric Outlet Obstruction (GOO) is the more accurate term for the commonly used term 'pyloric stenosis,' as the site of obstruction is rarely the pylorus itself. The obstruction is usually in the first part of duodenum secondary to cicatrised duodenal ulcer or proximally where the diagnosis of carcinoma is most probable.¹ Until introduction of effective ulcer therapy [H₂ receptor blockers and proton pump inhibitors], duodenal ulcer was the most common cause of gastric outlet obstruction. But with increased awareness of the disease, change in the dietary habits and availability of H₂ receptor blockers and Proton Pump Inhibitors and recent findings of association of

Helicobacter pylori with the causation of peptic ulcer diseases and its effective eradication with H. pylori kits all have resulted in decreased incidence of patients requiring surgery and also the complications like pyloric stenosis have reduced.² At the same time the incidence of antral carcinoma of stomach producing GOO has comparatively increased, which may be due to increased early diagnosis of the condition with the help of flexible fiberoptic endoscope.^{3,4}

This study has been taken up to review the changes in the presentation of gastric outlet obstruction in view of changing trends in the management, because of new drugs and investigatory modalities.

MATERIALS AND METHODS

A prospective cross-sectional study conducted at KR Hospital, Mysuru, attached to Mysuru Medical College and Research Centre, Mysuru from August 2016 to August 2018. In total, 64 in-patients of gastric outlet obstruction have been studied. Inclusion criteria for the study were patients presenting with gastric outlet obstruction who are treated on an in-patient basis, patients willing for investigations and treatment.

Patients with following were included in Study-

1. Presence of projectile vomiting of undigested food material, succussion splash heard 3-4 hours after meal, visible gastric peristalsis, presence of mass with above features.

'Financial or Other Competing Interest': None.

Submission 14-11-2018, Peer Review 27-11-2018,

Acceptance 29-11-2018, Published 10-12-2018.

Corresponding Author:

Dr. Raghavendra Prabhu T. C,

S/o. T. Chikkaiah,

D. No. 139, Sri Raghavendra Krupa,

Havanoor Extension, Bangalore-073,

Karnataka, India.

E-mail: dr_prabhu084@yahoo.co.in

DOI: 10.14260/jemds/2018/1181



- Gastric overnight aspirate of > 200 mL in fasting state.
- Positive saline load test: Retention of more than 400 mL of normal saline 30 minutes after administration of 750mL of normal saline.
- Upper GI scopy (OGD) demonstrating Gastric outlet obstruction.

Exclusion Criteria

For the study were patients aged 20 years and below, pregnant females, patients with a recent history of any abdominal surgeries.

Detailed history, physical examination and investigation was done in all cases. Saline load test was performed in all cases. Upper gastrointestinal scopy was done in all cases for confirmation of diagnosis. Biopsies were taken wherever required. Barium meal examination was done in 2 cases of corrosive oesophageal stricture as the scope could not be passed beyond. Routine investigations like Hb%, Bleeding time, Clotting time, Random blood sugar, Blood urea, Serum creatinine, S. electrolytes, Blood grouping and Urine analysis was done in all cases.

RESULTS

Incidence of gastric outlet obstruction was more between 51-60 yrs. of age. Majority of cases of CA pyloric antrum was noted in the age group of 51-60 yrs. (31.25%). Obstruction caused due to duodenal ulcer was noted in 41-50 yrs. age group (30.4%).

M: F in carcinoma antrum was 2.2: 1 and M: F ratio in cicatrised duodenal ulcer was 3.33: 1.

All (100%) patients had vomiting of undigested food contents of meals taken earlier.

Loss of appetite was the next major symptom in our study group. 93.75% of patients with carcinoma antrum complained of weight loss and anorexia. 76.9% of patients with duodenal ulcer complained of loss of appetite.

Abdominal pain was noted in 71.8% of patients.

Epigastric mass was palpable in 62.5% of patients with carcinoma stomach.

53.8% of patients with duodenal ulcer were having O blood group. 37.5% of patients with carcinoma stomach had A blood group.

Causes	No. of Patients	Percentage
Carcinoma pyloric antrum	32	50
Cicatrised duodenal ulcer	26	40.6
Corrosive antral stricture	4	6.25
Carcinoma head of pancreas	2	3.125
Total	64	100

Table 1. Causes of Gastric Outlet Obstruction

Age (Years)	No. of Patients	Percentage (%)
0-10	0	0
11-20	0	0
21-30	4	6.25
31-40	10	15.625
41-50	16	25
51-60	18	28.8
61-70	10	15.625
71-80	6	9.375

Table 2. Age Distribution

Age Group	Carcinoma Pyloric Antrum	Cicatrised Duodenal Ulcer	Corrosive Antral Stricture	Carcinoma Head of Pancreas
21-30	0	2 (7.6%)	2 (50%)	0
31-40	4 (12.5%)	4 (15.2%)	2 (50%)	0
41-50	8 (25%)	8 (30.40%)	0	0
51-60	10 (31.25%)	6 (22.8%)	0	2 (100%)
61-70	6 (18.75%)	4 (15.2%)	0	0
71-80	4 (12.5%)	2 (7.6%)	0	0

Table 3. Age distribution and causes of Gastric Outlet Obstruction

Sex	Total No.	Carcinoma Antrum	Cicatrised Duodenal Ulcer	Corrosive Antral Stricture	Others
Males	44	22	20	2	0
Females	20	10	6	2	2

Table 4. Sex Distribution

Signs	Total No.	Carcinoma Antrum	Cicatrising Ulcer	Corrosive Antral Stricture	Others
Pallor	50 (78.12)	28 (87.5)	18 (69.2)	4 (100)	0
Dehydration	28 (43.75)	12 (37.5)	14 (53.8)	2 (50)	0
VGP	32 (50)	14 (43.75)	18 (69.2)	0	0
Epigastric Tenderness	20 (31.25)	2 (6.25)	12 (46.15)	4 (100)	0
Mass	22 (34.75)	20 (62.5)	0	0	2 (100)
Succussion Splash	30 (46.87)	12 (37.5)	18 (69.2)	0	0

Table 5. Signs

DISCUSSION

Discussion is mainly on analysis and observation made regarding presenting symptoms, signs, investigations in 64 cases of gastric outlet obstruction admitted to KR Hospital, Mysuru attached to Mysuru Medical College, Mysuru during the time period from August 2016 to August 2018.

Commonest cause of gastric outlet obstruction was carcinoma of pyloric antrum (32) followed by cicatrised duodenal ulcer (26). These results are similar to results of studies conducted by Sukumaran⁵ and Godadevi⁶ in India.

Most patients affected due to carcinoma of pyloric antrum were in the age group between 5th and 7th decades. Majority (31.25%) of the patients presenting with this disease were in the age group of 51-60 years. Maximum incidence of duodenal ulcer sequel patients was noted in age group of 41-50 yrs. (30.4%).

Male-to-female ratio, GOO was 2.2: 1 overall. Male-to-female ratio in duodenal ulcer patients was 3.33: 1 and was 2.2: 1 in carcinoma pyloric antrum suggesting predominance of disease in males. In series of Fischer⁷ et al, men outnumbered women by 2: 1.

Our study showed 65.6% of patients were smokers and 62.5% were alcoholics. 76.9% of patients with duodenal ulcer sequel patients were smokers and 53.8% were

alcoholics. These values are similar to study results conducted by Donald D Kozoll and Karl A Meyer⁸ who reported incidence of alcoholism and smoking to be 76.2% and 52.3% respectively in their study. This suggests alcohol and tobacco are significant risk factors for causation of duodenal ulcer.

Postprandial vomiting was the main symptom (100%) in all cases of gastric outlet obstruction, which was projectile in nature with vomitus being partially digested food material. Loss of appetite (78.12%) and loss of weight (62.5%) were other major symptoms. Abdominal pain was noted in 71.8% of patients with gastric outlet obstruction. Studies conducted by Yogiram and Chowdhary⁹ and Michael Schwartz¹⁰ also show abdominal pain, vomiting, loss of weight and appetite as the major presenting complaints.

Weight loss was noted in 59.5% of patients in series of Donald D Kozoll and Karl A Meyer⁸ and 32% in series of Harvey J Dworken and Harold P Roth¹¹ suggesting weight loss to be significant in patients with pyloric obstruction. Loss of weight (87.5%) was present in majority of patients in our study.

Majority (87.5%) of patients with carcinoma stomach were anaemic, probably due to less amount of nutrition and microscopic blood loss and cancer cachexia. Yogiram and Chowdhary⁹ noted the presence of visible gastric peristalsis in 74% of patients. Visible gastric peristalsis was noted in 43.75% of patients with carcinoma antrum.

Succussion splash was seen in 69.2% of patients with cicatrising duodenal ulcer. Succussion splash was not a major (37.5%) finding in patients with malignancy, which is similar to observation made by Harold Ellis.¹²

37.5% of patients with carcinoma pyloric antrum belonged to 'A' blood group. Blood group 'O' was the major (53.8%) group noted in patients with cicatrising duodenal ulcer.

This is significant as persons with 'O' blood group are about three times more likely to develop acid peptic disease.

CONCLUSION

Commonest cause of gastric outlet obstruction in our study was carcinoma of pyloric antrum followed by cicatrised duodenal ulcer. Two cases were due to corrosive stricture and one due to carcinoma head of pancreas. Recent studies show that carcinoma pyloric antrum has replaced cicatrised duodenal ulcer as a leading cause of gastric outlet obstruction. The incidence of obstruction due to carcinoma of pyloric antrum is more common in recent times as per our study results, most probably due to successful treatment of

duodenal ulcers by drugs such as proton pump inhibitors, H.pylori kit and early diagnosis of carcinoma pylorus due to newer investigatory modalities. Gastric outlet obstruction is more in males than females. It is associated with smoking and alcohol consumption, vomiting of undigested food consumed earlier was the commonest symptom. Majority of GOO with duodenal ulcer sequel were of blood group 'O' and carcinoma pyloric antrum patients were of blood group 'A'.

REFERENCES

- [1] Cuschieri A, Hanna GB. Essential surgical practice: higher surgical training in general surgery. 5th edn. Hodder Arnold 2013: p. 565.
- [2] Dempsey D, Ashley S, Mercer DW, et al. Peptic ulcer surgery in the H. pylori era: indications for operation. *Contemp Surg* 2001;57:434-41.
- [3] Williams NS, Bullstrode CJK, O'Connell PR. Bailey and Love's: short practice of surgery. 26th edn. Hodder Arnold 2013: p. 1036-55.
- [4] Shone DN, Nikoomanesh P, Smith-Meek MM, et al. Malignancy is the most common cause of gastric outlet obstruction in the era of H2 blockers. *American Journal of Gastroenterology* 1995;90(10):1769-70.
- [5] Sukumar V, Ravindran C, Prasad RV. Demographic and etiological patterns of gastric outlet obstruction in Kerala, South India. *North American Journal of Medical Sciences* 2015;7(9):403-6.
- [6] Godadevi TSRSVR, Reddy RA. A clinical study and management of gastric outlet obstruction in adults. *Int J Sci Stud* 2016;4(6):104-8.
- [7] Fischer RD, Ebert PA, Zuidema GD. Obstructing peptic ulcers. Results of treatment. *Arch Surg* 1967;94(5):724-7.
- [8] Kozoll DD, Meyer KA. Obstructing gastroduodenal ulcers: general factors influencing incidence and mortality. *Archives of Surgery* 1964;88(5):793-9.
- [9] Yogiram B, Chowdhary NVS. Duodenal (ulcer) stenosis in Andhra Pradesh. A 10 year study. *Ind J Surg* 1983: p. 12-6.
- [10] Schwartz MC. Gastric outlet obstruction in peptic ulcer disease, an indication for surgery. *Am J Surgery* 1982;143:90.
- [11] Dworken HJ, Roth HP. Pyloric obstruction associated with peptic ulcer: a clinicopathological analysis of 158 surgically treated cases. *JAMA* 1962;180(12):1007-10.
- [12] Ellis H. Pyloric stenosis. In: Nyhus LM, Wastell C, eds. *Surgery of the stomach and duodenum*. 4th edn. Boston: Little Brown Publications 1986: p. 475.