Perforated Duodenal Ulcer; Management in a Resource Poor, Semi-Urban Nigerian Hospital

Felix O Oribabor, Bamidele O Adebayo, Tunde Aladesanmi, David O Akinola

Department of Surgery, Federal Medical Centre, Ido-Ekiti, Ekiti State, Nigeria

ABSTRACT

Introduction: Perforated duodenal ulcer (PDU) is still seen frequently in the study center inspite of the free use of effective medical curative therapy. We then set out to ascertain the pattern of presentation, peculiar risk factors in the study environment, re-evaluate our method of management, and to see if it is adequate for patients in a developing country. **Materials and Methods:** This is a retrospective study of patients admitted and managed for PDUs, between January 2004 and December 2011 at the Federal Medical Centre, IdoEkiti, Southwest Nigeria. The records of patients were retrieved and demographic data relating to age, sex, symptoms, duration, diagnosis, intra-operative findings, and management outcome were extracted. The results were analyzed. **Results:** A total of 30 patients were admitted and operated during this period. Twenty-eight of them were males and two were females. The mean age was 47 years and the male: female ratio was 14:1. The duration of symptoms before presentation ranged from 2 to 7 days. None of the patients had a prior diagnosis of their ulcers, by an upper gastro intestinal endoscopy before presentation; although most had dyspeptic symptoms, with inadequate or no medical treatment. The notable peculiar risk factor was the abuse of local herbal concoction for body pains by all the patients. Seven patients smokes, 15 consumes alcohol, and only two take non-steroidal anti-inflammatory drugs for body pains. Most of the managed patients; 26 were satisfactorily discharged home and later followed-up at the surgical out-patient department. Four mortality was recorded during the period of study. **Conclusion:** PDU is still a major complication of chronic peptic ulcer disease. Simple omental patch and *H. pylori* eradication is no longer appropriate as a mode of treatment for the youths who are mostly affected in the center. We therefore, suggest a more wide spread use of definitive ulcer surgery for most of our patients with no pre-operative risk factors.

KEYWORDS: More wide spread use of definitive ulcer surgery, perforated duodenal ulcer, youths mostly affected

Address for correspondence:
Dr. Felix O Oribabor,
Department of Surgery, Federal Medical Centre, Ido-Ekiti,
Ekiti State, Nigeria.
E-mail: onosedebafelix@yahoo.com

Access this article online	
Quick Response Code:	Website: www.nigerianjsurg.com
	DOI: 10.4103/1117-6806.111499

INTRODUCTION

Duodenal ulcer perforation is still a common complication of chronic peptic ulcer disease. Despite the wide spread use of anti-secretory and *H. pylori* eradication therapy, the incidence of perforated duodenal ulcer (PDU) has changed little. Most of the literature pertaining to the situation in the developed world, showed that the disease is largely confined to the elderly patients taking ulcerogenic medications.[1-5] The situation in the developed nations is summed up by Johnson: "The surgeon's major role in the management of peptic ulcer disease will be the performance of life-saving emergency operations in the elderly unfit patient."[6] In contrast to the developing world, the patients are younger and have a long life-time of potentially useful activity ahead of them[1,5,7,8] as anti-secretory and anti-*H. pylori* eradication drugs are been freely used, we had expected an improvement in this disease condition. Hence, we set out in this review to look at the prevalence, pattern of presentation, risk factors and management outcome in the study environment and we also set out to look at the management pattern if sufficient for a semi-urban area in a developing world.

MATERIALS AND METHODS

This review was conducted at the Federal Medical Centre Ido–Ekiti, Southwest Nigeria. The case records of all patients with clinically established diagnosis of PDUs, managed in this center from January 2004 to December 2011 were reviewed. The diagnostic protocol for every patient at presentation included: The clinical findings, abdominal ultrasound, and chest X-rays which in some cases gave further credence to the diagnosis. Full blood count, urea and electrolytes, creatinine, and urinalysis results were documented. The patients were optimized for surgery with intravenous fluids, antibiotics, and urethral catheterization. Clinical and intra-operative findings, treatment

outcome and follow-ups were all evaluated. The results were analyzed using simple arithmetic means and group percentage.

Results

A total of 30 patients were admitted for PDU and operated during this period. Twenty-eight of the patients were males and two were females. The mean age was 47 years; range: 20-70 years. Male: Female ratio was 14:1. The duration of symptoms before presentation ranged from 2 to 7 days. None of the patients had a prior diagnosis of their ulcer by an upper gastro-intestinal endoscopy (UGIE) before presentation. Although, 20 (66.6%) of them had peptic ulcer symptoms with, inadequate or no medical treatment. The remainder, 10 (33.3%) presented for the first time with perforation, with no prior treatment for peptic ulcer disease.

The notable risk factor was the free abuse of herbal concoction (admixture of local gin, spices, roots and bitters) for body pains. All the patients took this mixture, at one time or the other. Some even took it following the sudden onset of abdominal pains. Fifteen patients took alcohol and only two took non-steroidal anti-inflammatory drugs [Table 1]. A good proportion of the patients 76.6% were referred to us from private health institutions, while the rest came to our center from their homes. After adequate resuscitation, all the 30 patients had emergency surgery of simple closure of their perforations, re-enforced with an omental patch and thorough peritoneal larvage. Triple regime for *H. pylori* eradication was instituted. Most of the 26 managed patients had a favorable outcome; were discharged home and followed-up at the clinic for 4-6 weeks but later lost to follow-up. Thirteen percent mortality was recorded during this period of study.

Table 1: Risk factors in perforation

NSAID	2
Alchohol	15
Cigarette smoking	7
Herbal concoction	30
H. pylori status	None

NSAID: Non-steroidal anti-inflammatory drugs

Table 2: Age distribution

Age-years	Number (%)
<10	0
10-20	2 (6.7)
21-30	6 (20)
31-40	3 (20)
41-50	8 (20)
51-60	7 (20)
61-70	3 (20)
>70	1 (3.3)

Discussion

PDU is still a major complication of chronic peptic ulcer disease seen quite often in the study center, as well as other centers of the world as a frequent cause of acute abdomen. Although experience from some parts of Nigeria showed that gastric outlet obstruction has overtaken PDU in incidence,[9,10] it is still frequently seen in many centers in Nigeria, as well as many centers in the developed world.[1,3-5,7] This study has also highlighted that the perforation affected mostly the younger age group (in their 3rd-6th decade) Table 2, which is in keeping with studies in many centers in the developing world.[1,4,7,11]

Much has been written about non-operative management of PDU in the Western world. Since the early works of Croft *et al.*,[12] there has been considerable interests in the non-operative management of PDUs. In a randomized trial comparing surgical and non-surgical therapy, for PDU, they showed a mortality rate of 5% in each group and no difference in morbidity. The hospital stay was, however, longer in the non-operated group. Keane, *et al.*,[13] have also shown that non-operative therapy could be effective in selected patients. They showed that as much as 81% of their patients were treated conservatively, but 43% later had surgery. Some writers have claimed that virtually all patients with PDU, could be managed conservatively.[14]

However, conservative management has not been accepted by many workers; whereas, most surgeons have difficulty in understanding how a patient who has wide spread peritonitis with food debris widely distributed throughout the abdominal cavity can improve without operation. Undoubtedly, there are patients with small leaks, from a perforation and with relatively mild peritoneal contamination who may be managed conservatively; these are in a minority.[14] We did not consider this treatment option because of the delay in presentation, 2-7 days as well as the socio-economic implications of long hospitalization. All patients were operated as soon as they were resuscitated and optimized for surgery.

In the pre *H. pylori* era, in the developed world, it has been shown that only 30% of patients with PDU treated with simple closure and thorough peritoneal larvage had good long-term result. In the present era, (*H. pylori* era), studies have shown, that operation may achieve long-term satisfactory results, only when *H. pylori* infections, present in 50-70% of patients with PDU is totally eliminated.[2] However, all have agreed that it is sometimes difficult to determine the *H. pylori* status of patients having emergent operation for perforated D.U.[2]

In this study, none of the patients had an UGIE done before presentation and surgery; and in all of them, their *H. pylori* status was not known: Although, 20 (66.6%) of them were erratically treated at one time or the other for peptic ulcer disease symptoms. All patients had simple closure of their perforation with omental patch reinforcement, thorough peritoneal larvage and *H. pylori* eradication therapy was instituted. This is only palliative and is sufficient for the elderly patients in the developed world.

Patients' who have suffered one perforation may suffer another one if anti-secretory drugs are not maintained; as

it were, for life.[2,14] This life-long treatment is obviously not within the reach of an average patient in the developing world.[7]

In this study, the mean age of patient is 47 years. Most workers, from the developing world have also shown that PDU, affects mostly the younger age group.[1,4,5,7,8] All have attested to the fact that this group are not likely to be anti eradication drug compliant for life. The costs of these drugs, re-infection by *H. pylori* organisms even after the eradication and dyspeptic symptoms after surgery,[1,7,8] shows that this palliative surgery (omental patch) is obviously not appropriate for a resource poor center, vis-a-vis for the developing world; that a shift towards the free use of definitive ulcer surgery should be the goal. Dempsey summed it all, "using the possible *H. pylori* infection eradication as an excuse not to do a definitive ulcer operation in any patient with perforated D-U is irrational."[2]

Therefore the various surgical options that have been proposed by workers in the field include:

1. Omental patch closure + highly selective vagotomy[2]
2. Omental patch closure + Bilateral truncal vagotomy (BTV)[2]
3. Resectional surgery + Truncal vagotomy[8]
4. Pyloroplasty + BTV.[3]

Dakubo *et al.*,[5] writing from a West African sub-region had shown statistically that age greater than 60 years, alcohol intake and resectional surgery are key factors in predicting post-operative morbidity and mortality. It stands therefore to reason that since the majority of the patients in the study center vis-a-vis developing world are below 60 years, they stand to benefit from a curative definitive ulcer surgery. Pyloroplasty (inco-operating the perforation) and BTV is quite safe and highly recommended because of its short operative time, simplicity and easily reproducible by all, even trainee surgeons.

Conclusion

PDU disease is still a frequent cause of acute abdomen in many centers of the developing world where it affects mostly the youths. The relative high costs of triple regime therapy for *H. pylori* eradication, fear of re-perforation and easy loss to follow-up, call for an urgent re-appraisal of the present method of surgical treatment. Therefore, a more liberal role for wide spread definitive ulcer surgery is suggested for most of our young patients.

References

1. Kuremu RT. Surgical management of peptic ulcer disease. East Afr Med J 2002;79:454-6.
2. Dempsey DT. Stomach. In: Brunicardi FC, Anderson DK, Billiar TR, Duncan DL, Hunter JG, Pollock RE, editors. Schwartz's principles of surgery. 8th ed. USA: The Mc Graw-Hill Companies, Inc; 2005. p. 968-9.
3. Lawal OO, Fadiran OA, Oluwole SF, Campbell B. Clinical pattern of perforated prepyloric and duodenal ulcer at Ile-Ife, Nigeria. Trop Doct 1998;28:152-5.
4. Nuhu A, Kassama Y. Experience with acute perforated duodenal ulcer in a West African population. Niger J Med 2008;17:403-6.
5. Dakubo JC, Naaeder SB, Clegg-Lamptey JN. Gastro-duodenal peptic ulcer perforation. East Afr Med J 2009;86:100-9.
6. Johnson AG. Management of peptic ulcer. Br J Surg 1994;81:161-3.
7. Hill AG. Management of perforated duodenal ulcer in a resource poor environment. East Afr Med J 2001;78:346-8.
8. Plummer JM, McFarlane ME, Newnham. Surgical management of perforated duodenal ulcer: The changing scene. West Indian Med J 2004;53:378-81.
9. Ameh EA, Nmadi PT. Pattern of peptic ulcer disease in Zaria, Nigeria. East Afr Med J 1998;75:90-2.
10. Sabo SY, Ameh EA. Obstructing duodenal ulcers in a tropical population. East Afr Med J 1999;76:690-2.
11. Bin-Taleb AK, Razzaq RA, Al-Kathiri ZO. Management of perforated peptic ulcer in patients at a teaching hospital. Saudi Med J 2008;29:245-50.
12. Crofts TJ, Park KG, Steele RJ, Chung SS, Li AK. A randomized trial of nonoperative treatment for perforated peptic ulcer. N Engl J Med 1989;320:970-3.
13. Keane TE, Dillon B, Afdhal NH, McCormack CJ. Conservative management of perforated duodenal ulcer. Br J Surg 1988;75:583-4.
14. Primrose JN. Stomach and duodenum. In: Williams NS, Christopher JK, Bulstrode CJ, O'Connell PR, editors. Bailey and Love's Short Practice of Surgery, 25th ed. London, United Kingdom: Edward Arnold Publishers Limited; 2008. p. 1062-3.

How to cite this article: Oribabor FO, Adebayo BO, Aladesanmi T, Akinola DO. Perforated duodenal ulcer; management in a resource poor, semi-urban Nigerian hospital. Niger J Surg 2013;19:13-5.

Source of Support: Nil. **Conflict of Interest:** None declared.