

A Study of Clinical Features, Management and Prognosis in Perforated Duodenal Ulcer in a Tertiary Care Hospital

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Abstract:

Background: Perforated duodenal ulcer is one of the commonest causes of acute abdomen. The incidence of perforation in duodenal ulcer is around 15%. Early diagnosis and surgical intervention definitely decreases the morbidity and mortality of patients with perforated duodenal ulcer.

Aim: To study the clinico epidemiological features of duodenal perforation. 2. To study the prognostic factors influencing the outcome in patients with perforated duodenal ulcer.

Material and Method: The study material consisted of 100 patients with duodenal perforation who presented as acute abdomen and were managed in Dept. of General Surgery in SVRR Govt. General Hospital, Tirupati.

Results: Morbidity in duodenal perforation was inversely proportional to the duration of symptoms, age of patient, severity of dehydration and peritoneal cavity contamination.

Keywords: Abdominal pain, Perforated duodenal ulcer.

I. Introduction

Duodenal ulcer is a very common condition in South India. Though, the incidence of duodenal ulcer is decreasing because of effective medical treatment, the most serious and life threatening complication i.e., perforation of duodenal ulcer continues to occur in this region.

Aim of Study

- To study the clinico epidemiological features of duodenal perforation.
- To study the prognostic factors influencing the outcome in patients with perforated duodenal ulcer.

II. Material And Methodology

A total of 100 patients with perforated duodenal ulcer who underwent surgery in Dept. of General Surgery in SVRR Govt. General Hospital were included in the study. Patients with traumatic duodenal perforation were excluded from the study.

A thorough history taking, clinical examination, appropriate radiological examination, ultrasound examination and other routine investigations were performed in all the patients. The operative findings were noted. All patients were followed up for 6 months after discharge.

The collected data was analyzed with respect to the epidemiological features, clinical presentation, etiological factors, morbidity and mortality.

III. Observations And Results

Table 1 Age wise Incidence of Duodenal Perforation

S. No.	Age Distribution	No. of Patients
1	<20	2
2	21-30	13
3	31-40	27
4	41-50	32
5	51-60	14
6	>60	12

In this study, maximum no. of patients i.e., 59 (59%) were in their fourth and fifth decades of life and only 2 patients (2%) were aged less than 20 years.

Table 2 Sex wise and Regional Distribution of Cases

Sex	Number	Percentage	Region	Number	Percentage
Male	94	94%	Rural	84	84%
Female	6	6%	Urban	16	16%
Total	100	100	Total	100	100

In this study, majority of the patients were males i.e., 94% and 84% of the patients belong to rural areas.

Table 3 Predisposing Factors

Habits	No. of Patients
No Habits	5
Spicy Food	65
Alcohol	64
Smoking	38
H/o Drug Intake	16
H/o Peptic Ulcer	21

According to this study, intake of spicy food, alcoholism and smoking were the most common predisposing factors.

Table 4 Modes of Presentation and Duration of Pain in Days

Symptoms	No. of Cases	Duration of Pain in Days	No. of Patients
Pain Abdomen	100	1	23
Distention of Abdomen	95	2	50
Constipation	93	3	18
Vomiting	63	>3	09
Fever	28	Total	100

In this study, all the patients presented with acute pain abdomen and 95% of patients presented with distension of abdomen. Constipation was seen in 93%, vomiting in 63% and fever in 28% of patients.

Distension was most commonly observed in cases with more than 24 hours history of symptoms. In most cases, pain was situated in the epigastrium and right hypochondrium. In this study, majority of patients presented within 2 days after onset of pain abdomen.

Table 5 Table Showing Incidence of Signs of Perforation

Signs	No. of Cases
Dehydration	67
Shock	07
Pallor	17
Distension	90
Tenderness	100
Rigidity	100
Obliteration of Liver Dullness	99
Absent Bowel Sounds	100

In this study, rigidity of abdomen, obliteration of liver dullness and absent bowel sounds were present in all cases. Abdomen was board like and tender in all the cases.

In this study, the perforation was situated in the anterior wall of first half of the first part of duodenum in 96% of cases and in 4% of cases, it was situated in the anterior wall of pyloric antrum. The treatment performed in all the cases was simple closure of the perforation with live omental patch.

Table 6 Table Showing Association of Duration of Symptoms and Mean Hospital Stay and Mortality

Duration of Symptoms	No. of Patients	Mean Hospital Stay in Days	Mortality of Patients
1	23	7.4	-
2	50	13.38	-
3	18	17.16	-
>3	9	13.44	5

The above table shows that as the duration of symptoms increases, the mean hospital stay as well as mortality of patients increases.

Table 7 Association of Duration of Symptoms, Severity of Dehydration and Incidence of Complications

Time since onset of Pain	No. of Patients	No. of Patients with Complications	Severity of Dehydration	No. of Patients	No. of Patients with Major Complications
1 day	23	1	No Dehydration	34	Nil
2 days	50	19	Mild Dehydration	45	01
3 days	18	11	Moderate Dehydration	17	03
>3 days	9	5	Severe Dehydration	04	04
Total	100	36	Total	100	08

This table shows that delay in management of the condition leads to increase in incidence of complications.

Table 8 Association of size of Perforation with Post op Complication

Size of Perforation	No. of Patients	Total Complications	Minor Complications	Major Complication
<0.5 cms	2	1	1	-
0.5 to 1 cm	93	34	30	4
>1 cm	5	5	-	5
Total	100	40	31	9

This table shows that increase in size of perforation leads to increase in incidence of complications.

Table 9 Incidence of Post Operative Complications

Post op Complication	No. of Patients
Uneventful	63
Pain at wound side	09
Wound discharge	18
Biliary Leak	04
Burst Abdomen	01
Deaths	05

In the present study, 71% of patients had uneventful post op period, 18% of patients suffered from minor complaints, 6% of patients were lost to follow up and mortality was 5%. All the 5 patients died in the immediate post operative period.

IV. Discussion

Perforated duodenal ulcer is one of the commonest acute abdominal emergencies presenting to the Dept. of General Surgery in SVRR Govt. General Hospital, Tirupati. In our study the highest incidence of perforation was in the fourth and fifth decades of life. It was more common in patients with low socio economic status. More than half of the patients had O+ve blood group.

Majority of patients presented with sudden onset of pain in the epigastrium initially which later became generalized. General condition of patients who presented within 48 hours after onset of pain was stable. In our study, 79% of patients had either no signs of dehydration or mild dehydration and the rest had moderate to severe dehydration.

All patients presented with pain abdomen, vomiting was present in 63% of patients and abdominal distension was present in 95% of patients. All had generalized guarding, rigidity and diffuse tenderness with obliteration of liver dullness.

All cases showed gas under one or both domes of diaphragm with ground glass appearance. Routine investigations were within normal limits for most of the patients except for a few who had electrolyte imbalance and elevated renal parameters. Diagnostic peritoneal tap was positive in all cases. It was bilious in most patients and pus was aspirated in few patients.

Closure of the perforation was done with live omental patch in all the patients.

Among the post operative complications, 27 were minor complications and 10 were major complications. Minor complications included post operative wound discharge and wound pain. Among the major complications, 4 patients developed biliary leak which was managed conservatively and all patients recovered well. One patient had burst abdomen which was managed by retention sutures. In our study, 5 patients died in the immediate post operative period. Among 5 patients who died, 3 patients presented after 5 days of onset of symptoms and 2 patients presented after 4 days. Time of presentation, general condition of patient, size of perforation and time gap for surgery were all related to post operative complications and mortality. All 5 patients who died, had severe dehydration and gross peritoneal cavity contamination. The size of perforation and the type of closure performed also had significant relationship with post operative complications. In our study, patients were followed up for 6 months. 63% of patients had uneventful follow up.

Table 10 Comparison of Different Parameters with other Studies

	Boey J, etal [1]	Gray JG, etal [2]	Jordan, etal [3]	Sugawa, etal [4]	Ripin V, etal [5]	Our Study
Predominant Sex	Male	Male	Male	Male	Male	Male
Rural/Urban	Rural	Rural	-	Urban	Rural	Rural
Blood Group	0	0	-	-	0	0
Predisposing Factor (MC)	Spicy Food	-	Spicy Food	Alcohol	Spicy Food	Spicy Food
Definitive Procedure	34.7%	-	35%	-	46%	-
Complication (MC)	Wound Infection	Wound Infection	-	-	-	Wound Infection
Mortality	4.7%	6.3%	13.8%	5.3%	7.5%	5%

V. Conclusion

1. Peak age of incidence in our study population was 41.5 years.
2. Commonest predisposing factor for duodenal ulcer in our study was consumption of Spicy Food (65%) followed by Alcohol (64%) and smoking.
3. 79% of patients had either no signs of dehydration or mild dehydration.
4. All cases showed gas under diaphragm either on one or both sides.
5. Closure of the perforation was done with live omental patch.
6. 27 minor and 10 major complications were noted in our study.
7. Mortality rate in our study was 5%.

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