

Gastric outlet obstruction in Ogbomoso, Nigeria.

*D. A. Olaolorun and I. O. Oladiran
Baptist Medical Center, Ogbomoso, Nigeria.

Summary

Forty-three patients were operated upon for gastric outlet obstruction over an eight year period. Six (14%) of these patients had malignant gastric outlet obstruction. Three groups of procedures were used: truncal vagotomy and drainage (TV-D) in 32 patients, highly selective vagotomy and drainage (HSV-I) in 8 patients, and gastric resection with or without vagotomy in 3 patients.

Post-operatively, it took an average of 6.6 days for patients to recommence oral intake (6.2 days for patients who underwent truncal vagotomy and 8.5 days for those who underwent highly selective vagotomy). There were no deaths; immediate post-operative morbidity included gastric atony in 21% and wound infection in 7% of the patients. Long-term complications include postvagotomy diarrhea in one patient and dumping in two patients. One patient had a recurrence of gastric outlet obstruction necessitating re-operation.

Key words: *Peptic ulcer disease, Gastric outlet obstruction, Vagotomy Emesis.*

Résumé

Quarante trois patients ont été opérés pour l'obstruction du ventre au dessus de la période du huit année. Parmi ces patients six avaient l'obstruction cancéreuse du ventre.

Les trois procédures qui ont été utilisées étaient: "truncal vagotomy and drainage" (TV-D) parmi trente deux patients. Deuxièmement, "highly selective vagotomy and drainage" (HSV-D) parmi huit malades et troisièmement on a coupé quelque partie du ventre avec ou bien sans "vagotomy" pour trois malades.

Après l'opération, les patients commencent à manger pendant en moyenne de 6.6 jours (6.2 jours pour les patients qui avaient subi "highly selective vagotomy". Il n'y avait pas des morts mais les maladies qui étaient apparues immédiatement après l'opération incluent: la fatigue du ventre parmi 21% et les blessés contagieux étaient 7%.

Il y a aussi longtemps maladies comme "post-vagotomy" diarrhée en un seul patient et nourriture déposer en deux patients. Un patient avait obstruction du ventre encore qui rendre une autre opération nécessaire.

*Correspondence

Introduction

In Nigeria, dyspepsia is a common symptom for which patients present in many hospitals and clinics. In relatively few of these patients is a definitive diagnosis ever made for the cause of dyspepsia. This is as a result of the unavailability of radiographic and endoscopic diagnostic facilities as well as the dearth of trained and experienced radiologists and gastroenterologists. Treatment is often intermittent, irregular and inadequate, in part because the prescribed antacids and H₂-receptor blockers are unaffordable and in some instances unavailable to a large number of patients.

As a consequence of these, many patients with benign peptic ulcer disease develop gastric outlet stenosis and those with malignant gastric ulcers go on to develop obstruction as the disease advances and progresses.

We undertook a retrospective review of all the patients treated for gastric outlet obstruction in our institution in the eight-year period between 1986 and 1994 in order to document our results and this is a report of our experience. This information is important as we seek ways to improve our outcome and the quality of life of these patients.

Materials and methods

The medical records of 43 consecutive patients diagnosed with gastric outlet obstruction between 1986 and 1994 were reviewed. Information was extracted and recorded for each patient regarding the following; age, sex, symptoms and signs at presentation, diagnostic investigation carried out, surgical procedures carried out, number of days between operation and oral intake, number of days between operation and discharge from hospital, post-operative complications, medications used for treatment preoperatively and the outcome of the operative procedures.

Results

The 43 patients in this study consisted of 27 males and 16 females, giving a male to female ratio of 1.7:1, and they ranged in age from 18 to 75 years with the mean age being 46 years. The mean age for male was 45 years and for females, 48 years.

These patients presented with a myriad of symptoms

and signs, the most common of which was abdominal pain which occurred in 40 (93%) of the patients. The others were emesis 38 (88%) patients, succussion splash 32 (74%) patients, weight loss 27 (63%) patients, distended abdomen 24 (56%) patients, visible peristalsis 22 (51%) patients, easy satiety 9 (21%) patients, abdominal mass 5 (12%) patients, and rectal mass 1 (2%) patient.

The average duration of symptoms was 85 months and it ranged from one to 360 months. Sixty-three percent (27 of 43) underwent upper endoscopy for diagnosis while 19% underwent saline load test. Only 7% underwent upper gastrointestinal Xray studies (Barium swallow and follow-through). The operative procedure, number of patients and percentages were as follows: (a) truncal vagotomy and drainage (TV-D) 32 (74%) consisting of Heineke-Mikulicz pyloroplasty 2 (4.65%), gastrojejunostomy 24 (55.8%) and gastroduodenostomy 6 (13.95%); (b) highly selective vagotomy and drainage (HSV-D) 8 (18.6%) consisting of gastroduodenostomy 7 (16.3%) and gastrojejunostomy 1 (2.3%); (c) gastric resection with or without vagotomy (GR) 3 (6.97%) consisting of truncal vagotomy, GR and gastroduodenostomy 1 (2.32%), truncal vagotomy, GR and gastrojejunostomy 1 (2.32%) and GR and gastrojejunostomy 1 (2.32%).

Post-operatively it took between 3 and 26 days for patients to recommence oral intake, with the average being 6.6 days. The patients who underwent truncal vagotomy took an average of 6.15 days to restart oral intake while those who underwent highly selective vagotomy took an average of 8.5 days. On the average most patients spent 12.7 days in hospital (range 5-34 days). When broken down, patients who underwent truncal vagotomy and drainage spent 11.8 days on the average, those who underwent highly selective vagotomy and drainage 15.4 days and those who had gastric resection and drainage 15 days.

Twenty-four (55.8%) of the patients had been treated with antacids prior to the onset of their obstructive symptoms and 9 (20.9%) with H₂-receptor blockers. Two (4.65%) patients had taken traditional (native) medications while the remaining 8 (18.6%) had not been treated with any medications prior to the onset of symptoms of gastric outlet obstruction.

The two immediate post-operative complications were gastric atony 21% and wound infection 7%. Post-operative follow-up period ranged between 1-120 months with an average of 24 months. Only one patient had postvagotomy diarrhea and 2 had dumping symptoms, which improved over the course of a year. The one patient with diarrhea and one of the two with dumping had undergone truncal vagotomy and pyloroplasty. One of the patients who had previously undergone highly selective

vagotomy and gastroduodenostomy developed recurrent symptoms of gastric outlet obstruction and he required a hemigastrectomy and gastrojejunostomy to correct this.

Six patients were diagnosed with malignancy (14%) and at last visit, they were doing poorly. Five of the 6 patients had undergone preoperative oesophagogastroduodenoscopy. Of these, two underwent resectional therapy for exophytic lesions and the others underwent gastrojejunostomy. There were no preoperative histopathologic diagnoses but the two who underwent resectional therapy had endoscopic diagnosis made preoperatively.

Two of the patients with malignant disease were males and 4 were females and the average age for them was 52 years. Follow-up in them was for an average of 10 months at which point most were in terminal states. One of these people died in the hospital, fourteen months after his operation.

Discussion

For over two decades now, especially since the introduction of histamine receptor blockers into the market, the incidences of ulcer complications and operation for ulcer complications have decreased in parts of the industrialized nations of the world^{1,2}. Over the past decade, several other drug treatments have been introduced^{3,4}, further ensuring that complications of peptic ulcer disease are kept in abeyance. In a paper which was published about two and half decades ago⁵, gastric outlet obstruction (pyloric stenosis) was reported to be very commonly seen in Africa south of the Sahara. It was the most frequent complication of peptic ulcer disease. Unfortunately because of many factors such as irregular and inadequate treatment and inability to afford the cost of recent drugs, the complications of peptic ulcer disease are still seen frequently here in Nigeria⁶.

In a recent study from Zaria in Northern Nigeria⁶, gastric outlet obstruction was the commonest of the complications of peptic ulcer disease, like it has been for over twenty years in sub-Saharan Africa. Even though no objective studies have been carried out here, we have observed the same pattern. In contrast to this, in the USA, gastric outlet obstruction is the indication for operation in only 10-15% of duodenal ulcer patients treated surgically⁷.

In our hospital, patients with gastric outlet obstruction get a variety of operations, the choices of which depend on the personal preferences and experience of the particular surgeon involved. Most of our patients undergo truncal vagotomy and gastrojejunostomy. This is probably the easiest of the several potential procedures, technically. Despite the several different operative procedures, overall, the patients in this series had relatively good outcomes

when compared to other studies⁸.

The patients in this series who underwent truncal vagotomy did better than those who underwent highly selective vagotomy. This is at variance with the results elsewhere⁹. This may be explained by the relatively small number of patients who underwent highly selective vagotomy in this series. It is known that in theory, highly selective vagotomy should give better results when compared to truncal vagotomy because of the preservation of vagal innervation to the antrum and the maintenance of the "antral pump". As a consequence, the incidence of post-operative gastric atony among others should be less in patients who undergo highly selective vagotomy.

Over 18% of patients in this series had taken no medications prior to the onset of obstructive symptoms in them. It is known that many patients never have a prior ulcer type pain before presenting with the complications of duodenal ulcer such as perforation, haemorrhage and gastric outlet obstruction¹⁰. It is possible that these patients fall into this group.

Only one patient had recurrent pyloric stenosis. He had initially highly selective vagotomy and gastroduodenostomy. He had a salvage stomach resection but was lost shortly afterwards. Other people¹¹ have found highly selective vagotomy and gastroduodenostomy to be very satisfactory and recommend it in place of gastric resection which is universally known to have the least rate of recurrence of ulcer disease, of all the known procedures.

Our 14% incidence of malignancy in this series is less than the 26.2% (intraluminal) reported from Accra¹². There is no obvious explanation for the rather large difference in the rates. The six patients with malignant disease in this series did not do well, not surprisingly. Smith and Brennan¹³ in their review of the surgical treatment of gastric cancer stated... "Early gastric cancer without lymph node metastasis is highly curable, whereas advanced cancer is associated with a poor prognosis." It is obvious that if we are to have longer disease-free survival, early diagnoses have to be made and operations with curative intents have to be performed instead of the current late diagnoses and palliative operations. It is now incontrovertible that *Helicobacter pylori* has a causal relationship with peptic ulcer disease, gastritis and gastric carcinoma^{14,15}. Perhaps the best way of preventing the complications of peptic ulcer disease and gastric carcinoma such as gastric outlet obstruction is to vigorously treat patients with dyspepsia for *pylori* even in institutions such as ours where facilities for the definitive identification of the presence of this microorganism are not available.

Acknowledgment

Many thanks go to Mrs. Adejoke Oyelowo for

secretarial assistance, Dr. Funmi Fadeji for help in getting vital literature, and Dr. Victor Ebeonuwa and Mrs. Olasoko for translating the abstract into French.

References

1. McConnell DB, Baba GC, Deveney CW. Changes in Surgical Treatment of Peptic Ulcer Disease within a Veterans Hospital in the 1970s and the 1980s. *Archives of Surgery*, 1989; 1164-7.
2. Johnson CD, Ellis H. Gastric Outlet Obstruction now predicts malignancy. *British Journal of Surgery*, 1990; 77:1032-4.
3. Graham DY, Colon-Pagan J, Morse RS, *et al.* Ulcer recurrence following Duodenal Ulcer healing with Omeprazole, Ranitidine or Placebo: a double-blind, multicenter 6-month study. *Gastroenterology*, 1990; 12(suppl 2): 548-53.
4. Hentshell E, Brandstatter G, Dragosics B, *et al.* Effect of Ranitidine and Amoxicillin plus Metronidazole on the Eradication of *Helicobacter pylori* and the recurrence of duodenal ulcer. *N Engl J of Med*, 1993; 328: 308-12.
5. Tovey FI, Tunstali M. Duodenal ulcer in black populations in Africa south of the Sahara. *Gut*, 16: 1975; 564-76.
6. Ameh EA, Nmadu PT. Pattern of Peptic Ulcer Disease in Zaria, Nigeria. *East Afr Med J*, 1998; 75(2): 90-2.
7. Stabile BE. Current Surgical Management of Duodenal Ulcers. *Surgical Clinics of North America*, 1992; 72(2): 335-56.
8. Gleysteen JJ, Droegge EA. Expedient Surgical Treatment of Chronic Ulcer Stenosis: A Case for Proximal Gastric Vagotomy. *Journal of Clinical Gastroenterology*, 1988; 10(6): 619-22.
9. Csendes A, Maluenda F, Braghetto I, Schutte H, Burdiles P, Diaz JC. Prospective Randomized study comparing three surgical techniques for the treatment of gastric outlet obstruction secondary to duodenal ulcer. *Am J Surg*, 1993; 166(1): 45-9.
10. McGuigan JE. Peptic Ulcer and Gastritis. In: Wilson JD, Braunwald E, Tselbacher KJ, Petersdorf RG, Martin JB, Fauci AS and Root RK. Eds. *Harrison's Principles of Internal Medicine*. 12th ed. New York: McGraw-Hill: 1991; 1229-48.
11. Dittrich K, Blauensteiner W, Schrukka-Kolbl C, Hoffer F, Annbruster C, Vanik J. Highly Selective Vagotomy plus Jaboulay: a possible alternative in patients with benign stenosis secondary to duodenal ulceration. *J Am Coll Surg*, 1995; 180(6): 654-8.

12. Badoe EA. Gastric Outlet Obstruction in adults-Korle Bu Teaching Hospital, Accra. *W A M J*; 1972; 154-8.
13. Smith JW, Brennan MF. Surgical Treatment of Gastric Cancer. *Surgical Clinics of North America*, 1992; 72(2): 381-99.
14. Mertz HR, Walsh JH. Peptic Ulcer Pathophysiology. *Medical Clinics of North America*, 1991; 75(4): 800-14.
15. Fennerty MB. *Helicobacter pylori*. *Arch Intern Med*, 1994; 154:721-7.