

**ORIGINAL ARTICLE**

**Surgical complications of peptic ulcer disease in Wad Madani teaching hospital June 2013 to June 2017**

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**Abstract**

**Background:** peptic ulcer disease is a common curable disease but still refractory and complicated disease frequently seen. This study was done to identify the surgical complications of peptic ulcer disease, their clinical presentation , management and outcome .

**Objective:** This study was carried out to identify types of surgical complications (bleeding, perforation and obstruction) , their clinical presentation ,site of the ulcer , intraoperative findings ,surgical procedure , postoperative complications and mortality .

**Patients and methods:** This was a cross-sectional ( prospective and retrospective) descriptive hospital based study of surgical complications of peptic ulcer disease carried out at the departments of surgery in Wad Medani Teaching Hospital , Wad Medni, Sudan, from June 2013 to June 2017. Data was collected from patients and hospital records using a designed questionnaire and analysed using SPSS version 21.

**Results:** Ninety eight patients had surgical complications of peptic ulcer disease were included in the study 71.4% (n=70) of them were males and 29.6% (n=28) were females with the male to female ratio 2.5 : 1 49%(n=48) were middle age group,73.5%(n=72) were from a rural areas the commonest clinical symptoms was epigastric pain 99% followed by vomiting 90.8% and heart burn 42.9% heamatemeisis was seen in 25.5% and the OGD showed that gastritis was the

most common finding 46.4% followed by multiple ulcers and single ulcer and most of them were gastric , 42.9% were using NSAID and 72.4% had used antiulcer treatment the most common surgical complication was perforation (84.7%) followed by gastric outlet obstruction 9.2% . and bleeding (6.1%) .

(68 patient ) were treated with omental patch ,15 with excision of the ulcer and repair, 9 with gastrojejunostomy and vagotomy, 4 with duodenotomy and over sewing of bleeding vessel and only two patients were treated with partial gastrectomy. 23% developed complications of which sepsis was the commonest 55% and the mortality was 5.1% .

**Conclusion:** Surgical complications of peptic ulcer predominantly occurs in middle age group and males of rural area residents who were mostly not diagnosed previously as peptic ulcer disease (PUD). The most common complication seen was perforation , GOO and bleeding. Outcome and mortality was greatly influenced by age , type of complication ,haematemesis,site of the ulcer , late presentation and the presence of sepsis .

**Key words:** PUD, perforation ,GOO, bleeding , haematemesis ,sepsis .

### ملخص البحث

أجريت هذه الدراسة لإيضاح المضاعفات الجراحية للقرحة الهضمية تناولت الأعراض السريرية نوع المضاعفات وطرق العلاج الجراحي التي اتبعت في مستشفى مدني التعليمي في الفترة من يونيو 2013 إلى يونيو 2017.

تم تضمين 98 مريض مضاعفات جراحية لمرض القرحة الهضمية في الدراسة (71.4% (ن = 70) منهم ذكور و 29.6% (ن = 28) كانوا من الإناث وكان معدل الذكور إلى الإناث 2.5:1  
49% (ن = 48) كانت من الفئة العمرية المتوسطة، 73.5% (ن = 72) كانت من المناطق الريفية كانت الأعراض السريرية الأكثر شيوعاً ألم البطن 99% تليها القيء 90.8% وحرق القلب كان في 42.9% وجد القي الدموي في 25.5% وأظهر منظار المعدة أن التهاب المعدة كان الأكثر شيوعاً (46.7%) تليها قرحة متعددة وقرحة واحدة، ومعظمهم في المعدة، و 42.9% كانوا يستخدمون مضادات الالتهاب غير الستيروئيدية، و 72.4% كانوا يستخدمون العلاج المضاد للقرحة المضاعفات الجراحية الأكثر شيوعاً هو ثقب القرحة (84.7%) يليه انسداد مخرج المعدة 9.2% . والنزيف (6.1%).

68 مريضاً تم علاجهم مع دفعة الأثينية، 15 مع استئصال القرحة والإصلاح، 9 مع توصيل المعدة مع الصائم وقطع العصب الحائر ، 4 مع فتح الأثيني عشر والإفراط في الشريان النازف وتم علاج اثنين فقط من المرضى مع استئصال المعدة الجزئي و 23% حدثت لهم مضاعفات ما بعد العملية التي كان الإنتان الأكثر شيوعاً 55% وكان معدل الوفيات 5.1%.

## **Introduction:**

Peptic ulcer disease is a problem of the gastrointestinal tract characterized by mucosal

damage secondary to pepsin and gastric acid secretion. It usually occurs in the stomach and proximal duodenum.<sup>1</sup> Worldwide, duodenal ulcers are more common than gastric ulcers and there is a significantly higher incidence of duodenal ulcers in males of all age groups. In the Western world, the incidence and prevalence of peptic ulcer disease and its complications increased from the beginning of the twentieth century to reach a peak and thereafter declined. Duodenal ulcers are two to four times as common as gastric ulcers but there are some regional variations; apart from genetic factors, dietary factors, drug ingestion (NSAIDs) and smoking. *H.pylori* infection remains the most causative organism to PUD<sup>(2)</sup>. Despite the introduction of effective medical treatment of peptic ulcer disease, bleeding is still a frequent complication and marked increase in incidence rates was observed with increasing age<sup>(3)</sup>. Although overall hospital admission rates for peptic ulcer declined, the complicated ulcers increased among elderly<sup>(4)</sup> and with the progress in diagnosis and treatment, peptic ulcer disease (PUD) remains a common reason for hospitalization and operation<sup>(5)</sup>. Regionally the surgical complications that are seen among peptic ulcer disease patients happened mainly in elderly and males with the gastric outlet obstruction being the commonest complication followed by perforation and bleeding<sup>(6)</sup>.

In Sudan no study was done including all the surgical complications of PUD although among perforated peptic ulcer patients in Khartoum males and young age group was the commonly affected<sup>(7)</sup>. Almost in PUD surgical complications the morbidity and mortality depend on late presentation, age, co-morbid disease and the presence of sepsis<sup>(7,8,9)</sup>.

This study aimed to study surgical complications of peptic ulcer disease the presenting age and sex variation, clinical presentation, type of surgical complications, surgical management and postoperative period.

## **Patients and Method :**

This is a cross-sectional retrospective and prospective descriptive hospital based study of surgical complications of peptic ulcer disease carried out at the department of surgery in Wad Medani Teaching Hospital, Wad Medani, Sudan,

from June 2013 to June 2017. Data were collected from patients and hospital records using a designed questionnaire and analysed using SPSS version 21.

**Inclusion criteria :** Peptic ulcer patients who were admitted to the surgical ward with a complication of peptic ulcer that necessitated surgical management in the study period.

**Exclusion criteria :** complicated peptic ulcer patients who were treated medically or endoscopically or refused the surgery .

Data collection tools : data collection started at August 2016 from the patients and hospital records using a pre formed questionnaire. Patients were followed for 1 month post surgery at the referred clinics .

## **Results :**

Ninety eight patients who had surgical complications of peptic ulcer disease were included in the study: 71.4% (n=70) of them were males and 29.6% (n=28) were females with the male to female ratio 2.5 : 1 49% (n=48) were middle age group, 73.5% (n=72) were from rural areas. The commonest clinical symptoms were epigastric pain 99% (n=97) followed by vomiting 90.8% (n=89) and heart burn 42.9% (n=42). Haematemesis was seen in 25.5% (n=25). The OGD which was done for 41.8% (n=41) showed that gastritis was the most common finding 46.4% (n=19) followed by multiple ulcers and single ulcer and most of them were gastric. 42.9% (n=42) were using NSAID and 72.4% (n=71) had used antiulcer treatment. The most common surgical complication was perforation 84.7% (n=83) followed by gastric outlet obstruction 9.2% (n=9) . and bleeding 6.1%(n=6). 68 patients were treated with omental patch ,15 with excision of the ulcer and repair, 9 with gastrojejunostomy and vagotomy , 4 with duodenotomy and oversewing of bleeding vessel and only two patient were treated with partial gastrectomy. 23%(n=22) developed complications of which sepsis was the commonest 55% and the mortality was 5.1% (n=5).

## **Discussion:**

Among the 98 patients who were studied seventy were males and twenty eight were females with the male to female ratio 2.5 : 1 .This agrees with international and regional literature <sup>(6,8,9)</sup> and less than the local data <sup>(7)</sup> .78.6 % of this study group were young and middle aged group, this agrees to some extent with local

studies<sup>(7)</sup> and it is contradicting with international studies that found PUD complications mainly happened in elderly<sup>(10)</sup>. The majority of the surgical complications that happened in 72 patients were living in rural areas and this may be due to ignorance of the residents in those areas with the symptoms of peptic ulcer disease and dietary factors. Their common clinical presentation was epigastric pain which occurred in 99% of patients, followed by vomiting and heartburn and this goes with local, regional and international data<sup>(6,7,9)</sup>. Haematemesis was observed in 25.5% and they underwent OGD and the OGD finding was found to be significant among peptic ulcer patients that eleven of the thirteen gastric ulcers had haematemesis and most of the duodenal ulcers had no haematemesis. That may be due to the fact that the duodenal ulcer is usually single and the gastric ulcer tend to be multiple and usually is associated with gastritis and erosion. OGD which was done among forty one patients of the study group showed that the most common finding related to this study was gastritis which happened in 46.4%, followed by multiple ulcers 24.4%, single ulcer 16.9% and 12.3% had normal OGD findings and this is comparable with local data of Soba study<sup>(11)</sup> which showed that 42% of the patients had no disorder visible on endoscopy, 9% had oesophageal varices, 0.7% gastric ulcer, 17% duodenal ulcer, and 2% pyloric obstruction. Duodenal ulcer was seen more commonly in men (male/female ratio 4.5/1) and in young people and that may be due to high usage of NSAID, dietary factor, smoking and other factors including H.pylori infection that is found associated with gastritis. Among the 17 patients with ulcers on OGD, 13 were gastric and 4 were duodenal. The sex was found to be associated with site of ulcer that all gastric ulcers were found in males and three (75%) of the duodenal ulcers were found in females and that is considered different from the international literature, duodenal ulcer is common in males more than the gastric ulcer, but this may be due to factors that are confined to males in the study group like smoking, diet factors and alcohol consumption. The most common surgical complication was perforation which occurred in eighty three patients (83.7%). Duodenal perforation occurred in sixty five patients and gastric perforation in eighteen patients followed by gastric outlet obstruction which occurred among nine patients (9.2%). The least one was bleeding in six patients (6.1%). This is in contradistinction with the international data and regional data that internationally the bleeding is the most common seen complication<sup>(12)</sup> and when compared to the regional data<sup>(6)</sup> showed that the most

common complications are Pyloric stenosis (GOO) followed by perforation, bleeding and gastric ulcer that was attributed to be due to high use of NSAID, young age among the study group that it was found to be associated with perforation and may be local diet and religious habit like Ramadan fasting which was found to be associated with perforation<sup>(7)</sup>. Regarding the use of NSAID and antiulcer treatment 42.9% were rationally using NSAID which was much more when compared with international and local studies. NSAID is recently used commonly and rationally either prescribed by the doctor or taken randomly. The users think that it is an analgesic and it may decrease the gastric pain. 72.4% (n=71) had a history of using antiulcer treatment. Sixty eight patients were using PPI. The duration of antiulcer treatment was more than 1 year in thirty six patients and less than 1 year in thirty four patients. Regarding the surgical management of patients with perforation of the duodenal ulcer were treated with omental patch and peritoneal toilet. Patients with perforated gastric ulcer were treated with excision of the ulcer and repair. Nine patients that presented with GOO were treated with gastrojejunostomy and truncal vagotomy. Four patients of the bleeding ulcers were treated with duodenotomy and oversewing of bleeding vessel and two patients were treated with partial gastrectomy and that was largely dependent upon the type of surgical complication which the most common seen in this study was perforation followed by GOO and bleeding. With regard to post operative period twenty three patients developed complications after surgery: 55% (n=12) of them were sepsis half of them were middle aged and half were elderly and it was largely dependent on late presentation, age and history of haematemesis with most of them occurred with patients with perforation. Eight patients developed wound infection and two of them developed wound dehiscence and that agrees with international, regional and local data that late presentation, perforation, age and concomitant disease were most common associations with post operative morbidity and mortality<sup>(9,16)</sup>. Five patients (5.1%) died, all of them had perforation of ulcer with sepsis, two were gastric and three were duodenal. 80% of them (n=4) were more than 60 years of age and this agrees with some national data<sup>(14)</sup> which found that the mortality was 4% and it is less when compared with other international and local data that mortality was found around 9%<sup>(13)</sup>, this is attributed to the fact that most of this study group were young and middle age group and earlier presentation and management.

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