ORIGINAL ARTICLE

Frequency of Common Early Complications Following Omentopexy as Primary Repair in Perforated Doudenal Ulcer

GUL SHARIF, GULAB NOOR, NOOR SARDAR, ZAFFAR IQBAL, SULTAN-E- ROOM, ABDUL WAHAB
For Correspondence: Dr Gulab Noor, CMO Accident and Emergency, Department LRH, Cell: 0333.9366552, Email: afridi404@yahoo.com

ABSTRACT
Objective: To determine the frequency of common early complications following Omentopexy as primary repair in perforated duodenal ulcer.
Materials and Methods: This was a descriptive study of 6 months duration, carried out from Jan 2014 to June 2014 in the department of general surgery, Lady reading hospital peshawar. A total of 144 patients were selected and admitted through emergency. Inclusion and exclusion criteria was set. After detail history and clinical examination ,all patients were investigated and were prepared for emergency laparotomy. A detail proforma has been made which contain all information about the patients. SPSS software (version 17.0) was used for the statistical analysis
Results: Our study shows that 9% patients were in age range < 25 years, 28% patients were in age range 26-50 years, 30% patients were in age range 51-75 years while 33% patients were >75 years. Mean age was 48 years with a standard deviation of ±5.71. Seventy three percent patients were male and 27% patients were female. Thirty two percent patients had wound infection and 11% patients had anastomotic leak.
Conclusion: Our study concludes that omentopexy with thorough peritoneal lavage is simple and safe procedure with low mortality and post-operative complications .

Key words: Complications, Omentopexy, perforated duodenal ulcer

INTRODUCTION

Annually, about four million people are affected with peptic ulcer disease (PUD) globally.[1]Even though the growing awareness about its etiology and the use of new effective drugs to treat it, the prevalence of PUD complications have still been reported as the same ranging between 10-20%.[2,3,4.] One of the serious complications of PUD is duodenal perforation which is reported to occur in ~2-14% of peptic ulcers[4,5,6.]. The mortality and morbidity rate of perforated duodenal ulcers is reported as high as 23-30%[6,7] and 30-50%[8,9,10] respectively. Perforated duodenal ulcers in children is found rare.[8,11] The incidence of perforated duodenal ulcer increases with increasing age which is attributed to the high frequency of risk factors for PUD among elderly patients.[12] Main etiologic factors for perforated duodenal ulcer include use of non-steroidal anti-inflammatory drugs (24%[8]) and *Helicobacter pylori* (48%[8] and 80%[13]). Other factors found are smoking, steroids and a diet high in salt[4].

Once the perforated duodenal ulcer has been diagnosed, it is generally agreed that emergency surgery should be performed as soon as possible to adequately resuscitate the patient.[14]The choice of surgical treatment depends on the site of perforation found at exploration. The most common technique for the management of a perforated duodenal ulcer is a patch repair with an omental pedicle commonly referred to as a Graham patch Omentopexy.In this technique the ulcer is not closed, but instead a pedicle of vascular zed omentum is sutured over the perforation site with multiple interrupted sutures. These repairs may be performed by a laparoscopic or open approach, but ulcers over 10 mm in size appear to increase the risk of conversion to open surgery.[14,15]

Perforated duodenal ulcer is a considerable medical problem causing high morbidity and mortality worldwide. Furthermore, the occurrence of different complications after operating perforated duodenal ulcer using Omentopexy procedure is another serious issue. The recovery of these post-operative complications requires more hospital stay and follow-up visits and it increases more financial and psychological stress on the patients. The current study is designed in this regard to determine the frequency of common complications after using omentopexy as the primary repair for the perforated duodenal ulcers in our local

population. One major reason behind the rationale of this study is that no study has been conducted in Khyber Pakhtunkhwa on this serious issue and only limited studies have been found in all Pakistan. The main advantage of this study will be that it will give us the statistics about the common early post-operative complications of Omentopexy at our locality because there is wide discrepancies among results of various studies found so far in literature and their prevalence as well. The results obtained from this study will be shared with various hospitals and health care institutions and guidelines will be suggested on the basis of results obtained in order to improve the current treatment to cure treatment of perforated duodenal ulcer in order to avoid and control all common complications after using Omentopexy. It will definitely help in decreasing the rate of morbidity and mortality.

METHODOLOGY

This was descriptive study of 6 months duration, carried out from Jan 2014 to June 2014 in the department of general surgery, PGMI Lady Reading Hospital, Peshawar.A total of 144 patients were selected and admitted through emergency department.This study included both genders havingage 15 years and above with perforated deudenal ulcer, diagnosed on the basis of history, clinical examination and investigation .Known diabetic patients or patients diagnosed on the basis of two fasting blood glucose level >126 ,Patients on long term steroids; based on history, were excluded from this study.Approval was taken from the hospital ethical committee. All patients meeting the inclusion and exclusion criteria who were undergoing emergency laparotomy were included in the study and were admitted through emergency. The purpose and benefits of study were explained to patients and patients were assured that his/her confidentiality was maintained and a written informed consent was obtained. Demographic characteristics like name, age, sex, address and phone numbers of all patients were recorded. Complete history was taken and complete general physical and systemic examination was done. All patients were pre operatively prepared by doing mandatory investigations FBC, serum urea, serum creatinine, x-ray chest, RBS and viral status.

Erect Abdominal X-ray films were also taken to get an aid in diagnosing the perforation. All the test and examinations were keenly observed and final decision was made under the supervision of a fellow surgeon. All the patients were resuscitated by passing intravenous cannula and were given intravenous antibiotics, fluid and electrolyte imbalances corrected. Nasogastric tube for stomach decompression and urinary catheter was passed. Oxygen inhalation given, all patients were operated under general anesthesia by a fellow surgeon and access to the abdominal cavity was via midline incision. The diagnosis was confirmed seeing perforation with naked eye and Graham Patch Omentopexy was done. The peritoneal cavity was washed with normal saline and abdomen was closed in layers. The drain was kept in Morrison pouch and other in pelvis.

All patients were kept nil by mouth up to 48 to 72 hours of the operation and nasogastric tube kept till return of bowel sounds with the daily record of intake and output on patient chart. All patients received intravenous fluids, Analgesic, Antibiotics, Blood transfusion when required. Daily post operative progresses of the patients were recorded. Drains were removed after 24 to 48 hours of the operation. After the return of bowel sounds, nasogastric tube was be reversed and oral sips allowed then semisolid diet and then gradual progress towards solid diet. Early mobilization of the patient was done and catheter was removed after mobilization. Post operative complication including surgical site infection, anastomotic leak (re-perforation) were recorded of all patients and recorded on proforma.

All the above mentioned information including name, age, gender and address was recorded in the study Proforma . Strict exclusion criteria was followed to control confounders and bias in study results.

SPSS software (version 17.0) was used for the statistical analysis. Mean ± SD was calculated for continuous variable like age, frequency and percentage was calculated for categorical variables like gender, wound infection and re-perforation. Post operative complications were stratified among age and gender to see the effect modification. Post stratification was done through chi-square test keep P-value ≤ 0.05 was significant. All the data was presented in the form of tables and graphs.

RESULTS

This study was conducted at Department of. of General Surgery, Lady Reading Hospital Peshawar in which a total of 144 patients were

observed to determine the frequency of common early complications following Omentopexy as primary repair in perforated duodenal ulcer and the results were analyzed as Age distribution among 144 patients was analyzed , 13(9%) patients were in age range < 25 years, 40(28%) patients were in age range 26-50 years, 43(30%) patients were in age range 51-75 years while 48(33%) patients were >75 years. Mean age was 48 years with a standard deviation of ±5.71. (as shown in Table No 1) and stratification of complication with age was analyzed (as shown in Table No 2).

Table 1: Age Distribution (n=144)

Age	Frequency	Percentage
< 25 years	13	9%
26-50 years	40	28%
51-75 years	43	30%
> 75 years	48	33%
Total	144	100%

Mean age was 48 years with a standard deviation of ±5.71.

Table 2: Stratification of Complications with Age (n=144)

Wound infection	<25 years	26-50 years	51-75 years	> 75 years	Total	P value
Yes	4	13	14	15	46	0.003
No	9	27	29	33	98	
Total	13	40	43	48	144	

Anastomotic leak	<25 years	26-50 years	51-75 years	> 75 years	Total	P value
Yes	1	4	5	6	16	0.003
No	12	36	38	42	128	
Total	13	40	43	48	144	

DISCUSSION

Acute upper gastrointestinal bleeding is one of the most common emergency dealt with by Gastroenterologist . It has an incidence ranging from approximately 50 to 150 per 100 000 of the population each year. Rates of morbidity and mortality are 10% to 12 % and 8% to 10%, respectively, and these have remained fairly constant during the past 40 years[16].

The epidemiology of various causes of upper GI bleeding has been changing in recent years. Variation in disease pattern from time to time requires the need for periodic studies to define the changing etiological distribution for continuous medical education and learning[17].

Our study shows that 9% patients were in age range < 25 years, 28% patients were in age range 26-50 years, 30% patients were in age range 51-75 years while 33% patients were >75 years. Mean age was 48 years with a standard deviation of ±5.71. Seventy three percent patients were male and 27% patients were female. Thirty two percent patients had wound infection and 11% patients had anastomotic leak.

Similar results were found in another study conducted in Military Hospital Rawalpindi, Pakistan involving 37 patients with upper gastrointestinal bleeding 21.6% had duodenal ulcer.[17] In another study conducted in Bangladesh involving 50 patients with upper gastrointestinal bleeding 34% had duodenal ulcer and it was the most common cause of upper gastrointestinal bleeding.[18] In another study conducted in Iran involving 572 patients with upper gastrointestinal bleeding 93 (16%) were found to have duodenal ulcer. [19]

The two most common causes of the bleeding are peptic ulcer and esophageal varices. Esophageal variceal bleeding was the most common cause of upper GI bleeding in this study, but it is seen that variceal bleeding is a quite uncommon cause of upper GI bleeding in the Western population. In the

United States, the percentage of variceal bleeding varies from 5% to 30%11 of the total cases of upper GI bleeding in different areas and bleeding peptic ulcers account for above 50%.[20]

Arfidi SP and fellows found 43.6% cases of perforated duodenal ulcer all managed by Omentopexy. The common postoperative complications recorded were wound infection (42%), wound dehiscence (26%), respiratory complications (20%) and septicemia (20%).[15]Chalya PL et al. performed omentopexy in 83.3% patients. The post-operative complications recorded in 29.8% patients were surgical site / wound infections (48%), Pulmonary Infections

(28%), Intra-abdominal abscess (20%), wound dehiscence/burst abdomen (20%) and re-perforation (16%).[16]

In another study conducted by Khan JS et al[21]the most common cause of perforation peritonitis noticed in our series was acid peptic disease 45%, perforated duodenal ulcer (43.6%) and gastric ulcer 1.3%. followed by small bowel tuberculosis (21%) and typhoid (17%). large bowel perforation due to tuberculosis 5%, malignancy 2.6% and volvulus 0.3%. Perforation due to acute appendicitis (5%). Highest number of perforations has seen in the duodenum 43.6%, ileum37.6%, and colon 8%, appendix 5%, jejunum 3.3%, and stomach 2.3%. Overall mortality was (10.6%).

Taj MH et al[22] had shown that perforation was present on the anterior surface of the first part of duodenum in all cases. Size of perforation varied from 0.6 cm to 1.5 cm. Median size was 0.8 cm. Wound infection was seen in 10 (33.3%) patients and pneumonia in 7 (23.3%) patients. Two (6.7%) patients developed burst abdomen and residual pelvic collection that required re-operation. Overall, 15 (50%) patients did not develop any complication. Mortality was 1 (3.3%). Median hospital stay was 9 days.

In another study conducted by Vyvahare SR et al[12] out of 186 patients, 98 (52.68%) had 108 complications. Among these, the commonest complication was wound infection in 53 patients (28.49%). 45 patients (24.19%) had lung Infection, 5 patients (2.68%) had re-perforation, 2 patients (1.07%) had burst abdomen, 2 patients (1.07%) had pelvic abscesses and 1 patient (0.53%) had DIC. Most of these complications occurred in patients with delayed presentation of greater than 24 hours and intraperitoneal purulent fluid of greater than 500 ml. None of our patients developed bleeding.

The delay before surgical treatment is a strong determinant for increased complication rates and hospital costs. In one study conducted by Testini M, et al[6] ,postoperative complications were recorded in 54 (38%) patients. The most common complications were: chest infection in 35 (24%) patients, followed by wound infection in 14 (9%) cases, burst abdomen in 3 (2%) cases and fistula in 2 (1.5%) patients. In another study conducted by Kocer B et al[2]postoperative complications were seen in 65 (24.2%) patients. Pneumonia and wound infection were the commonest complications seen in 40 (37.04%) and 20 (18.52%) cases respectively; followed by sepsis in 9 (8.34%) patients, leakage in 6 (5.55%) patients, intra-abdominal abscess in 2 (1.86%) cases and bleeding in 1 (0.92%) patient.

CONCLUSION

Our study concludes that omentopexy with thorough peritoneal lavage is simple and safe procedure with low mortality and post-operative complications like 32% wound infection and 11% patients had anastomotic leak. It does not require great expertise and can be performed in a very short time in seriously ill patient. It should be chosen instead of an acid reducing operation like vagotomies and pyloroplasty in an emergency setting. However, its immediate outcome is determined by more advanced age of patient, delay in admission, presence of associated diseases and shock on admission. Thus these factors need to be carefully taken into account in order to reduce morbidity and mortality

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