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PERFORATED DUODENAL ULCER. AN AUDIT

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ABSTRACT

OBJECTIVE: *To determine the outcome of patients operated for perforated dudodenal ulcer.*
STUDY DESIGN: *Case Series.*
PLACE & DURATION: *Department of surgery, Chandka Medical College, Hospital Larkana, from April 2008 to Nov 2009.*
PATIENTS AND METHODS**:** *76 consecutive patients, diagnosed as perforated duodenal ulcer were included in study, while patients of traumatic perforation were excluded. After adequate resuscitation, emergency laparotomy and modified Graham Patch procedure was performed in every patient. All pre-operative parameters including biodata, duration of symptoms, smoking and drug history, size of perforation, and post operative complications were entered in designed proforma.*
RESULT: *In this study all the patients were male with median age of 48.42 years and standard deviation was 10.37. Duration of symptoms was < 24 hours in 52(68%) patients while more than 24 hours in 24(31%) patients. 42 (55%)patients gave the history of NSAID and PPI. 36(47%) were smoker, 17 (22%) diabetic and 8(10%) were uremic. Perforation was present in first part of duodenum in all cases. Mean size of perforation and standard deviation was 0.939 cm +/- 0.357 .*
Mean operative time and standard deviation was 66.97 min +/- 10.75. Post operative complicatons were observed in 22(28.94%). Mean hospital stay was 7.89 days with standard deviation of 2.523, while 3(4%) patients expired.
CONCLUSION**:***Duodenal perforation is life threatening condition most common in middle aged peoples.Smoking, Stress, Steroids and NSAIDS are common risk factors. Delayed arrival and comorbid conditions increase the morbidity but has less effect on mortality in post operative patients. Simple repair and omentopexy & use of PPI along with H.pylori eradication therapy in +ve patients is sufficient treatment.*

KEY WORDS: Duodenal perforation, male dominant, modified Graham patch technique,

INTRODUCTION

Peptic ulcer is the most common medical problem, affect the 3.7 to 7.5 million people in united states. There are approximately half a million new cases of duodenal ulcer diagnosd each year.[1]

Apart from other complications of peptic ulcer like stricture, bleeding and carcinoma, perforation is the commonest and potential fatal complication.[2]

The incidence of peptic ulcer perforation rose from 1.6% in1998 to 5.3% in 2002 and established at 5% and overall accounted for 4.6% of acute abdomen.[3]

Despite the introduction of proton pump inhibitors (PPI), H2 receptor antagonists and discovery of H.pylori, both the incidence of emergency surgery for perforated peptic ulcer and mortality rate has been increased.[4,5]

Common site of perforation is first part of duodenum anteriorly.[3,6,7] Anterior wall perforation leads to peritonitis, signs and symptoms of which usually does not cause diagnostic problem. Perforated duodenal ulcer can be treated with modified Graham patch technique, antisecretory medications and antibiotics for superadded infection and H.pylori eradication. Graham patch technique involves the closure of gap with vicryl 2/0 followed by placing the omentum over repair.[8]

Laparoscopic surgery has been popular during last decade mainly because it is associated with fewer post operative complications then conventional open approach, and affording

all the advantages of minimal invasive surgery.[9,10] Anastomotic device U-clips simplifies laparoscopic repair of perforated peptic ulcer avoiding the need to perform knots and making the procedure safe and easier.[11]

Improving the surgical skill, wound care, administrative regulation, hospital environment and equipment are needed to reduce the high rate of complications.[12] Additional stress therapy promote healing and may reduce postoperative morbidity in certain cases with involvement of psychic trauma.[13]

Risk factors for morbidity after peptic ulcer perforation are age, severe concomitant diseases and post-operative complications.[14] shock at the time of presentation, presence of co-morbid illness (ASAIII or more)and renal failure were identified as independent predictor of morbidity.[15]

Peptic perforation is common surgical emergency presented to our department. Patients presented from peripheral rural areas are usually late. Surgical toilet, repair of perforation with omentopexy was performed, then patients were kept on anti secretory agents and antibiotics. This study was conducted to assess the outcome of duodenal perforaton surgery,

FIGURE 1 :
AGE DISTRIBUTION

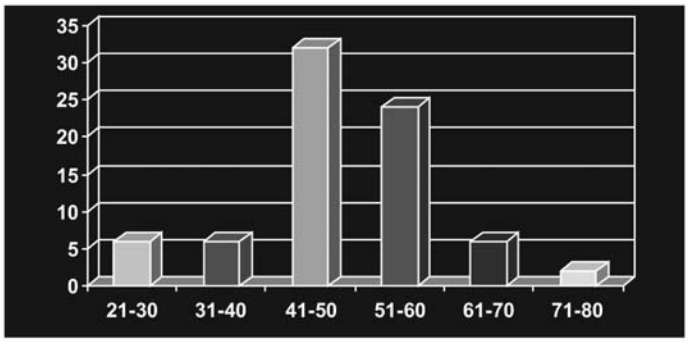


FIGURE 2:
CO-MORBID FACTORS

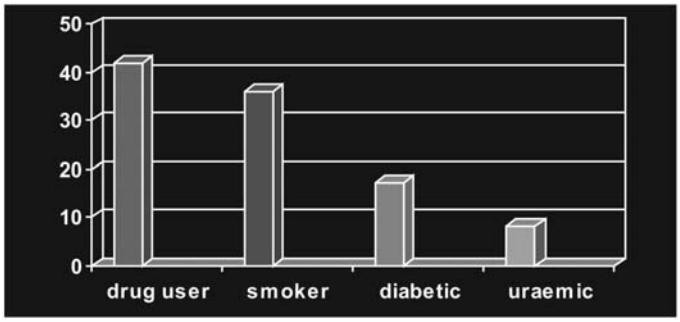
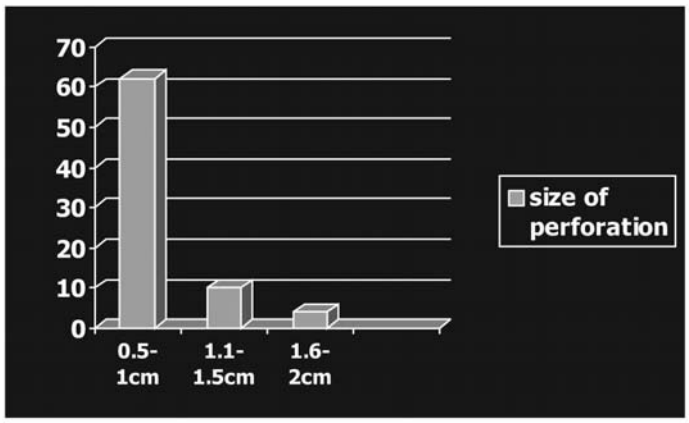


FIGURE 3:
SIZE OF PERFORATION



PATIENTS AND METHODS

STUDY DESIGN: Case series study

STUDY SETTING: Department of surgery, Chandka Medical college Hospital, Larkana, from April 2008 to Nov 2009.

INCLUSION CRITERIA:
Patients who were diagnosed as perforated duodenal ulcer were included in this study.

EXCLUSION CRITERIA:
Patients with tramatic perforation were excluded.

DATA COLLECTION:
All the patients admitted through casualty were resuscitated by intravenous fluids, passing NG tube and foley's catheter, analgesics, parenteral PPI and antibiotics were given. All base line investigations were sent including CBC ,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. Surgical toilet done with normal saline & perforation closed with vicyl 2/0 using modified grahm patch technique. Drains kept & abdomen was closed with prolene No: 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 +ve patients for 14 days.

Patients usually discharged on 6th t0 8th POD unless there were complications. All peri operative paramaters including duration of symptoms, H/O smoking, NSAIDS and PPI, size of perforation, post operative complications i.e wound infection, pneumonia, leakage, and residual abscess, were recorded on designed proforma.

DATA ANALYSIS:
Data was analysed by using SPSS version 15. Mean & standard deviation was calculated for age, size of perforation, complications and hospital stay.
Frequency and percentage were calculated for clinical features, co-morbid factors and complications.

RESULT

Total number of patients were 76 and all were male in our study. Age ranged from 25 to 72 years and mean was 48.42 years with Standard deviation of 10.37. Highest incidence in 4th & 5th decade, 56(73.68%)

patients. (Figure 1)Majority of patients 52 (68.42%) were admitted within 48 hours of onset of symptoms while 24 patients (31.57%) were admitted after 48 hours.

All patients were presented with pain abdomen. Other features were distention in 58(76.31%) patients, vomiting in 20 (26.31%), dehydration in 48(63.15%), constipation in 68(89.4%) and 15 (19.73%) patients were found in the shock at the time of admission.

History of NSAID & PPI was present in 42 (55.26%) patients. 36(47.36%) patients were smokers, 17(22.36%) were diabetic while 8(10.52%) patients were uraemic. (Figure 2)

Perforation was present in 1st part of duodenum in all cases. It varies from 0.5 to 2cm in size. In majority of patients 62(81.5%), it was ranged from 0.5 to 1 cm. In 4(5.2%)patients it was about 2 cm. Mean and standard deviation for perforation size was 0.939cm +/- 0.357. (Figure 3)

All the patients under went simple closure with vicryl 2/0 & omentopexy. Operative time was ranged from 50 to 90 minutes. Mean and standard deviation was 66.97min +/- 10.75. (Figure 4)

Over all 32 (28.98%) patients developed postoperative complications. Wound infection was observed in 12(15.78%) patients and pneumonia in 9(11.84%). No leakage was observed in this study. Residual abscess was present in 5(6.57%) patients . Ultrasound guided aspiration was done in these cases.

Hospiatl stay ranged from 6 to 15 days. In 66 (86.84%)patients hospital stay was 9 days or less. 3(3.94%) patients with wound infection stay for 11 days while 5(6.57%) patients with residual abscess stay for 15 days.

Mean hospital stay was 7.89 days with standard deviation of 2.523 (Figure 5)

3(4%) patients expired during postoperative stay.

FIGURE 4:
OPERATIVE TIME

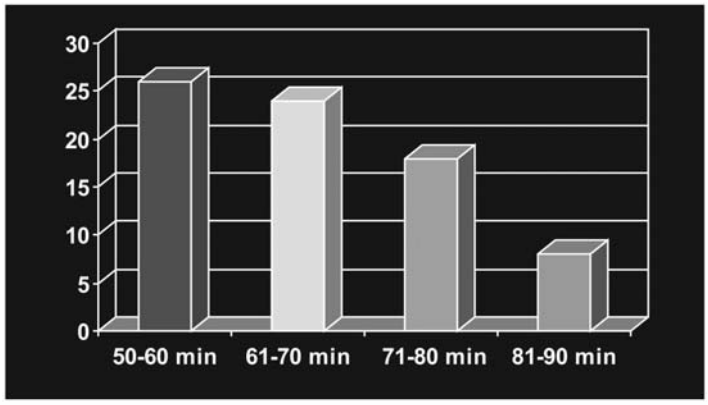
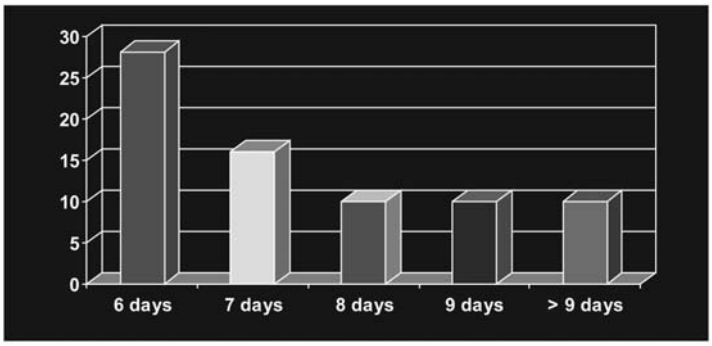


FIGURE 5:
HOSPITAL STAY



DISCUSSION

Peptic duodenal perforation is most serious, life threatening complication of peptic ulcer and early consultation with aggressive management can reduce the morbidity & mortality.

In this study of 76 patients, all were male. Incidence among males is 9/1000 patients and in females 1/1000 patients [7]. Other studies show M:F ratio was 12.3:1[7], 4.25:1[6], 4.38:11[2], 8:1[3] respectively.

Age ranged from 25 to 72 years, mean age was 48.42 years (highest were in 4th to 5th decade, 56(73.68 %) patients)

Study conducted by Dakubo C shows age ranged from 4-87 years with mean of 40.9.[2] Guglielminotti P [11]described age varied from 20-65 years. In other studies mean age was 43.4[15], 35.3 [16], 39.08 (ranged 14-75)[12], , 37.53[6] and 45.49[3] , while Mehboob M[7] described mean age 31.4 years with peak incidence in 3rd decade.

Majority of patients 52 (68.42%) admitted within 48 hours, while 24 (31.58) were reported after 48 hours. In Mehboob M[7] study 82.5 % had come within 48 hours while in Qamaruddin's[6] study 71.48 % patients came within 48hours. Bin Takeb AK[12] shows mean time of presentation was 16.5 hours. In Arven S[15] & Dakubo C2 studies 52.6 % & 46.2 % reached within 24 hours respectively.

History of NSAIDS and PPI was present in 42 (55.26 %) and 36 patients (47.36%) were smokers. Torab FC[16] has described smoking, history of peptic ulcer and use of NSAIDs as common risk factors for perforation. In other studies NSAIDS, steroids and smoking were described as most common risk factors. [3.17,18]

Condition of patients at time of arrival plays major role in outcome of patients. 15 patients 19.73% were in state of shock. Septic shock at the time of admission has been described as an important factor in the prognosis of patient. [4,15,19,20]

Co-morbid conditions (DM, Uraemia & COPD) were present in 31 (40.78 %)patients in this study. In other studies comorbid conditons were in 18.2 %3 and 7.31%[15] patients.

Size of perforation varies from 0.5 to 2 cm in size. In majorty of patients 62 (81.57 %) it was ranged from 0.5 – 1cm.

In other studies mean size of perforation was 0.45cm[7] and 0.5cm[19]..

All the patients underwent simple closure with vicyl 2/0 and omentopexy. Operative time ranged from 50-90 minutes with mean of 60 minutes.

Mean operative time in other studies was 63.57 min[10] and 55 min[21] respectively.

Post operative complications were observed in 22 patients (28.94 %)

Post operative complication rate in other studies is 19%[3] , 41%[12], 25.91 %[15] 17.2 %[16] , 8.6 %[21] and 30%[22].

Mean hospital stay was 7.89 days while mortality rate was 3.9%.

In other studies mean hospital stay was 10[3], 14.5[7], 8[9], 10.9[15] and 7.8 [21]days while mortality rate was 4.76%[6] , 7.5%[7] 3.9%[12],

8.5%[15],17.11%[19], 27%[20] and 9%[22] respectively.

CONCLUSION

Duodenal perforation is life threatening condition most common in middle aged peoples.

Smoking, Stress, Steroids and NSAIDS are common risk factors.

Delayed arrival and comorbid conditions increase the morbidity but has less effect on mortality in post operative patients. Simple repair and omentopexy & use of PPI along with H.pylori eradication therapy in +ve patients is sufficient treatment.

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