ORIGINAL ARTICLE

Outcome of Modified Grahm Patch Omentopexy in the Management of Perforated Duodenal Ulcer

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ABSTRACT

Aim: To evaluate outcome of modified Grahm Patch omentopexy in management of perforated DU.
Methods: This prospective descriptive study was conduct at Surgical B Unit, Lady Reading Hospital, Peshawar, from March 2015 to September 2015. Fifty consecutive patients, who were diagnosed as perforated duodenal ulcer were included in study, those with traumatic perforation were excluded. After adequate resuscitation, emergency laparotomy and modified Graham patch omentopexy procedure was performed in all patients. The demographic features of the patients, smoking and drug history, size of perforation, and post operative complications were recorded.
Results: The age range of 17-80 years with mean age was 43.44±1.54 years. Most of the patients that is 48(96%) were male and 2(4%) were female. In 16(32%) of patients chronic NSAID use was the underlying cause and 11(22%) were smoker, 9(18%) were using steroids, 7(14%) were having history of stress and another 7(14%) were having positive H pylori serology as underlying cause. In all these patients anterior wall of first part of duodenum was perforated. Mean operative time was 47.20±8.81 minutes. Twenty nine (58%) patients showed uneventful recovery. In post operative time 21(42%) patients developed complications, 4(8%) patients expired. Mean hospital stay was 6.72±1.49 days.
Conclusion: Perforation of duodenal ulcer and its associated peritonitis is a fatal condition. Modified Grahm patch omentopexy is optimum management for such patients. Major determinants of worst outcome are delay in presentation and pre existing co morbid conditions.
Keywords: Perforated duodenal ulcer, Modified Graham patch omentopexy, Outcome

INTRODUCTION

Peptic ulcer disease is a common health problem worldwide. The incidence of the disease varies geographically as well as with time[1,2]. It affects 3.7 to 7.5 million people in United States and half a million new cases are diagnosed annually[3]. The pattern of duodenal ulcer in our country is similar to that of western world except for minor differences[4].

Ulcer is defined as any crack or breach in the continuity of an epithelial surface thus as the name indicate in the peptic ulcer disease there is breach in gut mucosa resulting from imbalance between mucosal protective mechanisms and adverse factors is a local manifestation of the ulcer disease. It can affect any part of the digestive tract as well as the sites of ectopic gastric mucosal tissue and gastro enteric anastomosis sites[5]. Without prompt management peptic ulcer disease patients may develop complications which include stricture, bleeding and perforation. [6] Despite improvement in the medical management of peptic ulcer disease, duodenal ulcer perforation still remains one of the most dreadful complication leading to peritonitis[7,8].

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The anterior wall of first part of duodenum is notorious for spontaneous perforation when it is affected by peptic ulcer disease anteriorly[9,10,11]. The frequency perforated duodenal ulcer is around 4.6% in cases of acute abdomen and overall incidence mentioned in literature is around 5%[9]. Typical history and cardinal sign of free gas under diaphragm on erect x ray abdomen film is usually diagnostic.

Perforated duodenal ulcer is usually treated with modified Graham patch omentopexy, peritoneal toilet, antisecretory medications and antibiotics for superadded infection and H. pylori eradication. Graham patch technique involves primary closure of hole followed by placing and anchoring the omentum over repair.[12] Laparoscopic surgery for perforated duodenal ulcer is now being done because it is associated with less access related complications and hence will improve outcome.

The rationale of this study was to evaluate the outcome of modified Grahm patch omentopexy in terms of operative time, duration of hospital stay and post operative complications in our set up because our hospital is receiving major bulk of such cases from periphery hospitals of almost whole province.

MATERIALS AND METHODS

This prospective descriptive study was conducted in Surgical B Unit, Lady Reading Hospital, Peshawar,

from March 2015 to September 2015. All the patients in whom laparotomy and modified Grahm patch omentopexy performed for perforated duodenal ulcer were included in the study while the cases of gastric perforations, traumatic duodenal perforation, patients aged below 14years and those patients in which other type of surgeries performed for perforated duodenal ulcer were excluded from study. All the patients admitted through casualty were first resuscitated by intravenous fluids then nasogastric intubation and uretheral catheterization performed in all these patients, narcotic analgesics, intravenous proton pump inhibitors and broad spectrum third generation cephalosporin antibiotics were given. All base line investigations were sent including FBC, blood sugar, renal profile, Serum electrolytes and H. pylori antibodies. X-ray chest and abdomen were carried out. After resuscitation laparotomy was performed by midline incision, in all patients. Peritoneal toilet done with normal saline & perforation closed with silk 2/0 using modified Grahm patch technique. Drains kept & abdomen was closed with prolene 1. NG tube was removed on 5th POD & patients were orally allowed gradually from plain water, soft diet to normal diet. H. Pylori eradication treatment was advised to positive patients for 14 days. Patients usually discharged on 6th to 8th POD unless there were complications. All peri-operative parameters including H/O smoking, NSAIDS and PPI, size of perforation, post operative complications i.e., wound infection, pneumonia, leakage, wound dehiscence and incisional hernia. Follow up of the patients done for 3 months. Data were recorded on predesigned proforma and analysis was done through SPSS version 16.

RESULTS

The age range of 17-80 years with mean age was 43.44±1.54 years. Most of the patients that is 48(96%) were male and 2(4%) were female. Duodenal ulcer perforation was most common in the age range of 41-50 years (Tables 1-2). In 16(32%) of patients chronic NSAID use was the underlying cause and 11(22%) were smoker, 9(18%) were using steroids, 7(14%) were having history of stress and another 7(14%) were having positive H. pylori serology as underlying cause (Table 3). In all these patients anterior wall of first part of duodenum was perforated (Table 4). Mean operative time was 47.20±8.81 minutes. Twenty nine (58%) patients showed uneventful recovery. In post-operative period, 21(42%) patients developed complications. Four (8%) patients got expired. Mean hospital stay was 6.72±1.49 days (Table 5).

Table 1: Age grouping of patients

Age (years)	n	%age
10-30	13	26
31 – 50	24	40
51 – 70	11	22

Table 2: Gender-wise distribution of patients

Gender	n	%age
Male	48	96
Female	2	4

Table 3: Causes of perforated duodenal ulcer

Cause	n	%age
NSAIDS	16	32
Steroids	9	18
Stress	7	14
Smoking	11	22
H. Pylori +ve serology	7	14

Table 4: Approximate size of perforation

Size	n	%age
Tiny or sealed perforation	6	12
Upto 1 cm	29	58
1-2 cm	12	24
>2 cm	3	6

Table 5: Outcome in terms of post operative complications

Complication	n	%age
Uneventful recovery	29	58
Leak	3	6
Minor-wound infection	8	16
Wound dehiscence	4	8
Incisional hernia	2	4
Expired	4	8

DISCUSSION

Perforation of duodenal ulcer is a fatal complication which needs prompt surgical intervention. There is controversy regarding the surgical management of this problem[13,14]. Initially Graham performed his classical omentopexy in a series of 51 cases where he used omental patch without initial direct closure of the perforation[15]. The age range was 17-80 years with mean age was 43.44±1.54 years. Most of the patients that is 48(96%) were male and 2(4%) were female. Duodenal ulcer perforation was most common in the age range of 41-50 years. So it is evident that this disease is common in males in their 4th or 5th decade of life other studies in literature also show similar results[3,9,10,16].

In our study the commonest underlying cause for perforated duodenal ulcer was chronic NSAID use that accounted for upto 32% followed by smoking that is in 22% of cases ,other relatively less common causes were, 9(18%) were using steroids, 7(14%) were having history of stress and another 7(14%) were having positive H. pylori serology. Other

studies[17,18] have also shown that chronic NSAIDS use and smoking were the commonest causes of duodenal ulcer perforation. The size of perforation varied from very tiny sealed perforation to 2cm or slightly more in size. In most of the patients 41(82%) perforation size was in range from 1–2cm which corresponds to that mentioned in literature[11,19].

The operative time ranged from 35- 75 minutes with the mean of 47.20 minutes which is slightly shorter then that mentioned in other studies[20,21]. In our study, 29(58%) patients showed uneventful recovery while 21(42%) patients developed some sorts of post operative complications . Four (8%) patients got expired. The rate of post operative complications mentioned in literature ranges from 8.6% to 41%[20,22,23]. While mortality rate range is from 3.9% to 27% according to some studies[8,10,11,19].

Most of the complications were minor wound infections that settled with antibiotics therapy based on culture sensitivity reports. So our results are quite comparable to other studies as for as mortality and complications rates are concerned. Mean hospital stay in our study was 6.72 days which falls within the range mentioned in other studies[9,11,24].

CONCLUSION

Perforation of duodenal ulcer and its associated peritonitis is a fatal condition. Modified Grahm patch omentopexy is optimum management for such patients. Major determinants of worst outcome are delay in presentation and pre existing co morbid conditions.

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