Original Research Paper

Volume - 11 | Issue - 04 | April - 2021 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

General Surgery

A CLINICAL STUDY ON GASTIC OUTLET OBSTRUCTION IN ADULTS ADMITTED IN THE TERTIARY CARE CENTRE OF RANCHI, JHARKHAND

Dr. Amit Anand*	Junior Resident III (Academic), RIMS Boys Hostel No. 7 Room No. 39, P.O.-RMCH, Ranchi-834009. *Corresponding Author
Dr. Zenith Harsh Kerketta	Assistant Professor, Dept. of General Surgery, RIMS, P.O.-RMCH, Ranchi-834009.
Dr. Asim Augustine Minj	Senior Resident, Dept. of General Surgery, RIMS, P.O.-RMCH, Ranchi-834009.
Dr. Pankaj Bodra	Professor, Dept. of General Surgery, RIMS, P.O.-RMCH, Ranchi-834009.
Dr. Shital Malua	Professor, Dept. of General Surgery, RIMS, P.O.-RMCH, Ranchi-834009.

ABSTRACT Gastric outlet obstruction may be caused by a heterogeneous group of diseases that include both benign and malignant conditions. Gastric outlet obstruction (G.O.O.) is a group of clinical condition that produces a mechanical hitch in the gastric emptying. This study edifies about the clinical conditions observed in cases of gastric outlet obstruction and their management protocols.
An observational study was done on 50 patients of gastric outlet obstruction admitted in the department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand from January 2019 to February 2021.
Antral carcinoma (66%) was the most common cause of gastric outlet obstruction followed by cicatrized duodenal ulcer developing countries. Majority of the patients were between 40 to 60 years of age group with male to female ratio of 2:1. Most common presenting symptom was vomiting seen in 89% of cases followed by pain in upper part of abdomen in 78% cases. Most common presenting sign was dehydration (66% cases). The most common electrolyte abnormality seen was hyponatremia followed by hypochloremia and hypokalemia. In cases of antral carcinoma, subtotal distal radical gastrectomy with Roux-en-y gastrojejunostomy was done in 44% cases and partial distal gastrectomy with Roux-en-y gastrojejunostomy was done in 31% cases. Truncal vagotomy with gastrojejunostomy was done in 7.9% cases of cicatrized duodenal ulcer. A few cases developed post-operative complications which were managed accordingly.
Early diagnosis, proper preoperative management and treatment with close post-operative monitoring definitely reduce the morbidity of such patients.

Gastric outlet obstruction (G.O.O), antral carcinoma, cicatrized duodenal ulcer, gastrojejunostomy, truncal vagotomy.

KEYWORDS :

INTRODUCTION

Gastric outlet obstruction implies complete or incomplete obstruction of the distal stomach, pylorus, or proximal duodenum. [1] Gastric outlet obstruction may be caused by a heterogeneous group of diseases that include both benign and malignant conditions. [1, 2] In adults, mechanical obstruction due to ulcers, tumors, big polyps are common causes of gastric outlet obstruction.[3]

Gastric outlet obstruction (G.O.O.) is a group of clinical condition that produces a mechanical hitch in the gastric emptying. The two most common causes that lead to gastric outlet obstruction are gastric cancer and pyloric stenosis secondary to peptic ulceration. Previously, the latter was more common. Now, with the decrease in the incidence of peptic ulceration and the advent of potent medical treatments, gastric outlet obstruction should be considered malignant until proven otherwise, at least in resource-rich countries.[4]

The proximal stomach is now the most common site for gastric carcinoma in the west but in Japan and developing countries like India the distal gastric cancer (antrum 13% and pylorus 7%) still predominates.[5]

The patient with gastric outlet obstruction usually suffer from dehydration, alkalosis, anemia and electrolyte imbalance specially hypokalaemia.[6]Electrolyte abnormalities show severe hypokalaemia, hypochloraemia, and elevated bicarbonate suggesting metabolic alkalosis. As the volume deficit progress, aldosterone mediated sodium reabsorption is accompanied by K+ excretion. Because of dehydration, a phase of Na+ retention follows and K+ and H+ are excreted in preference. This causes paradoxical aciduria and hypokalaemia ensue.[7]

METHODS

Study Design:- An observational study was done on 50 patients of gastric outlet obstruction admitted through outdoor, emergency and referred from medical ward.

Place Of Study: - Department of General Surgery, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand.

Duration Of Study: - From January 2019 to February 2021.

Inclusion Criteria:-
All patients between 20 to 80 years of age admitted for gastric outlet obstruction were included.

Exclusion Criteria:-
Patients below 20 years and above 80 years of age respectively were excluded from this study. Patients unfit for surgery and those who didn't come for follow-up.

Data was collected on the basis of age incidence, sex incidence, socioeconomic status, personal habit, presenting signs and symptoms, clinical examination findings of the patients, routine laboratory investigations, various imaging modalities and treatment performed.

Pre-operative management included correction of dehydration and electrolytes, metabolic status, anemia and gastric lavage.

Definitive surgery was performed on the basis of investigation reports and operative findings.

Post-operative complications were watched carefully and managed accordingly.

RESULTS

Maximum cases (66%) of gastric outlet obstruction were due to antral carcinoma followed by pyloric stenosis due to cicatrized duodenal ulcer (28%). Carcinoma head of pancreas accounted for 5% cases. Cases reported due to gastric lymphoma and pseudocysts of pancreas were 1% respectively.

Out of 50 cases, 58% cases were between 40 to 60 years of age with maximum incidence in the 5th decade of life. The male to female ratio was 2:1.

Out of 50 cases, 79% cases belong to the low socio-economic group.

88% of patients were taking mixed diet and 12% patients were taking vegetarian diet.

71% of the patients were smokers in this series and 29% were non-smokers.

Projectile, non-bilious vomiting was the commonest symptom in 89% cases followed by pain in upper part of abdomen in 78% cases and constipation in 70% cases.

Table 1: Incidence Of Common Signs

Signs	Cases (in percentage)
Visible peristalsis	58%
Succusion splash	52%
Palpable lump	62%
Dehydration	66%
Emaciation	38%
Mental confusion	2%

Out of 50 cases, 66% cases presented with signs of dehydration. A hard palpable lump of different size was present in 62% cases.

Table 2: Serum Electrolytes In Different Patients

Electrolytes	Levels less than normal	
	No. of cases	Percentage (%)
Serum sodium	37	74%
Serum potassium	31	62%
Serum chloride	35	70%
Serum calcium	21	42%

In the present study, hyponatremia was present in 74% cases, hypokalemia in 62% cases, hypochloremia in 70% cases and hypocalcemia in 42% cases.

Out of 50 cases subjected to upper gastrointestinal endoscopy with biopsy study, 38 cases had antral carcinoma and 10 cases had pyloric stenosis due to cicatrized duodenal ulcer. 2 cases were lost to follow-up.

In cases of antral carcinoma, subtotal distal radical gastrectomy with antecolic Roux-en-y gastrojejunostomy was done in 44% cases and partial distal gastrectomy with antecolic Roux-en-y gastrojejunostomy was done in 31% cases. 3.2% cases of carcinoma head of pancreas underwent palliative gastrojejunostomy. 1 case of pseudocyst of pancreas underwent cystojejunostomy. Truncal vagotomy with gastrojejunostomy was done in 7% cases. Rest cases were lost to follow-up.

The most common post-operative complication was wound dehiscence (4.76%) which was managed with repeated dressing and appropriate antibiotics. No anastomotic leak was observed.

DISCUSSION

Out of 50 cases, maximum cases (66%) of gastric outlet obstruction were due to antral carcinoma followed by cicatrized duodenal ulcer (28%) which was similar to the study performed by Kumar et al [13].

Out of 50 cases, 58% cases were between 40 to 60 years of age with maximum incidence in the 5th decade of life. The male to female ratio was 2:1 which was similar to a study performed by Yogiram B et.al. [8] and Fisher et al. [9]

Out of 50 cases, maximum cases (79%) belong to the low socio-economic group which is similar to a study in northeastern Ethiopia [10]. 88% of patients were taking mixed diet and 12% patients were taking vegetarian diet.

71% of the patients were smokers in this series and 29% were non-smokers.

Projectile, non-bilious vomiting was the commonest symptom in 89% cases followed by pain in upper part of abdomen in 78% cases and constipation in 70% cases which is similar to another study by Kozoll DD et al [11] and Dworken HJ et al [12].

Out of 50 cases, 66% cases presented with signs of dehydration. A hard palpable lump of different size was present in 62% cases.

In the present study, hyponatremia was present in 74% cases, hypokalemia in 62% cases, hypochloremia in 70% cases and hypocalcemia in 42% cases which was similar to the study performed by Kumar et al. [13]

Out of 50 cases subjected to upper gastrointestinal endoscopy with biopsy study, 38 cases had antral carcinoma and 10 cases had pyloric stenosis due to cicatrized duodenal ulcer. 2 cases were lost to follow-up.

In cases of antral carcinoma, subtotal distal radical gastrectomy with antecolic Roux-en-y gastrojejunostomy was done in 44% cases and partial distal gastrectomy with antecolic Roux-en-y gastrojejunostomy was done in 31% cases. 3.2% cases of carcinoma head of pancreas underwent palliative gastrojejunostomy. 1 case of pseudocyst of pancreas underwent cystojejunostomy. Truncal vagotomy with gastrojejunostomy was done in 7% cases. Rest cases were lost to follow-up.

The most common post-operative complication was wound dehiscence (4.76%) which was managed with repeated dressing and appropriate antibiotics. No anastomotic leak was observed.

CONCLUSION

This study concludes that most common cause of gastric outlet obstruction is due to antral carcinoma in developing countries. Majority of the patients who reported early after the onset of symptoms were usually driven by repeated vomiting, pain abdomen. Clinical, radiological and other investigations play an important role in early diagnosis and prompt treatment of the patients. It can also be concluded that all such patients should be evaluated by laboratory investigations and any electrolyte imbalance should be corrected with suitable fluid and electrolytes. This helps in improving the overall general condition and metabolic status of these patients and reducing the postoperative morbidity and mortality as well.

REFERENCES

1. Samad A, Whanzada TW, Shoukat I. Gastric outlet obstruction: Change in aetiology. Pak J Surg 2007;23:29-32.
2. Kotisso R. Gastric outlet obstruction in Northwestern Ethiopia. East Centre Afr J Surg 2000;5:25-9.
3. Appasani S, Kochhar S, Nagi B, Gupta V, Kochhar R. Benign gastric outlet obstruction - Spectrum and management. Trop Gastroenterol 2011;32:259-66.
4. Bailey & Love's short practice of surgery, 27th edition, Chapter- 63 Stomach and duodenum, page no.-1129.
5. Boylan JJ, Gradzka MI. Long-term results of endoscopic balloon dilatation for gastric outlet obstruction. Dig Dis Sci. 1999;44(9):1883-6.
6. Abouna GM, Veazey PR, Terry DB. Intravenous infusion of hydrochloric acid for treatment of severe metabolic alkalosis. Surg. 1974;75(2):194-202.
7. Haubrich WS. In Henry L. Bockus (ed.) Gastroenterolo; 2nd Ed, Philadelphia: Saunders, 1963:2.
8. Yogiram B, Chowdary NV. Duodenal (ulcer) stenosis in Andhra Pradesh. A 10 year study. Ind J Surg. 1983:12-6.
9. Fisher DR, Ebert PA, Zenidena GD. Obstructing peptic ulcers results of treatment. Arch Surg. 1967;94:724-9.
10. Kotisso R. Gastric outlet obstruction in Northwestern Ethiopia. East Centre Africa J Surg. 2000;5(2):25-9
11. Kozoll DD, Meyer KA. Obstructing gastro duodenal ulcer, symptoms and signs. Arch Surg. 1964 Sep;89:491-8.
12. 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.
13. Kumar A, Afsar MA, Kumar J, Tiwary AK. An observational study on benign/malignant gastric outlet obstruction in tertiary care centre of RIMS, Ranchi, India. Int Surg J 2018;5:54-61