

Gastric outlet obstruction in Maiduguri

D. Dogo, T. Yawe, and B.M. Gall.

Department of Surgery, College of Medical Sciences, University of Maiduguri and the University of Maiduguri Teaching Hospital.

Summary

In a review of sixty-four (64) cases of gastric outlet obstruction (G.O.O.) seen at the University of Maiduguri Teaching Hospital between 1991 and 1996, cicatrising chronic duodenal ulcer accounted for 65.7% of cases, followed by antral carcinoma of the stomach 15%, congenital hypertrophic pyloric stenosis 9.4%, carcinoma of the head of pancreas 6% and congenital bands 3%. The usual presentations were forceful vomiting in a patient with background history of dyspepsia of varying duration depending on cause, visible persistalsis, weight loss, abdominal masses and electrolyte imbalances. Diagnoses was easy clinically and confirmed by barium studies and/or gastroduodenoscopy. Treatment offered depended on the cause of gastric outlet obstruction.

Keywords: *Gastric outlet obstruction, Maiduguri.*

Résumé

Dans une revue de soixante quatre (64) cas de blockage disorb' gastrique obsecue cu centre hospitalier Universitair de Maiduguri entre 1991 et 1996, les ulcers chronique cuatrise'es du duodenum dans 65.7% de cas, zurvi due cancer antral de clestomach 15%, hygetrophie congenitals gylorique stenoses 9.4%, cancer de late'te du ganlrlas 6% et bunde congenitals 3%, les presentation habituelles etaient des vomissement forles chez un patient auce une historique de dyspapsie d'une duree urice dependant de la caue, de peristolsie visible, de perte de poids, de masse anormales et d'electrocytes inadquat. le diagnostic clinique etait facile et confirme par ces etudes be barium et oude gastroduodenoslapique. le traitement affert et dependait de la cause da blocage de sorti gastrique.

Introduction

Gastric outlet obstruction refers to obstruction at the pyloroduodenal area. This could be the result of cicatrisation and oedema due to chronic duodenal ulcer as commonly seen in Africans and Asians [1,2] or antral tumors or to congenital causes in children. In developing countries, patients with gastric outlet obstruction present late due to ignorance or poverty, having tried alternative medical treatment before seeking orthodox attention, when disease is either advanced or complicated. This paper seeks to present our experience with the management of 64 cases of gastric outlet obstruction seen at this referral centre between 1991 and 1996.

Material and methods

Medical records of 64 patients managed for gastric outlet obstruction at the University of Maiduguri Teaching Hospital between 1991 and 1996 were retrieved from the Medical Records Department of the hospital. Data on patient's age, sex, probable cause of gastric outlet obstruction, clinical presentation, investigations, interval between onset of symptoms and presentation, treatment and outcome were extracted and analysed.

Correspondence: Dr. Dilli Dogo Department of Surgery, College of Medical Sciences, University of Maiduguri, P.M.B. 1069, Maiduguri, Nigeria.

Results

The age at presentation (table 1) varied widely, showing three peaks which seemed to represent the likely cause of gastric outlet obstruction.

Table 1: Age at presentation

Years	Male	Fem	Total	%
1	2	4	6	9.4
1-10	4	-	4	6.25
11-20	-	-	-	-
21-30	14	2	16	25
31-40	8	-	8	12.5
41-50	16	-	16	25
51-60	10	-	10	15.6
60	2	2	4	6.25
Total	56	8	64	100

The first peak occurring during infancy and childhood seem to represent congenital causes, the second peak at ages 21 - 30 represent cases caused by cicatrising duodenal ulcer disease while the third peak of ages 40 - 50 years represent both cicatrising chronic duodenal ulcer disease and antral tumors.

There was an overall male preponderance of 13:2 in this study. Chronic cicatrising duodenal ulcer was the commonest cause of gastric outlet obstruction in this study (table 2) followed by antral carcinoma of the stomach, then congenital causes.

The commonest clinical feature was vomiting which was seen in all cases (table 3). Over 70% presented six months after onset of vomiting. Other features present include history of dyspepsia (87.5%), loss of weight (75%), visible peristalsis, dehydration and constipation (62.5% each). The rest of the clinical features were as related to the primary disease. All our patients were from the peasant class and most of them had varying degrees of weight loss possibly due to dehydration and inanition. Total serum protein levels were between 55-70 g/l and with albumin levels between 25 and 35 g/l.

Table 2: Cause of G.O.O. (in 64 cases seen 1991-1996)

Cause	No. of cases	Presentation
1. Chronic cicatrising duodenal ulcer (CCDU)	42	65.6%
2. Antral carcinoma of the stomach	10	15.62%
3. Congenial hypertrophic pyloric stenosis	6	9.4%
4. Congenital bands	2	3.12%
Carcinoma head of pancreas	4	6.25%
Total	64	100%

Table 3: Clinical features

Symptoms	Frequency	Percentage
Epigastric pain/dyspepsia	56	87.5
Vomiting	64	100
Weight loss	48	75.0
Constipation	40	62.5
Anorexia	52	81.3
Hematemesis	26	40.6
Malena	24	34.5
Signs	Frequency	Percentage
Cachexia	48	75.6
Visible persistalsis	40	62.5
Succussion splash	22	34.4
Dehydration	40	62.5
Palpable mass	20	31.3
Epogastric scarification		
Marks	20	31.3

Those due to neoplastic causes presented with more severe forms of hypoproteinaemia, sometimes with ascites. Sixteen percent of cases showed some degree of hypokalemia at presentation (K^+ 2-3 mmol/l) while sixty-five percent of cases showed tendency of alkalosis (HCO_3^- 25 B32 mmol/l).

Diagnoses were essentially clinical but confirmed by barium meal in 56% of cases and/or gastroduodenoscopy in the rest.

All cases caused by cicatrising chronic duodenal ulcer had truncal vagotomy and pyloroplasty as a standard procedure, except four who had truncal vagotomy and gastrojejunostomy due to technical difficulties.

The antral tumours were all adenocarcinoma with varying grades of differentiation (2 well-differentiated, 5 moderately differentiated and 3 poorly differentiated). Most cases had peritoneal seedlings, sometimes with hepatic metastases and 2 patients had palliative gastrojejunostomy due to poor condition of the patients.

Those who had congenital hypertrophic pyloric stenosis had Ramsted's operation, while those who had carcinoma of the pancreas had palliative simple gastrojejunostomy due to advanced disease.

There was one postoperative death in the chronic duodenal ulcer group due to duodenal fistula at pyloroplasty site, whereas 2 patients in the carcinoma of the head of pancreas group died before leaving hospital due to inanition and advanced disease.

Patients were followed up for a variable length of time, the longest period of six months in only 30% of the duodenal ulcer group before they were lost to follow-up. No recurrence was seen during this period.

Discussions

Gastric outlet obstruction occurs worldwide, but the cause varies from one place to another. In Africa and India, chronic cicatrising duodenal ulcer is the commonest cause while in Western countries, it accounts for only 2-4% of cases [2]. In Nigeria, gastric outlet obstruction complicates 26-50% of chronic duodenal ulcer cases [3,4,5,6]. It complicates about 32% of cases in Ghana and about 11% of cases in Burundi [1]. In fact gastric outlet obstruction may be the main indication for surgery on patients with chronic duodenal ulcers in many hospitals.

In this study, chronic duodenal ulcer is the commonest cause of gastric outlet obstruction (65.5%), followed by antral carcinoma of the stomach (16%). This is similar to other reports across Africa [5,6,7,8]. Congenital causes are still relatively uncommon.

The age at presentation of the duodenal ulcer group (20 - 30yrs) is earlier compared to 30 - 40yrs in Ellis' series, though he also reported cases of teenagers presenting with established pyloric stenosis due to chronic duodenal ulcer disease [7]. Could it be that our younger generation is getting exposed to ulcerogens (? stress) earlier in life now?

The male:female ratio of 13:2 in this study does show that gastric outlet obstruction seems to affect more males than females. While congenital causes are known to be common in male (M:F 4:1) [2], chronic peptic ulcer as a cause is more common (M:F 7:1).

The pattern of clinical features were similar to those of other reports [3,4,5]. Though standard operative procedures were carried out depending on the cause, adequate preoperative preparation/resuscitative measures including correction of fluid and electrolyte deficits were key to successful outcome. Also early operative intervention may be necessary especially where facilities for total parenteral nutrition are lacking, as prolonged gastric lavage may worsen hypoproteinaemia/hypoalbuminaemia, hence the outcome. This is important for surgeons practicing in a depressed economy as in Nigeria.

Acknowledgements

We wish to thank staff of the Medical Records Department for helping to retrieve the patients case records. We also wish to thank Mrs. Halima Wakilbe for her secretarial assistance.

References

1. Tovey FI and Tunstall M. Progress report: Duodenal ulcer in black population in Africa South of the Sahara. *Gut*: 1975; 16:564-576.
2. Bodoie AE, Tandoh JFK. and Solanke TF. Stomach and duodenum. In: Badoie EA., Archampong, EQ, Jaja, MOA. (eds). Principles and practice of surgery including pathology in the tropics. Tema. Ghana Publishing Corporation 1994: 543 - 514.
3. Solanke TF and Itayemi SO. The management of duodenal ulceration in Western Nigeria. *E Afr Med J* 1970; 47: 1-9.

- 4 Solanke TF Chronic duodenal ulcer in Western Nigeria. ChM. Thesis. 1976; University of Dundee, Scotland.
- 5 Lewis FA and Bohrer SP. Gastric Outlet Obstruction in Adults in Ibadan, Nigeria. *W Afri Med J* 1970; 19: 59-64.
- 6 Adekunle OO. Duodenal ulcer in Nigeria: A clinical study of 200 patients. *Journal of the Royal College of Surgeons of Edinburgh* 1983; 28(5): 308 -311.
- 7 Ellis M A. Study of peptic ulcer in Nigeria. *British Journal of Surgery*, 1984; 36: 60 - 65.
- 8 Annual Medical and Sanitary Reports of Nigeria: 935:38.