



CLINICAL STUDY OF PEPTIC ULCER PERFORATION PATIENTS

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ABSTRACT

AIMS AND OBJECTIVES : To determine the age & sex incidence in peptic ulcer perforation patients. To determine the incidence of perioperative complications. To analyse the effect of time of presentation on morbidity and mortality in patients with peptic ulcer perforation. To analyse various factors effecting the morbidity and mortality in patients with peptic ulcer perforation

MATERIAL AND METHODS : This is a 1 year prospective study which includes 50 cases, i.e., from august 2016 to November 2017 at Osmania General Hospital, Osmania Medical College, Hyderabad. All the 50 cases were admitted in Osmania General Hospital diagnosed with gastric & duodenal ulcer perforation were included in the study. All the cases admitted in Osmania General Hospital diagnosed with gastric ulcer perforation

RESULTS : Peptic ulcer perforation was common in males than females in ratio of 15.6:1. Morbidity rate in our study is 70% and mortality rate 16%. Peptic ulcer perforation was common in the age group of 30-50 years with mean age 44.2 years. Elderly patients (≥ 65 years) had increased mortality. Smoking had less significant effect in postoperative morbidity and mortality whereas alcohol consumption slightly increased morbidity as well as mortality. Previous history of peptic ulcer disease was not an important risk factor in causation peptic ulcer perforation, as sizeable number of patients did not give positive history of dyspepsia or peptic ulcer symptoms. It was also not a significant risk factor in postoperative mortality and morbidity. Associated co- morbid conditions increased postoperative mortality and morbidity. Shock on admission was a determinant of morbidity and mortality in peptic ulcer perforation. In this study shock on admission was a risk factor for morbidity in peptic ulcer perforation. 5 of 7 patients with pre-operative shock died. Among 17 patients who underwent surgery ,24 hours after the onset of symptoms, 15 (30%) developed morbidity and 5 (10%) suffered morbidity. So delayed surgery (> 24 hours) is associated with increased morbidity and mortality in postoperative period. There were 5 patients with Hb<11. Out of them 3(6%) developed morbidity and 1(2%) died. Duodenal perforation was associated with increased mortality (30%) as compared to gastric perforation (20%).

CONCLUSION : Among 50 patients, most common postoperative complication was death in about 8(16%) patients followed by pulmonary complications, renal failure and sepsis. Risk factors for morbidity and mortality in perforated peptic ulcer were age 65 years, associated medical illness, alcohol consumption, duration of perforation more than 24 hours before surgery and presence of shock on admission.

KEYWORDS : Gastric Ulcer, Duodenal Ulcer, Peptic Ulcer Perforation, Shock, Morbidity, Mortality.

INTRODUCTION

Intestinal perforations are encountered by surgeons as a very frequent cause of acute abdomen for which operative intervention will be required in most of the cases and is still a dreaded condition having high mortality and morbidity. Of all the intestinal perforations gastric and duodenal perforations are very common. Perforation was the cause of death in 70% of the patients with peptic ulcer and rate of mortality due to perforated peptic ulcer is 10-fold higher than other acute abdominal factors such as acute appendicitis and acute cholecystitis. The outcome of surgical management of gastric and duodenal perforations is dependent on many factors like the age of the patient, size of the perforation, delay in presentation, shock at the time of presentation, malnutrition, presence of coexisting illnesses an attempt to analyse the various pre-operative factors, which affect the morbidity/ mortality of patients with peptic ulcer perforations is made.

METHODOLOGY

Sample size – 50, period of Study – August 2016 to November 2017, place of study Osmania General Hospital, Hyderabad.

Inclusion criteria: Cases admitted in Osmania General Hospital emergency department diagnosed with gastric & duodenal ulcer perforation during the study period. Exclusion criteria: Iatrogenic gastro duodenal perforation, Traumatic perforations of stomach and duodenum, Malignant perforations of stomach and duodenum.

A detailed history of suspected patients of peptic ulcer perforation regarding age, sex, previous use of NSAIDs, smoking and other associated illnesses was taken. The diagnosis was made on clinical findings of peritonitis supported by investigations like plain x-ray chest and erect abdomen. Immediate resuscitation was done with nasogastric suction, intravenous fluids, antibiotics, and urine output monitoring. . Relevant investigations were performed on the patient. Diagnosed patients of peptic ulcer perforation were operated by emergency exploratory laparotomy and simple closure with Graham's omental patch. Ulcer biopsy was done to rule out perforations due to malignancy. Total and thorough peritoneal lavage is given in all the

patients. Two abdominal drains are placed in all the cases. Wound is thoroughly washed with normal saline before skin closure.

Patients were followed up every day with continuous bedside monitoring of vital data in the immediate post-operative period. Due attention was paid to note the development of any complication. Suitable and appropriate treatment was instituted from time to time according to the needs of the patients. Postoperative complications were assessed. After satisfactory improvement, patients were discharged from the hospital with advice. All the patients were instructed to come for regular follow-up at 1 month, 3 months. And during follow-up were assessed for wound infection, scar related complications or evidence of hernia. A detailed structured pro-forma was used to collect this information. The results were discussed and compared with available published literature in the form of tables and charts

OBSERVATIONS AND RESULTS

The highest incidence was observed in Third decade of life. The youngest patient was 18 years old and oldest was 70 years old. Perforation was more common in males compared to females, the ratio being 15.6 : 1. Out of 50 cases 47 were males and 3 patients were females. Highest percentage of cases are observed in the age group 31-40 years of age that is 17 cases with a percentage of 34% of all the cases in the study followed by age group of 51-60 years. The mean ages (SD) were, for males 45.27 years and for females 45.75 years. Age related morbidity is increased in age group of 51-70 , 3 patients expired in the age group of 61-70 years and 2 in 51-60 years. Whereas morbidity is seen in 10 cases of age group 51-60 years & 6 cases of 61-70 years.

In this study 9 (18%) patients had history of regular ingestion of NSAIDs and 1(2%) patient had history of ingestion of corticosteroid. History of regular smoking was present in 11 (22%) patients. Among these, 3(6%) patients developed morbidity and 2 (4%) patients expired in postoperative period. History of regular alcohol consumption was present in 19(38%) patients, 3 (6%) patients developed morbidity and 5 (10%) patients expired in postoperative period. Combined alcoholism and smoking are seen in 9 (18%) of patients. A previous

history of dyspepsia or peptic ulcer symptoms was present in 9 (18%) out of 50 patients. 2 (4%) developed morbidity and 1(2%) patient expired. 16 (32%) patients had associated co-morbid conditions. Hypertension was present in 8(16%) patients, COPD was present in 1(2%), 2(4%) were diabetic, 2(4%) patients had pulmonary tuberculosis, 5(10%) patients had anaemia with haemoglobin <11g/dl.

17 (34%) patients underwent surgery after 24 hours of onset of symptoms, 34 cases were seen before 24 hours of onset of symptoms. 20 (40%) patients who underwent surgery after 24 hours developed morbidity and 5 (10%) patients expired. 15(30%) of the patients presented early have suffered with morbidity and 3 (6%) of the patients expired. Hb<11 was present in 5(10%) patients, 3(6%) patient developed morbidity and 1 (2%) patients expired in postoperative period. Hb>11 was present in 45(90%) patients, 33(66%) patients developed morbidity and 7 (14%) patients expired in postoperative period. Among the 50 cases taken under study 27 (54%) of cases presented with duodenal ulcer perforations. 23(46%) of the cases presented with gastric ulcer perforations. Of the 27(54%) cases of duodenal ulcer perforation 17(34%) patients suffered with post-operative morbidity and 4(8%) patients expired postoperatively. of the 23(46%) cases presented with gastric ulcer perforations 18(36%) patients developed postoperative morbidity and 4(8%) patients expired postoperatively.

43(86%) patients had postoperative complications. Among 50 patients, most common postoperative complication was death in about 8(16%) patients followed by renal failure in 7 (14%) patients, pulmonary complications in 7 (14%) patients ,sepsis in 7 (14%) patients. 5(10%) patients had prolonged paralytic ileus, 3 (6%) patients had septicaemia, 2 (4%) patients had wound dehiscence, wound infection is seen in 6(12%) of the patients, post-operative leak is seen in 1(2%) of the cases.

Fig 1: Various factors predicting the morbidity in patients with peptic perforation

Parameter		NO.	Morbidity	%
Age	<60	43	29	58
	>60	7	6	12
Sex	Male	47	32	64
	Females	3	3	6
NSAID use	Present	9	1	2
	Absent	41	34	68
Corticosteroid use	Present	1	0	0
	Absent	49	35	70
Smoking	Present	11	3	6
	Absent	39	32	64
Alcohol	Present	19	3	6
	Absent	31	32	64
PUD	Present	9	2	4
	Absent	41	33	66
Hb	<11	5	3	6
	>11	45	18	36
Time of surgery	<24hours	33	15	30
	>24 hours	17	20	40

Fig 2: Various factors predicting the mortality in patients with peptic perforation

Parameter		NO.	Mortality	%
Age	<60	43	5	10
	>60	7	3	6
Sex	Male	47	7	14
	Females	3	1	2
NSAID use	Present	9	2	4
	Absent	41	6	12
Corticosteroid use	Present	1	0	0
	Absent	49	8	16
Smoking	Present	11	2	4
	Absent	39	6	12
Alcohol	Present	19	5	10
	Absent	31	3	6
PUD	Present	9	1	2
	Absent	41	7	14
Hb	<11	5	1	2
	>11	45	7	14
Time of surgery	<24hours	33	3	6
	>24 hours	17	5	10

DISCUSSION

Bowel perforations secondary to various causes is a very frequently encountered surgical emergency in the practice of any general surgeon. It is our responsibility as surgeons to address to treat the patients presenting with these perforations as a whole rather than just closing the perforation surgically. Post-operative and pre-operative care is of at most importance apart from the surgical management as the mortality and morbidity which follows it is very high. In our country, especially in our institution most of the patients we see are from low socio economic status who neglect and ignore their complaints for a very long time by consulting local unqualified medical personnel and come to a proper care after significant delay after the time of onset of symptoms. This study tries to evaluate similar factors which influence the morbidity and mortality of these patients and compare it with the existing literature. The mean ages were, for males 45.27 years and for females 45.75 years.

Peptic ulcer perforation is common in 3rd and 4th decade. Mean age of patients with peptic ulcer perforation in study by Kocer et al. (2007)¹ was 43 years and in the study by J. C. Dakubo et al. (2009)⁵ it was 41 years. However Sharma et al. (2006)⁶ another Indian study showed mean age of 33 years.

Age related mortality was higher in >65 years age group which was similar to J. C. Dakubo et al. in 2009⁵. Morbidity is increased in age group of 51-60 with 20 cases in this age group, 6 patients expired in the age group of 61-70 and 4 patients expired in the age group of 51-60. This shows morbidity as well as mortality increases with age. This finding is consistent with other studies Sharma et al. (2006)⁶, J. C. Dakubo et al. in 2009⁵, Kocer et al. (2007)¹, Kujath P et al 2002⁴.

In this study 9 (18%) had history of regular ingestion of NSAIDs and 1(2%) of the patients showed morbidity and 2(4%) of patients showed mortality

1(2%) patient had history of ingestion of corticosteroids. History of regular smoking was present in 11 (22%) patients and of these 3(6%) patients developed morbidity and 2 (4%) patients expired in postoperative period. Of the 3 patients with history of smoking who developed morbidity 2 patients 66.66% of the morbidity had post-operative pulmonary complications. History of regular alcohol consumption was present in 19(38%) patients, 3 (6%) patients developed morbidity and 5 (10%) patient expired in postoperative period.

In a study by Kocer et al. in 2007¹, 8.9% patients had history of regular ingestion of NSAIDs whereas in study by J. C. Dakubo et al. in 2009⁵, it was 28.22% and they showed increase in the morbidity. In our study 18% patients were chronic NSAIDs users but there were no statistically significant relation to NSAID use and morbidity and mortality which was similar to Taha et al 2008².

In a study by Kocer et al. in 2007¹, J. C. Dakubo in 2009⁵ showed an increased in morbidity due to pulmonary complications in smokers and increase mortality in alcoholics which is correlating with the present study stating that previous history of regular alcohol consumption as an important factor in determining the morbidity and mortality in peptic ulcer perforation cases.

A previous history of dyspepsia or peptic ulcer symptoms was present in 9 (18%) 2(4%) developed morbidity and 1(2%) patient expired. 16 (32%) patients had associated co-morbid conditions. Hypertension was present in 8(16%) patients, COPD was present in 1(2%), 2(4%) were diabetic, 2(4%) patients had pulmonary tuberculosis, 5(10%) patients had anaemia with haemoglobin <11g/dl. This shows that presence of com or bilities significantly adds to the morbidity and mortality which was similar to Noguiera Cet al 2003⁷ and Testini M et al 2003⁸.

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In a study by Kocer et al. in 2007¹, 73.2% patients had history of regular smoking whereas in study by J. C. Dakubo in 2009⁵, it was

9.81%. In our study 48.57% patients were chronic smokers. In a study by Kocer et al. in 2007¹, 12.3% patients had history of regular alcohol consumption whereas in study by J. C. Dakubo in 2009⁵, it was 38.03%. In our study 37.14% patients were chronic alcoholics.

All the above studies showed an increased in morbidity in smokers especially the incidence of pulmonary complications is more in these patients which is correlating with the present study. The incidence of mortality in the present study is high in the patients with regular alcohol intake which correlates with the above studies to state that previous history of regular alcohol consumption as an important factor in determining the morbidity and mortality in peptic ulcer perforation cases.

A previous history of dyspepsia or peptic ulcer symptoms was present in 9 (18%) out of 50 patients. 2(4%) developed morbidity and 1(2%) patient expired. 16 (32%) patients had associated co-morbid conditions. Hypertension was present in 8(16%) patients, COPD was present in 1(2%), 2(4%) were diabetic, 2(4%) patients had pulmonary tuberculosis, 5(10%) patients had anaemia with haemoglobin <11g/dl. This shows that presence of comorbidities significantly adds to the morbidity and mortality.

Noguiera Cet al 2003⁷ and Testini M et al 2003⁸ has showed presence of pre-existing medical illness as significant predictor of morbidity and mortality.

Hb<11 was present in 5(10%) patients, 3(6%) patient developed morbidity and 1 (2%) patients expired in postoperative period. Hb>11 was present in 45(90%) patients, 33(66%) patients developed morbidity and 7 (14%) patients expired in postoperative period.

As the p value is >0.05 there is no statistical significance to the level of haemoglobin and the association with morbidity and mortality in the present study. But there is a significant relation to the perioperative complications to the preoperative haemoglobin level.

The present study and Thorsen K et al 2014³ showed similar rate of mortality in the studies where as Kocer B et al 2007¹ and Dakubo JC et al 2009⁵ showed lower rate of mortality

CONCLUSION

From present study following conclusions can be drawn based on various observations and its analysis. Peptic perforation is common in the age group of 30-50 years. It is more common in males. Age more than 65 years and associated medical illness increase morbidity and mortality in patients with peptic perforation. The duration of perforation more than 24 hours and presence of shock on admission are associated with an increased rate of post-operative complications. Site of perforation gastric or duodenal has no significant effect on outcome that is morbidity and mortality in patients with peptic perforation. Early diagnosis, prompt management of shock and septicemia, decreasing delay in surgery and definitive surgical treatment is needed to improve overall results.

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