

Case Study

Clinical Features of Gastric Outlet Obstruction in Kigali, Rwanda

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Abstract

Background: Nowadays, the main cause of gastric outlet obstruction (GOO) is known to be malignancy, especially in the developed world. Many articles suggest that the benign causes continue to be the major cause of GOO in the developing world however, there is growing evidence proving the contrary. Males were (more commonly) affected females and individuals in their fifth and sixth decade have been the predominant age group in the majority of studies. There is a minimal data of GOO from Africa

Aims: A retrospective analysis of the endoscopic findings of patients presenting with features of GOO to determine the clinical and etiological patterns.

Materials and Methods: A retrospective study of the endoscopic findings of patients with GOO from January 2013 to January 2015 was done. The diagnosis of GOO was based on clinical presentation, and an inability during the upper endoscopy to enter the second portion of the duodenum as documented in the endoscopy registers. Patients who have already been diagnosed with malignancy prior to the endoscopy were excluded from the study; so were the patients with gastroparesis.

Results: A total of 250 patients with GOO underwent the endoscopy during the study period. 180 were had benign GOO, while malignancy was present in 30 patients, others were with different findings. The major cause for malignant obstruction was carcinoma of stomach involving the distal stomach. The male to female ratio was 3.2:1. The patients with malignancy were older than patients with benign disorders. Most of the patients were in the sixth and seventh decade. The risk of malignancy was higher with increasing age, especially in women. A fourth of all carcinoma stomach presented with GOO.

Conclusion: The study demonstrates that the cause for GOO in Kerala, South India is predominantly malignancy. The etiological and demographic patterns were similar to the studies conducted in the developed nations.

Key words: Causes, demographic pattern, gastric outlet obstruction, India.

Introduction

Gastric outlet obstruction (GOO) is a term used to describe a condition characterized by the inability of gastric contents to go beyond the proximal duodenum. The obstruction may be partial or complete. Apart from the mechanical impediment of the flow of gastric contents; there are other concerns in patients with GOO such as malnutrition and electrolyte imbalance.

The incidence of GOO is not precisely known. Until the discovery of proton pump inhibitors and H2 blockers, the major cause of GOO was peptic ulcer disease (PUD). The discovery of *Helicobacter pylori* and developing an effective treatment for the same has resulted in fewer cases of PUD presenting with GOO ; however, in the modern era, the major cause is known to be malignancy, especially in the developed world. The prevalence of *H. pylori* has been reported to be high with about 80% of the population being affected and the prevalence of peptic ulcer and gastric carcinoma are 8.0/100,000 and 3.0/100,000, respectively. There are no studies to suggest whether there has been a change in the statistics during the course of this study. Many books and articles do suggest that the benign causes continue to be the major cause of GOO in the developing world, however, there is growing evidence proving the contrary. Peripancreatic malignancy has been reported as the foremost malignant cause for obstruction in studies, whereas gastric carcinoma has been implicated as the most common malignant cause in other studies.

Males are more commonly affected than females (with 3.2:1 ratio). The sex ratio was similar in both malignant and benign causes.

Most patients with GOO are in the middle age group.

This study is undertaken to understand the etiological spectrum of GOO in our center in Kigali Rwanda.

Materials and Methods

This is a retrospective analysis of patients who presented to the department of internal medicine from January 2013 to January 2015 was done with features of GOO. The ethical approval was obtained from the Ethics and Institutional Review Board at Kigali Medical College and informed consent obtained from the patients. Our center is a tertiary care center and a teaching hospital with a capacity of about 400 beds. The data were collected from the endoscopy registers maintained by the Department of internal medicine. The patients included in the study were over the age of 18, with clinical features of GOO such as upper abdominal distension after food intake and nausea and vomiting; with vomitus containing undigested food particles along with the inability to pass the endoscope beyond the second part of the duodenum. The patients with gastroparesis and previous diagnosis of malignancy were excluded. The procedure was done at the endoscopy suite of the Department of internal medicine. The patients were kept nil by mouth for over 4 h, and endoscopy was

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done after correction of electrolyte abnormalities and maintaining adequate hydration. In the post procedure period, the patients were monitored and discharged on the same day after observation.

Statistical Analysis

The statistical analysis was performed using Statistical Package for Social Sciences (SPSS) version 17.0 for Windows (SPSS, Chicago, IL, USA). The median and ranges were calculated for continuous variables, whereas proportions and frequency tables were used to summarize the categorical variables. Continuous variables were categorized. The chi-square (χ^2) test was used to test for the significance of the association between the independent (predictor) and dependent (outcome) variables in the categorical variables. The level of significance was considered as $P < 0.05$.

Results

During the study period from January 2005 to December 2014, a total of 250 patients presented with features of GOO.

The male to female ratio was 3.2:1 with 170 males and 80 females. 30 patients (12%) had malignant cause for GOO and 210 had nonmalignant causes.

Benign causes were the predominant cause both in males and females. Among males, 56.32% had a benign GOO, and 43.68% had malignant causes, whereas in females 77.78% had non-malignant causes with 22.22% who had malignant causes for GOO. The females with benign obstruction presented significantly ($P < 0.006$) at an older age (mean age of $59.79 \pm$ standard deviation [SD]: 13.52, range: 19–88) compared to patients with malignant pathology (mean age of $49.67 \pm$ SD: 13.36, range: 23–73). As seen in females in males too, the non-

malignant causes appeared at an older age (mean age of $60.99 \pm$ SD: 10.30) as compared to the malignant causes (mean age of $53.25 \pm$ SD: 13.25). The maximum numbers of patients were in their sixth and seventh decade.

The causes for benign obstruction were 170 of the 172 patients were diagnosed with PUD with one case of duodenal polyp and another case of duodenal diverticulum. The major cause for malignant obstruction was carcinoma of stomach accounting for 22 cases and the remaining 8 cases of malignant GOO being caused by peripancreatic cancer.

During the same time period, the total number carcinoma of stomach detected during the same time period were 30; of which 17 presented with features of GOO.

Limitations

The study evaluated the endoscopic findings of patients with GOO and studied age, sex, and etiological causes. The study did not evaluate the further course of these patients, the surgeries or procedures, they underwent and the follow-up. However, the study may be used for a follow-up study.

Conclusion

The etiology of GOO in Kigali, Rwanda is predominantly non-malignancy which is different to trends in developed nations. Gastric carcinoma is the major malignant cause. Males were more commonly affected than females, and the middle age individuals were more commonly affected.

References

1. Dr Benoit seminega gastroenterologist at Kigali university teaching hospital.