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"CLINICAL PROFILE AND OUTCOME OF SURGICAL MANAGEMENT OF PERFORATED DUODENAL ULCER: A RECORD BASED STUDY IN A TERTIARY HOSPITAL."

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Abstract:

Among abdominal emergencies, perforations of peptic ulcer are third in frequencies, Inspite of modern management, it is still a life-threatening catastrophe, Prompt recognition of the condition is very important and only by early diagnosis and treatment it is possible to reduce the still relatively high mortality. This study aims in understanding the factors responsible for duodenal ulcer perforation, that affect the post operative outcome, morbidity & mortality after surgery.

Key words: peptic ulcer, duodenal perforation.

Introduction:

Perforation is one of the most important complications of a peptic ulcer. Inspite of modern management, it is still a life-threatening catastrophe. The sudden release of gastric or duodenal contents into the peritoneal cavity through a perforation leads to a devastating' sequence of events which, if not properly managed, is likely to cause death. Perforation may occur in a patient with a known chronic peptic ulcer or it may happen without any preliminary symptomsat all (20%).

Recent statistics indicate that roughly 10% of the population develop a gastric or duodenal ulcer in lifetime. Roughly 1-3% of population above the age of 20 years have some degree of peptic ulcer activity during any annual period.

Among abdominal emergencies, perforations of peptic ulcer are third in frequencies, acute appendicitis and acute intestinal obstruction being more common. Prompt recognition of the condition is very important and only byearly diagnosis and treatment it is possible to reduce

the still relatively high mortality.

There is decline in incidence of peptic ulcers and elective surgery for peptic ulcers which is attributed to the era of h2 blockers and proton pump inhibitors, which provides symptomatic relief to patient. But the percentage of patients with perforation has not declined, probably due increased inadvertent use of NSAIDS, corticosteroids and because of irregular use of H2 antagonist drugs. PPI's[1.]

Lord Moynihan has stated that, "perforation of duodenal or gastric ulcer is one of the most serious and most overwhelming catastrophes that can befall a human being"

A detailed history with regard to the symptomatology of the patient, ameticulous examination of the patient, radiological and biochemical investigations help to arrive at a correct preoperative diagnosis.

Conservative treatment is definitely unsuitable for routine use, but few of the patients who are brought, to the hospital at a late stage, have major concurrent illness and preoperative shock, may improve with conservative treatment using Herman Taylor's regimen. Ulcer perforation was frequently treated by gastric resection informer days. whereas suture introduced, in 1887, is the method of choice today.[2] Current reports advocate mental patch closure only often laparoscopically with postoperative anti H. pylori therapy.[3.4]

Immediate treatment for perforated peptic ulcer has been an established procedure for some time now. It can be stated that immediate definitive surgery like truncal vagotomy with a drainage procedure or Proximal Gastric Vagotomy (PGV) after simple closure for perforated duodenal ulcer offers the prospects of a permanent cure with a mortality and morbidity comparable to that of patients with elective surgery.

The recent studies show that whenever a definitive surgery is deemed as appropriate addition to a simple closure of perforated DU, PGV is the procedureof choice.

If the condition is not diagnosed properly and not adequately treated, it progresses in a definitive manner with a typical course and may lead to the death of patient due to Bacterial Peritonitis in about 7-8 days.

The mortality increases with delay in operating. The mortality rate when operating is performed within 6 hours of onset of pain approaches Zero, from 6-12 hours the rate is 5-10%. 12-24 hours it is 25% or higher and in the course of 3rd day after it is operations are seldom successful.

This is achieved by prompt transportation of patient to major surgical centre.

AIMS & OBJECTIVE

To find out factors affecting the outcome of duodenal ulcer perforation and postoperative analysis after Graham's omentoplasty in MIMS Hospital mandya.The objective is to study:

1. The factors responsible for duodenal ulcer perforation

2. The factors that affect the post operative outcome.

3. Morbidity & mortality after surgery.

Material & Methodology

Fifty patients case sheets were selected retrospectively who were diagnosed as duodenal ulcer perforation, admitted in MIMS hospital. Mandya between 01/07/2020 to 01/07/2022. Patients underwent Graham's omentoplasty. All data related to the objectives of the study were collected.

Observations And Results:

Majority of patients belong to the age group of 30-50 years (table I) and commonly males (table 2). Most of the perforations occur in first part of duodenum (table 3), low socio-economic group (table 4), O+ve blood group (table-5) with maximum seasonal incidence in October-January (table 6). Allcases were managed by Graham's omentoplasty. Four per cent of mortality noted.

Table-1: Age distribution:

Age	No of patients	Percentage
1-10	**-**	**-**
11-20	**2**	**4%**
21-30	**6**	**12%**
31-40	**10**	**20%**
41-50	**15**	**30%**

51-60	**10**	**20%**
> 60	**7**	**14%**
total	**50**	**100%**

Table-2: sex distribution

Sex	**No of patients**	**Percentage**
Male	**48**	**96%**
Female	**02**	**4%**
total	**50**	**100%**

Table-3: site of perforation:

Site of perforation	**No. of cases**	**percentage**
D1- anterior wall	**49**	**98%**
D1- posterior wall	**-**	**-**
D2- anterior wall	**1**	**2%**
total	**50**	**100%**

Table-4: Occupation:

Site of perforation	**No. of cases**	**percentage**
Unskilled	**33**	**66%**
Semiskilled	**11**	**22%**
Dependants	**6**	**12%**
total	**50**	**100%**

Table-5: Blood group:

Blood group	No. of cases	percentage
O+	25	50%
A+	8	16%
B+	13	26%
AB+	2	4%
NOT DONE	2	4%
TOTAL	50	100%

Table-6: Seasonal incidence of perforation:

MONTH	No. of cases	percentage
February - May	12	24%
June -September	15	30%
October - January	23	46%
total	50	100%

Discussion

Duodenal ulcer perforation is one of the commonest surgical emergencies requiring hospitalization and early management.

Peptic ulcer disease which was once so common 3-4 decades ago hasdrastically decreased in the incidence due to the invent of PPIs and anti H. pylori therapy.

Although perforated duodenal ulcer remains a dramatic surgical emergency. Now-a-days it seldom results in death. The surgical mortality has decreased steadily and is now about 5% (Sawyers et al, 1976). This improvement as well as high incidence of ulcer relapse after closure of perforations. Obviously. patient characteristics arc crucial in choosing optimal surgical treatment. Simple closure or even non-operative management is acknowledged to be most appropriate for patients who are markedly debilitatedor in shock.[1,2,3,4.]

Simple closure is associated an unaccepted high recurrence rate oi Duodenal ulcer. it is as

high as 92.50% (Anantha Krishnan et al.: 1993).[5] But with increased knowledge about the significance of H. pylori infection in perforated DU, it has been, shown that eradication of this organism has becomeimperative after patch closure.

Duodenal ulcer perforation common on the age group of 30-50 years inour study, but the age is no bar for perforation to occur.

Table-7: Comparing age incidence of our study with various studies:

STUDIES	Peak age in years
Turner (1951)	**30-40**
James et al (1961)	**30-50**
Jamison (1964)	**20-35**
Mishra SB et al (1982)	**35-55**
Weinganker	**20-40**
Present series	**30-50**

Svanes C has reported that lethality' is higher in the elderly (Hlysocki Aet al.. 2000).[6]

In the present series of 50 cases. 48 were males. The majority of authorshave reported that incidence is high in males when compared to females.

The high incidence of male can be explained on the basis of great Hardship stress, anxiety, indulgence in alcohol, and smoking and protectiveinfluence of female sex hormones in them.[7]

It is believed that Du perforation occur in those people who are engaged in he, manual Labour. Wair et al. in relatively 1390 cases in Scotland, found highest incidence in fisherman farm labourers and heavy manual workers. Very few incidences were found in people with professional sedentary occupation.

In our study, it is noticed that perforations occurred in patients belonging to poor socio-economic status and more so in rural population who are unskilledlabourers, The incidence of perforation in urban class les, because of effective medical treatment and early surgery they seek whenever they suffer from peptic ulcer disease.

The analysis of 50 cases in present series in relation to various months showed that the maximum incidence of perforation was during Oct-Jan (46%)followed by June Sept (30%).

It was lowest during Feb. May (24%). According to Shanmukhrao, in India great number of perforations occur during Nov, Dec and Jan months because of the work of cultivators being more during the winter season.

Svanes. C and Feuang BT et al, showed that chronic smoking increased the risk of perforation to 10 fold in the age group of 15-74 years, and there was highly significant dose-response relationship. They concluded that smoking is a causative factor for ulcer peroration and accounts for a major part of ulcer perforation in the population aged 75 years.

In our study total 33 patients out of 50 well smokers and alcohol.

Majority. (Inpatients) of them were in a habit of smoking and alcoholism. Thispoint out to the synergism between the both and has a higher incidence when compared to people having only one habit either alcohol/ smoking).

Tsugawa K, et al. (2001) reviewed that 3 risk .factors pre-operative shock delay to surgery over 24 hours and medical illness, led to increased morbidity and mortality in patients with perforation[8]. Boey John et al. (1982). revealed concurrent medical illness. pre-operative shock and delayed presentation (> 48 hours) are significant risk factors that increase mortality in patients with perforated DU[9].

In the present study (2012) we reported that age duration of perforation, size of perforation, pre-operative shock, H. Pylori infection associated co-morbid medical illness are the risk factors for the outcome of perforated peptic ulcer

Ng. et al. (20011, noted that 81% of the patients with perforated D.U. were infected with H. pylori.[10.] Kate V et al. (2001, BJS) reported 73% prevalence in peptic ulcer.[11] In the present study, we were not able analyze the H. pylori infection, because of non-availability of facility in our hospital and poor status of our patients.

- Lavval et al. (1998) advised the treatment of perforation in the majority of patients was by simple closure or truncal vagotomy and pyloroplasty.

- Marque R et al (2000) revealed that simple closure remains the selected Rx. in the majority of patients who present with a perforated peptic ulcer.[12]

- Michael W Mulholland (1996) published that omental patch closure of the perforation combined with proximal gastric vagotomy is the attractivechoice the patients with perforated D U. The procedure is safe and effective in preventing ulcer recuffence.[13]

- Tsugowa K et. al. (2001) reported that omental patch closure is recommended for

perforated because DU because its low mortality and measuring over 20 mm is diameter at perforation hole.

- Jain and Snyvna et al, (2006) showed that omental plugging is a safe and reliable method of management for large sized (>2 cm) duodenal perforation

- Present series of 50 patients show that duodenal ulcer perforation are more common in people with 0+ve blood group (50%)

- clark, et al (1980) reported the incidence of DUP in various ABO blood group, and concluded that it more common in O+ve individuals and Rarein AB+ve.

Since D.U. Perforation is an emergency, time spent for unnecessary investigations is cut off and basic investigations like X-ray erect (Abd) for gas under diaphragm and paracentesis for bile is all that is enough in making a probable diagnosis of perforation.

The amount of gas under diaphragm will give an idea about the size of perforation and also duration of perforation.

In our series 76% of cases yielded bile on paracentesis and 6% of them hasbile admixed with pus. These later patients had long duration of presentation and presented in shock.

In the present study, all 50 cases were subjected to Graham's omentoplasty as no perforation was greater than 2cm.

The mortality in these 2 patients can be attributed to elderly age. In late presentation, shock at the time of presentation, bigger size of perforation and chronic smoking, alcoholism with other co-morbidities.

Conclusion

The following is the list of conclusions drawn after the study of 50 cases of perforated duodenal ulcer.

1. Duodenal ulcer perforation is one of the common acute abdominal emergencies and accounts for 9% of total abdominal emergencies admitted.
2. The peak incidence was between 30 and 50 years.
3. In the present series, all the cases were male.
4. Duodenal ulcer perforation was common in lower socio-economic group and unskilled workers.

5. The maximum incidence of perforation occurred in the months ofOctober to January.

6. The duration of perforation >24 hours has increased morbidity andmortality.

7. Perforation of more than 1 cm size had a mortality of 4% which indicatesthat size of perforation, has a significant role in prognosis.

8. The evidence of duodenal ulcer perforation was maximum in patients withblood group 'O' positive compared to other blood groups.

9. Early diagnosis and prompt management of shock and septicaemia is important for better prognosis of patients.

10. Graham's omentoplasty is the emergency procedure of choice for allduodenal ulcer perforations of size less than 2 cms.

11. H. pylori eradication treatment is mandatory after simple closure of theperforation to prevent recurrence of ulcer.

12. Mortality was high in patients with long duration of presentation, largeperforation size and having associated comorbidities.

BIBLIOGRAPHY

1) Greco PS, Cow CE. Alternatives in the management of acute perforatedduodenal ulcer. Am J Surg 1974;127:109-14.

2) Jordan PH Jr. Evolvement of a new treatment for perforated duodenal ulcer. Surg Gynaecol Obstret 1976:142:391-5.

3) Mark JBD. Factors influencing the treatment of perforated duodenal ulcer. SurgGynaec Obstret 1969:129:325-30.

4) Maynard A del. Gastroduodenal perforation. Archives Surg 1968;97:98-104

5) Ananthakrishnan N. Is visick grading alone reliable for selecting patients requiring endoscopic work up for recurrence after simple closure of duodenalulcer perforation? Indian J Surg 1993;55:357-60.

6) Svanes C. Trends in perforated peptic ulcer: Incidence, etiology, treatmentand prognosis. World J Surg 2000;24(3):277-83.

7) DeBakey ME. Acute perforated gastroduodenal ulceration. A statistical analysis and review of the literature. Surgery 1940;8:852-84.

8) Tsugawa K.The therapeutic strategies in performing emergency surgery for gastroduodenal ulcer perforation in 130 patients over 7C years' of age. Hepatogastroenterology 2001 ;48(37): 156-62.

9) Boy J, Wong J. A prospective: study of operative risk factors, in perforated duodenal

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ulcers. 'Ann Surg 1982;195:265-9.

10) Ng EK. Eradication of H. pylori prevents recurrence of ulcer after simple closure of duodenal ulcer perforation: randomised controlled trial. Ann Surg 2000;231:153-8.

11) Kate V, Ananthakrishnan N. Effect of H. pylori eradication on the ulcer recurrence rate after simple closure of perforated duodenal ulcer: Retrospective and prospèctive randomised controlled studies. London: British Journal Surgery2001;88:1054-8.

12) Marquez R. Simple closure or vagotomy and pyloroplasty for the treatment of a perforated duodenal ulcer: Comparison of results, Digestive Surg 2000: 17(3):225- 8.

13) Michael W Mullholland. Peptic ulcer disease. Chapter 6. In: Digestive tractsurgery - A text and atlas. Philadelphia: Lippincott-Ravels Publication; 1996. pp. 184-5.