

A Clinical Study of Complications and Surgical Management of Peptic Ulcer Diseases Patients in a Tertiary Care Centre in Davangere, Karnataka

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Abstract

Background: Peptic ulcer is one of the most common malady that affects the mankind in South India. Though lot of work had been done on the etiology of this condition, one specific etiological agent cannot be incriminated in the causation of this particular disease especially in our part of country. Peptic ulcer may produce one of the three main complications: haemorrhage, perforation or obstruction. In our study, we will be restricted to find out the magnitude of complications of peptic ulcer with special reference to the failure of conservative treatment, complications due to irregular treatment, etiological factors and various surgical treatment modalities. **Materials and Methods:** The patients admitted to J.J.M. Medical College Davangere with primary diagnosis of complications of peptic ulcer disease with complication and who underwent surgical management for the above was taken for this prospective study from June 2009 to June 2011. A minimum of 50 cases after applying inclusion and exclusion criteria were selected for this study and allocated alternatively to each of the clinical study. A pretested proforma was used to collect relevant information from all the selected patients. **Results:** In this prospective study of 50 cases, 35 cases (70%) of perforation, 2 cases (4%) of bleeding and 13 cases (26%) of gastric outlet obstruction were documented. Study revealed male predominance, mainly in the 3rd and 4th decade with male to female ratio of 7.3:1. 32 (64%) patients of the study group with previous history of

peptic ulcer disease, 12.5% among them who were on regular conservative treatment and the remaining 87.5% of patients taking irregular treatment came with the subsequent complications. **Conclusion:** In the present era of potent PPI and anti H. Pylori treatment, medical treatment plays a vital and pivotal role in treating expectantly majority of patients with peptic ulcer disease. Though revolutionary advances have come into lime light in the conservative management of the disease, surgical management is mandatory for patients with refractory and complicated peptic ulcer disease.

Keywords: Perforated Peptic Ulcer; Bleeding Peptic Ulcer; Gastric Outlet Obstruction; Nsaids; Smoking; H.Pylori; Proton Pump Inhibitors.

Introduction

The term "*peptic ulcer*" refers to an ulcer in the lower esophagus, stomach, duodenum, in the jejunum after surgical anastomosis to the stomach or rarely in the ileum adjacent to Meckel's diverticulum. Peptic ulcers are so named because, in addition to acid being a requirement for their occurrence, pepsin is probably also required.

Peptic ulcer is one of the most common malady that affects the mankind in South India. Though lot of work had been done on the etiology of this condition, one specific etiological agent cannot be incriminated in the causation of this particular disease especially in our part of country.

Peptic ulcer may produce one of the three main complications: hemorrhage, perforation or obstruction. These can develop without any premonitory symptoms. These complications arise due to failure of adequate and timely medical treatment, poor socio-economic

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conditions (prevalence of H. Pylori), use of NSAID's, alcohol abuse and smoking [1].

The history of management of peptic ulcer disease is one the great stories in the history of general surgery [1]. Medical therapy cures peptic ulcer in the vast majority of cases, therefore in many areas of the world elective surgery for peptic ulcer disease has almost but disappeared [2].

Selective H2 receptor blockers, proton pump inhibitors & antibiotic therapy were found to eradicate H.pylori. An advance in the understanding of pathophysiology of peptic ulcer disease has led to changes in treatment. Surgical management of peptic ulcer disease is still useful in cases of drug failure, for unable to obtain the drugs or to comply with the medical therapy.

In the most parts of the world, surgical therapy is now utilized primarily for complications of peptic ulcer disease. These are usually emergency operations. Currently up to 90% of all ulcer operations are interventions for complications including hemorrhage, perforation & gastric outlet obstruction [3]. Complications of peptic ulcer disease requiring operative intervention have remained important.

However, the absolute number of procedures performed has significantly diminished in recent years. Some believe that the need for emergency surgery has not reduced, probably because of the increasing incidence of NSAID'S associated complications [4,2].

In our study, we will be restricted to find out the magnitude of complications of peptic ulcer (namely perforation, bleeding and gastric outlet obstruction) with special reference to study of failure rate of conservative treatment, to study the complications due to irregular treatment taken, etiological factors and various surgical treatment modalities.

Objectives

To study the complications of peptic Ulcer Diseases and surgical management of Complications of Peptic Ulcer diseases among High risk Patients and with Irregular treatment.

Materials and Methods

The patients admitted to Chigateri general hospital and Bapuji hospital attached to J.J.M. Medical college Davangere with primary diagnosis of complications of peptic ulcer disease like haemorrhage, hollow viscus perforation, gastric outlet obstruction and who underwent surgical management for the above was taken for this prospective study from June 2009 to June 2011.

Based on detailed history and thorough clinical examination diagnosis of complications were made. These patients were subjected to the required preoperative investigations and are taken for emergency or elective surgical management.

A minimum of 50 cases after applying inclusion and exclusion criteria were selected for this study and allocated alternatively to each of the clinical study. A pretested proforma was used to collect relevant information from all the selected patients.

Inclusion Criteria

- All patients with history & diagnostic features suggestive of peptic ulcer disease complications who were previously on conservative treatment.
- Patients those who are on irregular treatment and come with complications.
- Patient who are not in compliance with proton pump inhibitors.
- Patients who are on proton pump inhibitors treatment and who have no improvement in the condition.

After consulting with the unit chief, decision regarding conservative or surgical treatment was taken. In patients with perforation, factors which were taken into account were age of patient, general condition; time elapsed between onset of symptoms and admission to hospital and associated medical conditions. In patients with bleeding, the decision regarding type of treatment

was taken after considering age of the patient, general condition, number of episodes of haematemesis/ malena, presence of shock, previous history of haematemesis and number of blood transfusions required. In cases where surgical treatment was planned, preoperative correction of fluid and electrolyte imbalance was done, blood was arranged and antibiotics started. Most of the patients with perforation were subjected to emergency laparotomy.

Patient with bleeding after failure of endoscopic therapy were taken for emergency laparotomy and elective surgical intervention for Gastric outlet obstruction. Post-operatively, patients were put on continuous nasogastric suction, intravenous fluids and broad spectrum antibiotics. Vital signs were monitored. Assessment of intake/output and biochemical parameters was done. Recovery was observed and any complications occurring in postoperative period were noted and treated accordingly.

After satisfactory improvement, patients were discharged from the hospital with advice regarding diet, anti-ulcer drugs, H.pylori eradication therapy and quitting of smoking/alcohol etc. All the patients were instructed to come for regular follow up.

Results

In our study total of 50 cases were analysed.

In our study majority of the subjects were between the age group of 31 to 60 years. 44(88%) of the patients were male with 32(64%) of them belonging to Hindu religion. 34(64%) hailed from rural community and nearly 40% had poor socioeconomic status (Table 1).

Out of the 50 patients in our study 35(70%) had perforation, 2(4%) had Bleeding, 13(26%) had Gastric outlet Obstruction complication related to Peptic ulcer Diseases. Perforation was the most common complication due to Peptic Ulcer in our study. Out of 35 cases of perforation 31 (88.5%) cases were male and 4 (11.4%) were female reflecting the higher prevalence of Peptic Ulcer Disease Related complication more in Male Population. Both the cases of Bleeding were reported in male patients. 84.6% of male patients had gastric outlet obstruction compared to 15.3% of females. All the complication was reported higher among male than female. Among Cases with Perforation, Pain in the epigastrium and Right Hypochondrium was the most

common Presentation followed by Absent bowel sounds, Vomiting, fever, abdomen Distension and tenderness. Both cases of bleeding of peptic ulcer presented with pain abdomen, vomiting, Haematemesis, Malena and tenderness. Gastric Outlet Obstruction was presented with Vomiting, pain abdomen and malena. Visible Peristalsis was seen in all the cases and Succ Splash was seen in 76% of the cases (Table 2).

Among Patients with Perforation, 17 out of 35 cases had previous history of peptic ulcer disease in which 15(42.86%) patients on irregular treatment and 2 (5.71%) patients on regular treatment. Most of them are smokers, alcoholics, NSAID's users and stress personality. In this series failure of conservative medical line of management in 2 (5.71%) cases out of 35 cases. 2 out of 2 patients with Bleeding complication gave history of off and on pain in abdomen and taken regular treatment for peptic ulcer disease. 13 out of 13 cases had previous history of peptic ulcer disease, all of them on irregular treatment. Most of them are smokers, alcoholics, NSAID's users and stress personality (Table 3).

Table 1: Socio Demographic Profile of the Patients

Socio Demographic Variables		Number (n= 50)
Age	< 20 years	4
	21 to 30 years	5
	31 to 40 years	13
	41 to 50 years	13
	51 to 60 years	7
	61 to 70 years	6
	71 to 80 years	0
	>80 years	2
Gender	Male	44
	Female	6
Religion	Hindu	32
	Muslim	15
	Christian	3
Locality	Rural	34
	Urban	16
SocioEconomic Status	Good	10
	Poor	40
Education	Illiterate	15
	Primary School	5
	High School	12
	PUC	9
	Graduate	9

Table 2: Complication of the Peptic ulcer

Complication	No of cases	Percentage
Perforation	35	70
Bleeding Peptic Ulcer	2	4
Gastric Outlet Obstruction	13	26
Total	50	100

Table 3: Past History of Peptic Ulcer Disease and Treatment

		Perforation (n=35)		Bleeding (n=2)		Gastric Outlet Obstruction (n=13)	
		No of cases	%	No of cases	%	No of cases	%
Past History of PUD	Present	17	48.5	02	100	13	100
	Absent	18	51.4	0	0	0	0
Treatment for PUD	Regular	2	5.7	2	100	0	0
	Irregular	15	42.8	0	0	13	100
	Not taken	18	51.4	0	0	0	0

Table 4: History of nsaid use, alcohol & smoking habits

		Perforation (n=35)		Bleeding (n=2)		Gastric Outlet Obstruction (n=13)	
		No of cases	%	No of cases	%	No of cases	%
NSAID's Use	Yes	21	60	1	50	8	61.5
	No	14	40	1	50	5	38.5
Habits	Smoking	9	25.7	1	50	3	23.1
	Alcohol	4	11.4	1	50	1	7.7
	Both	12	34.3	0	0	7	53.8
	None	10	28.6	0	0	2	15.3
Steroids Use	Yes	2	5.8	0	0	1	7.7
	No	33	94.2	2	100	12	92.3

In the present study 60% of perforation cases had history of NSAID, 5.8% used steroids. Only 28.6% of the Perforated cases had no history of any Habits. Among the 2 cases of Bleeding 1 person had history of NSAID usage and both of them had history of Alcohol and Smoking habits. Among Gastric Outlet Obstruction 8 out of 13 patients gave history of recent use of NSAID, 1 out of 13 had Steroid Usage. Only 15.3% had no habit of Smoking and Alcohol. Out of 35 cases of Perforation 33 cases had perforation in the first part of Duodenum and 2 cases in Stomach -Pyloric Antrum. Two Patients underwent definitive Surgery for peptic ulcer along with Closure of Perforation with omental Patch and 33 cases had simple closure with Omental Patch. Two cases of Bleeding Peptic Ulcer were subjected with emergency laparotomy where gastrostomy with ulcer excision and suture ligation of the bleeding vessel was done. 13 patients (100%) who had gastric outlet Obstruction underwent truncal vagotomy with posterior gastrojejunostomy. Majority of the patients responded well post operation for perforation. About 28.5% had respiratory tract infection, 17.1% had wound infection, 5.7% of patient had frank wound Dehiscence. In the present study, 2 (5.71%) out of 35 patients with Perforation expired after simple closure of perforation (Table 4).

Discussion

Duodenal ulcer perforation is a common surgical emergency in our part of the world. The epidemiology of peptic ulcer disease (PUD) continues to change. A little more than a decade ago, the number of patients

undergoing operation for complications appeared to be relatively stable. From a surgeon's perspective, data related to H Pylori infection and the classic indications for surgery - perforation, bleeding, and gastric outlet obstruction have until recently been largely inferential based upon treatment of those with uncomplicated peptic ulcers.

The incidence of peptic ulcer diseases and complication was more common among the middle aged group in our study. This High incidence in Middle Age group is consistent with findings of S.N. Mathur [5], A.K. Dev [6], Banerjee ST [7] and Ramesh C. Bharti et al. [8]. The probable reason for higher incidence in middle age group may be attributed to higher prevalence of alcohol and smoking habits and stress factors in this group.

In our study the Male predominance (88.5%) of Peptic ulcer Disease was found which is similar to the study findings of Sapers et al. [9] (72%), Dandapat et al. [10] (90.6%) and Ramesh C Bharti et al. [8] (96%).

In the present study, 17 out of 35 cases of Perforation had previous history of peptic ulcer disease in which 15 (42.86%) patients on irregular treatment and 2 (5.71%) patients on regular treatment. Most of them are smokers, alcoholics, NSAID's users and stress personality. The incidence is somewhat less than previous studies done by Cotton PB et al. [11] in 1973, Minhas S. S et al. [12] in 1987 and Mourougayan V et al. [13] in 1994 where incidence was 80%, 49% and 68.7% respectively.

Out of 2 patients with Bleeding Complication gave history of off and on pain in abdomen and taken regular treatment for peptic ulcer disease. The findings are

consistent with a study done by Banerjee ST et al. [7] in 1994.

In the present study, 60% of Perforated patients gave history of recent use of NSAID's for associated medical and orthopedics problems which is almost similar to the findings of Blower AL et al. [14], Wilcox C M et al. [15], Lans et al. [16]. 50% of the bleeding Peptic ulcer case had history of NSAID usage which is lesser when compared to findings of Blower et al. [14] and Wilcox C M et al. [15].

In our study the smoking and Alcohol consumption was seen in 60% of patients out of which 26% were smokers alone, while 34.3% both smoker and alcohol also. In a study done by Smedley F H [17] in 1988, smoking was associated in about 86% of patients. This proves ulcerogenic effect of tobacco on the gut mucosa.

Most of the patients with perforation underwent simple closure reinforced with omental patch with Vicryl 2-0 (absorbable) material. Simple closure of perforation was performed in 35 patients. Mathur SN et al. [5] in 1991 stated that "simple closure is the operation of choice in perforated duodenal ulcer patients". Mourougayan V [13] in 1994 and Ramesh C. Bharati [8] in 1996 stated that "simple closure is the safe emergency procedure in all perforated duodenal ulcer patients".

Two out of 35 patients (5.71%) with perforated duodenal ulcers underwent definitive surgery in the form of simple closure with omental patch and Truncal vagotomy and pyloroplasty. Lawal OO et al. [18] (1998) advised the treatment of perforations in the majority of patients was by simple closure or truncal vagotomy and pyloroplasty. 13 patients (100%) with gastric outlet obstruction underwent truncal vagotomy with posterior gastrojejunostomy. According to Yang PJ, Yang CY, Lin TH, et al. [19] "Surgical procedures that are considered in gastric outlet obstruction related to refractory PUD include vagotomy and pyloroplasty, antrectomy, and gastroenterostomy."

Conclusion and Recommendation

The highest incidences of peptic ulcer disease and its complications are common in the age group of 30-50 years, male and lower socio-economic strata. Majority of patients present with vague abdominal pain in epigastric region, vomiting. Non-steroidal anti-inflammatory drugs, Type A personality, smoking and alcohol consumption are important risk factors. Incidence of complications is more in patients with irregular medical treatment and lesser in patients with regular medical treatment for peptic ulcer disease.

In the present era of potent PPI and anti H. Pylori treatment, medical treatment plays a vital and pivotal role in treating expectantly majority of patients with peptic ulcer disease. Though revolutionary advances

have come into lime light in the conservative management of the disease, surgical management is mandatory for patients with refractory and complicated peptic ulcer disease.

References

1. Ronald F, Martin MD. Surgical management of ulcer disease. *Surgical clinics of North America*. 2005;85: 907-29.
2. Towfigh S, Chandler C, Hines OJ, Mcfadden DW. Outcomes from peptic ulcer surgery have not benefited from advances in medical therapy. *Am surg* 2002;68: 385-389.
3. Jamieson GG. Current status of indications for surgery in peptic ulcer disease. *World J Surg* 2000;24:256-58.
4. Schwesinger WH, Page CP, Sirinek KR. Operations for peptic ulcer disease: Paradigm lost. *J Gastrointest Surg*. 2001;5:438-43.
5. Mathur SN, Khandelwal R. Peptic perforation - A clinical study of prognostic factors. *Ind J Surg*, 1991;53(6): 251-53.
6. A.K.Dev, S.Paul, N.Bhattacharjee, et al. Perforated duodenal ulcers. *Ind J Surg*, 1994;56(5):222-27.
7. Banerjee ST. Clinical and endoscopic evaluation of gastroduodenal haemorrhage. *Ind J Surg*, 1994;92(7): 221-22.
8. Ramesh C, Bharti DC, Marwaha, Minhas SS. A comparative study between definitive surgery and simple closure in perforated duodenal ulcer. *Ind J Surg*, 1996;58(10):275-79.
9. Saperas E, Piquie JM, Ayuso Perez. Conservative management of bleeding duodenal ulcers without a visible vessel: Prospective randomized trial. *Br J Surg*, 1987;74:784-86.
10. Dandapat MC, Mukherjee LM, Mishra SB, Howlader PC. Gastrointestinal perforations. *Indian J Surg*; 1991;53:189-93.
11. Cotton P.B. et al. Early endoscopy of oesophagus, stomach and duodenal bulb in patients with haematemesis and melena. *Br Med J*, 1973 Jun 2;2(5865):505-9.
12. Minhas S.S. Management of perforated duodenal ulcer - (A review of 76 cases). *Ind J Surg*, 1987;49(3&4):130-132.
13. Mourougayan V, Smile SR, Sibal RN. Morbidity and mortality of definitive surgical procedure in duodenal ulcer perforation. *Ind J Surg*, 1994;56(3):102-108.
14. Blower A.L. Armstrong C.P. (Letter) *Lancet* 1, 1986.
15. Wilcox CM et al. Striking prevalence of the over the counter NSAID's use in patients with upper GI bleeding. *Arch Int Med*, 1994;154(1):42-46.
16. Lans et al. NSAIDs and Peptic ulcer. *Service of Gastroenterology, Unidad Mixta de Investigation Hospita Clinco, Spain, Gsatrpemterp*, 1997 Mar; 112(3): 683-9.
17. Smedly FH, Hickish T. NSAIDs and peptic ulcer perforation. *Gut*, 1986;27:114.
18. Lawal OO et al: Clinical pattern of perforated prepyloric and duodenal ulcer at Ile-Ife, Nigeria. *Trop. Doct*. 1998; 28: 152-155.

19. Yang PJ, Yang CY, Lin TH, et al. A novel surgical technique: gasless laparoscopy- assisted gastrojejunostomy. *Hepatogastroenterology* 2008;55(86-87):1948-50.
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