

Profile of Patients with Duodenal Ulcer Admitted for Surgery at a Tertiary Care Center

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Abstract

Introduction: Perforation of an ulcer is due to sudden sloughing off base of the ulcer due impairment of blood supply, which leads to gastric or duodenal contents leaking into peritoneal cavity, initiating an acute diffuse peritonitis. *Methodology:* This study comprises of 60 cases of duodenal ulcer perforation admitted in the Department of Surgery. Operative details included the site and nature of operation performed. Mortality was defined as death following surgical procedure. *Results:* All patients in the present study were subjected to plain X-ray abdomen in erect position. Out of 60 cases studied, 55 patients (91.67%) were found with pneumo-peritoneum. *Conclusion:* Duodenal perforation was common in lower socioeconomic group.

Keywords: Duodenal Ulcer; Perforation; Pneumoperitoneum.

Introduction

In the United States, approximately 4 million people have peptic ulcers (duodenal and gastric), and 350,000 new cases are diagnosed each year. Around 180,000 patients are hospitalized yearly, and about 5000 people die each year as a result of peptic ulcer disease [1]. Approximately, 5-10 percent of patients with duodenal ulcer develop perforations [2]. Mortality of perforated duodenal ulcer has declined from 40

percent to the present level of less than 10 percent, largely due to early diagnosis and treatment. In the duodenum, the ulcers that perforate are located anteriorly, and the aphorism that anterior ulcers perforate, posterior ones bleed is a relevant today as ever.

Perforation of an ulcer is due to sudden sloughing off base of the ulcer due impairment of blood supply, which leads to gastric or duodenal contents leaking into peritoneal cavity, initiating an acute diffuse peritonitis. About 5% of the time, a penetrating ulcer will penetrate through the duodenum into the free peritoneal cavity and elicit a chemical peritonitis. Followed to chemical peritonitis is bacterial contamination which can aggravate the inflammatory process and progress to the development of the intra-abdominal abscesses over the ensuing days or weeks. The most serious complications of the acute peritonitis are paralytic ileus and toxemia. Absorption of the bacterial endotoxins through the inflamed peritoneum causes endotoxaemia, which may also result into septicemia. The combination of endotoxic shock, fluid and electrolyte imbalance is the cause of high fatality rate in untreated acute bacterial peritonitis.

The patient can typically recall the exact time of onset of abdominal pain that is frequently accompanied by fever, tachycardia, dehydration, and ileus. Abdominal examination reveals exquisite tenderness, rigidity, and rebound. A hallmark of free perforation is the demonstration of free air underneath the diaphragm on an upright chest radiograph. This complication of duodenal ulcer disease represents a surgical emergency. After the diagnosis is made, operation is performed in an expeditious fashion following appropriate fluid resuscitation [3].

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Methodology

The diagnosis of duodenal ulcer perforation was that established by the admitting surgeon, based on clinical features and supposed by radiological evidence and confined at operation.

Surgery was defined as urgent less as 4 hours between admission and surgery, same day (4-24 hours) and delayed at a later time during the same admission. This study comprises of 60 cases of duodenal ulcer perforation admitted in the Department of Surgery. Operative details included the site and nature of operation performed. Mortality was defined as death following surgical procedure. Postoperative morbidity was defined in terms of duration of hospital stay and associated complications following surgery.

Exclusion Criteria

1. Cases of accidental duodenal perforation during laparotomy.
2. Cases of gastric antral perforation
3. Cases of traumatic duodenal perforation

Results

Table 1: Age distribution

Age (yrs)	No. of Cases	Percentage (%)
<19	2	3.33
20-29	13	21.67
30-39	12	20.00
40-49	15	25.00
50-59	9	15.00
>60	9	15.00
Total	60	100

Table 2: Table showing gender distribution

Gender	No. of cases	Percentage (%)
Male	57	95
Female	3	5
Total	60	100

Table 3: Socioeconomic status

	No. of Cases	Percentage%
Lower	39	65
Upper	21	35
Total	60	100

Table 4: History of peptic ulcers of patients with perforated duodenal ulcers

History	No. of Cases	Percentage (%)
Present	36	60
Absent	24	40
Total	60	100

Table 5: Presence of air under diaphragm in patients with perforated duodenal ulcers

	No. of Cases	Percentage (%)
Air Present	55	91.67
Air Absent	5	8.33
Total	60	100.00



Chart 1: Pie diagram showing personal habits of patients with perforated duodenal ulcers

Discussion

Duodenal ulcer is a type of peptic ulcer disease that distresses the lining of the duodenum. Duodenal perforation, complication of duodenal ulcer, is one of the commonest surgical emergencies requiring hospitalization and early management. Perforated duodenal ulcer remains a surgical emergency but nowadays it rarely results in death. The discussion is based on the analysis of data pertaining to 60 cases of perforated duodenal ulcers.

Age

The age of patients in this study is ranging from 18 to more than 60 years. The peak age incidence was between 40 and 49 years, but age is no bar for the perforation.

Table 6: Age Incidence

Author	Year	Peak age incidence (years)
Samuel J et al ⁴	1953	30-60
Debaley et al ⁵	1990	>50
M.C.Dandpat et al ⁶	1991	20-40
Ramesh C et al ⁷	1995	30-50
Hannah et al ⁸	2005	31-40
KalpeshJani et al ⁹	2006	30-50
Taylor ¹⁰		>50
Present study	2013	40-49

In the current study out of 60 cases, only 4 cases of females with perforated duodenal ulcers were observed. Our study found male predominance for

perforated duodenal ulcers which correlates to the reported observation. The very low incidence of female patients with duodenal ulcer perforation in comparison to male incidence may be due to great difference in habits, social, economical and cultural activities.

Table 7: Gender Incidence

	Year	Male : Female ratio
Paul. H. Jordan ¹¹	1995	26:1
Primrose N. John ¹²	2004	2:1
Rodney Maingot ¹³	1990	5:1
Present study	2013	19:1

Socioeconomic Status

Perforation due to duodenal ulcer was common in lower socioeconomic group. Out of 60 cases of perforated duodenal ulcers, 39 cases (65%) belonged to lower socioeconomic status. All patients in the present study were subjected to plain X-ray abdomen in erect position. Out of 60 cases studied, 55 patients (91.67%) were found with pneumo-peritoneum

Table 8: Presence of pneumoperitoneum

Study	Year	Pneumoperitoneum
Shaffer study ¹⁴	1992	70%
Present study	2013	91.67%

Conclusion

- Duodenal ulcer perforation is one of the most common acute abdominal emergencies.
- Duodenal ulcer perforation was more common in the age group of 40-49 years.
- Male: Female ratio was 19:1.

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