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SURGICAL MANAGEMENT OF PEPTIC ULCER DISEASE

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ABSTRACT

Objective: To determine the pattern of surgically managed peptic ulcer disease.

Design: A retrospective study.

Setting: Department of Surgery, Moi Teaching and Referral Hospital, Eldoret, Kenya.

Subjects: Fifty three patients operated on for peptic ulcer disease.

Results: The mean age was 47 years with a male/female ratio of 1.7:1. Duodenal ulcer associated complications were the commonest with duodenal ulcer/gastric ulcer ratio of 11.5:1. Most patients had chronic peptic ulcer symptoms with inadequate or no medical treatment. Perforations were the commonest complications (56.6%) followed by gastric outlet obstruction (34.0%). Closure with omental patch was done in 83.3% of perforations while truncal vagotomy and drainage was done in gastric outlet obstruction. Hypostatic pneumonia was the commonest post-operative complication. Seventy one point seven per cent of the patients were free of dyspeptic symptoms during the brief follow-up period.

Conclusion: Most patients with chronic peptic ulcers had had inadequate treatment and perforation was the most common complication. Repair of perforations with omental patch, and truncal vagotomy and drainage procedure for gastric outlet obstruction, were satisfactory surgical methods offered to patients at the Moi Teaching and Referral Hospital.

INTRODUCTION

In the western world, peptic ulcer is one of the commonest diseases of the alimentary tract(1). In our region, duodenal ulcer is the commonest lesion as was shown endoscopically in a study done in Nairobi by Lule *et al*(2). The ratio of duodenal/gastric ulcer was 15:2 as compared to reports from the western world where ratios of 3:1 to 4:1 have been shown. Gastric ulcer is therefore rarer in our population. It has also been shown that the male Kenyan is twice as predisposed to the ulceration as is his female counterpart, and gets it at an earlier age(3).

The introduction of efficacious H₂ antagonists and more recently, the proton pump inhibitors, has had a dramatic effect on the treatment of peptic ulcer disease. A healing rate of 97% was achieved in a study with short course therapy with ranitidine in Nairobi(4). Effective medical therapy has also diminished the number of hospital admissions. Further to this, the recognition of *helicobacter pylori* as an aetiologic agent, and therefore its eradication, has gone a long way in improving non-operative management of these patients (1,4-6). Consequently, there has been a decrease in elective operations for refractory ulcers. Surgery is now mainly for those presenting with complications (bleeding, perforation and obstruction).

In Nairobi, perforations were shown to affect the younger age group (in the 3rd decade) and most of the patients had chronic dyspeptic symptoms(7), while experience from parts of Nigeria shows that obstruction has overtaken perforations in incidence(8,9).

There is no existing information on peptic ulcer disease at this hospital. This review was therefore undertaken to establish the pattern and outcome of surgically treated peptic ulcer disease related problems in this hospital.

MATERIALS AND METHODS

The Moi Teaching and Referral Hospital has risen from a district hospital to a referral centre for Western Kenya region and a teaching institution for the Moi University medical school. It handles some of the emergencies and most of the referred patients from its catchment areas.

Fifty-three files of patients admitted and operated upon for peptic ulcer disease complications between June 2000 and December 2001 were reviewed. These had the necessary details for analysis.

RESULTS

During the period between June 2000 and December 2001, a total of 53 patients with peptic ulcer related complications were operated upon.

Table 1*Age sex distribution*

Age (yrs)	Sex				Total	%
	Duodenal ulcer		Gastric ulcer			
	M	F	M	F		
<10	1	0	0	0	1	1.9
10-19	1	0	0	0	1	1.9
20-29	1	1	0	0	2	3.8
30-39	11	6	0	1	18	34.0
40-49	5	3	1	0	9	17.0
50-59	7	0	0	1	8	15.1
60-69	6	4	0	0	10	18.9
70-79	0	2	1	0	3	5.7
80-89	0	1	0	0	1	1.9
Total	32	17	2	2	53	100

Mean age: 47 years; Male: female ratio: 1.7:1
 Duodenal ulcers: 92%; Gastric ulcers: 8%
 Duodenal ulcer/Gastric ulcer ratio: 11.5:1

Table 2*Presentation*

Diagnosis	Duodenal		Gastric		Total
Gastric outlet obstruction (GOO)	9	9	0	0	10
Perforations	22	4	2	2	30
GOO and Perforations	1	1	0	0	2
Haemorrhage	1	1	0	0	2
Refractory Ulcer	0	1	0	0	1
Total	33	16	2	2	53

Perforations: 56.6%
 GOO: 34.0%

Most of those with perforations arrived late (mean lapse of 62 hours). Fourteen point three per cent of the patients with perforations were in shock.

Table 3*Age distribution of perforations*

Age (yrs)	Duodenal ulcers	Gastric ulcers	Total
<10	0	0	0
10-19	0	0	0
20-29	1	0	1
30-39	12	0	12
40-49	1	1	2
50-59	7	1	8
60+	6	0	6
Total	27	2	29

Majority were in the 3rd decade

Table 4*Age distribution of gastric outlet obstruction*

Age (yrs)	No. of patients
<10	0
10-19	1
20-29	1
30-39	5
40-49	7
50-59	0
60+	5
Total	19

Majority were in the 4th decade

Table 5*Previous history of treatment*

Treatment	No. of patients
Nil	38
Anti-acids	5
H ₂ - antagonists	7
Proton pump inhibitors	3
Total	53

Eighty one percent of the patients were not on any form of treatment for dyspepsia. *Helicobacter pylori* eradication treatment could not be established in those who were on treatment.

Table 6*Previous history of dyspepsia*

Previous symptoms	No. of patients	%
Symptoms present	45	85.7
Symptoms absent	8	14.3
Total	53	100

Chronicity of symptoms present in the majority (85.7%) of the patients. The eight patients who had no prior symptoms presented with perforations.

Table 7*Surgical procedure*

Procedure	No. of patients
Truncal vagotomy and Gastrojejunostomy (TV + GJ)	21
Closure of perforation with omental patch	25
Closure of perforation and TV + GJ	4
TV and antrectomy	2
Highly selective vagotomy	0
TV and pyloroplasty	1
Total	53

Closure with omental patch was the procedure of choice in perforations while truncal vagotomy and gastrojejunostomy was done in gastric outlet obstruction.

Table 8*Post-operative complications*

Complication	No. of patients
Wound Sepsis	2
Peritoneal abscess	2
Hypostatic pneumonia	6
Death	0
Total	10

Mean period of hospital stay was 11 days. Those who presented with perforations were discharged on tripple therapy.

Table 9

Follow up findings

Follow up findings	No. of Patients
Improved: no symptoms	38
Dyspeptic symptoms	8
Lost to follow up	7
Total	53

Adequate evaluation was not possible because most patients were lost to follow-up, and the period of follow-up was short.

DISCUSSION

In this retrospective study at the MTRH, a total of fifty-three patients with peptic ulcer disease complications were operated upon between June 2000 and December 2001. The majority were males with a male/female ratio of 1.7:1. This is comparable to findings in Nairobi where a ratio of 2:1 was found(3). Forty-nine (92.0%) patients presented with duodenal ulcer complications while four (8.0%) patients presented with gastric ulcer complications, with a duodenal ulcer/gastric ulcer ratio of 11.5:1. The majority of patients (34.0%) were in the 3rd decade with a second peak (18.9%) in the 6th decade. The high incidence of duodenal ulcer complications in the younger male population noted here is comparable to findings documented in Nairobi and parts of Nigeria(8,9).

The most common indications for surgery was perforation followed by gastric outlet obstruction. While the pattern of complications has changed from perforations to obstruction in reports from Nigeria (8,9), this was the commonest complication in Eldoret. Similar to findings in Nigeria(8), haemorrhage was an unknown complication as opposed to findings in the developed countries. Most of the patients with perforations presented late (mean lapse of 62 hours). This is a common observation in most reports from the developing world(7,10). The delay in presentation increases operative morbidity and mortality(10,11). In the developed world, most of the perforations are in the elderly population with acute ulceration due to increased use of ulcerogenic drugs while in Eldoret as elsewhere in the developing world, this is more common in the young with chronic ulcers(1,7).

Positive history of treatment for peptic ulcer was present in 15(28%) patients. Of these, 10(66.5%) had used efficacious H₂ antagonists and proton pump inhibitors. The treatment was however erratic and specific treatment for eradication of *H. pylori* could not be confirmed from the information of previous treatments in the files. Thirty-eight (85.7%) patients had chronic dyspeptic symptoms. The eight (14.3%) who had no previous history of dyspepsia presented with perforations. The closure of the perforations with an omental patch was the operation of choice

in this centre. This is a rapid and easy procedure that has been shown to be effective with less complications in those at risk(10,12). Truncal vagotomy and drainage was the procedure of choice in patients with obstruction.

Hypostatic pneumonia was the most common complication noted. Thirty-eight (71.7%) patients reported improvement, by absence of dyspeptic symptoms, during the follow-up period. However, the period was too short, while some patients stopped attending the clinic too early for firm conclusions.

This study has shown that most of the patients who presented with complications had had inadequate or no treatment at all. This may be due to the relatively high cost of tripple therapy for peptic ulcers. Other factors may be present that require to be established.

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REFERENCES

1. Juma, F.D., Ranitidine in the treatment of peptic ulceration in Kenyans. *East Afr. Med. J.* 1985; **62**:752-754.
2. Lule, G.N., Wankya, B.M., Shah, M.V. and Greenfield, C. Peptic ulcer disease at Kenyatta National Hospital. An endoscopic experience. *East Afr. Med. J.* 1987; **64**:638-642.
3. Lule, G.N. and Wankya, B.M. Duodenal ulcer disease at Kenyatta National Hospital. *East Afr. Med. J.* 1985; **62**:784-790.
4. Ogutu, E.O., Kangethe, S.K., Nyabola, L. and Nyong'o, A. Endoscopic findings and prevalence of *Helicobacter Pylori* in Kenyan patients with dyspepsia. *East Afr. Med. J.* 1998; **75**:85-89.
5. Rollan, A. Eradication of *Helicobacter Pylori* in developing countries. *Revista Medica de Chile.* 1997; **125**:939-949.
6. Lorusso, D., Perolla, F., Lantone, G., Misciagna, G. and Guerra, V. Surgical therapy of peptic ulcer in a hospital specialising in gastroenterology: Effects of therapy with H₂-antagonists. *Minerva Chir (Italy)*, 1997; **52**:1293-1297.
7. Jani, P.G. and Ojara, E.A. Perforated peptic ulcers as seen at Kenyatta National Hospital. *East Afr. Med. J.* 1987; **64**:317-321.
8. Ameh, E.A. and Nmadi, P.T. Pattern of peptic ulcer disease in Zaria, Nigeria. *East Afr. Med. J.* 1998; **75**:90-92.
9. Sabo, S.Y. and Ameh, E.A. Obstructing duodenal ulcers in a tropical population. *East Afr. Med. J.* 1999; **76**: 690-692.
10. Hill, A.G. Management of perforated duodenal ulcer in a resource poor environment. *East Afr. Med. J.* 2001; **78**:346-348.
11. Hermansson, M., Stael von Holstein, C. Zilling T. Surgical approach and prognostic factors after peptic ulcer perforation. *Europ. J. Surgery (Norway)*, 1999; **165**:566-572.
12. Coluccio, G., Fornero, G., Rosato, L. Our experience in the surgical treatment of perforated peptic ulcer. *Minerva Chir (Italy)*. 1996; **51**:1035-1038.