

Research Article



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EVALUATING THE CHARACTERISTICS OF PATIENTS WITH DUODENAL ULCERS WHO ARE ADMITTED TO INDIAN HEALTHCARE CENTER FOR SURGERY

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ABSTRACT

Background: It is crucial to investigate this matter because perforation of duodenal ulcers is typically identified by the abrupt shedding of the ulcer's base, which is ascribed to a compromised blood supply that causes the duodenum or stomach contents to leak into the peritoneal cavity and cause an acute diffuse peritonitis.

Aim: The purpose of this study was to evaluate the characteristics of patients with duodenal ulcers who were admitted to Indian Healthcare Center for surgery.

Methods: During the specified study period, 120 patients with duodenal ulcer perforation who were admitted to the Institute were evaluated for this investigation. Operative information, including the kind and location of the surgery, was evaluated for each individual. Death following surgery was considered mortality.

Results: The study's findings indicated that, out of all the participants evaluated, the diagnosis was made using a simple abdominal X-ray while the participant was upright. Pneumo-peritoneum was discovered in 110 (91.67%) of the 120 study participants who were evaluated for the research.

Conclusion: According to the current study, duodenal perforation is a common finding among study participants, with a greater prevalence observed in those from lower socioeconomic groups.

Keywords: Duodenal Ulcer, Perforation, Pneumo-peritoneum, ulcers

INTRODUCTION

A prevalent condition that has been documented worldwide, especially in India, is peptic ulcers. 350,000 new cases of peptic ulcers (gastric and duodenal ulcers) are identified annually in the United States, where about 4 million people suffer from them. Each year, 180,000 subjects are admitted to hospitals and over 5000 subjects pass away from peptic ulcers. Five to ten percent of those with peptic ulcers experience duodenal ulcer perforation.¹

Due to several medical advancements, early detection, and effective treatment, the death rates linked to perforated duodenal ulcers have dropped from 40% to less than 10% at this time. Among duodenal ulcers, the perforated ulcers are typically found anteriorly, and the adage that states that anterior ulcers perforate is always applicable to posterior ulcer hemorrhage.²

Acute diffuse peritonitis is often caused by ulcer perforation, which is the abrupt shedding of the ulcer's base due to a compromised blood supply. This causes the contents of the stomach or duodenum to seep into the peritoneal cavity. Chemical peritonitis is the outcome of penetrating ulcers that enter the peritoneal cavity through the duodenum in around 5% of cases. Following chemical peritonitis, bacterial infection exacerbates the inflammatory response and may result in the formation of intraabdominal abscesses in the days or weeks that follow.³

Paralytic ileus and toxemia are two of the most dangerous side effects of acute peritonitis. The absorption of bacterial endotoxins through an inflamed peritoneum causes endotoxemia, which can lead to septicemia. In untreated instances of bacterial peritonitis, the high mortality rate leads to endotoxic shock and combined electrolyte and fluid imbalance. The exact date of the stomach discomfort, which is frequently accompanied by fever, tachycardia, dehydration, and ileus, is commonly recalled by the subjects. An examination of the abdomen reveals discomfort, stiffness, and rebound. In an upright chest radiograph, open air under the diaphragm is a characteristic of free perforation.⁴

A complication from a duodenal ulcer is a medical emergency. Following a diagnosis and appropriate fluid resuscitation, surgery is performed. The purpose of this study was to evaluate the characteristics of patients with duodenal ulcers who were admitted to in the Department of General Surgery of Indian Healthcare Center for surgery.

MATERIALS AND METHODS

The purpose of this study was to evaluate the characteristics of patients with duodenal ulcers who were admitted to Indian Healthcare Center for surgery. The research participants were drawn from the Institute's Department of pathology. Before beginning the study, all participants and school officials gave their verbal and written informed permission.

Every patient that was reported to the Institute with a duodenal ulcer perforation throughout the specified research period was evaluated. The surgeon diagnosed the duodenal ulcer based on the patient's clinical characteristics, his or her experience, radiographic data, and verified surgical findings. Cases of gastric antral perforation, traumatic duodenal perforation, and unintentional duodenal perforation during laparotomy were excluded from the research. The procedure was deemed urgent if it was completed within four hours of the patient's admittance, or between four to twenty-four hours of the same day. If it was performed later on the same day, it was deemed delayed. 120 patients with duodenal ulcer perforation who were hospitalized to the Institute's Department of Surgery were included in the research.

In all 120 subjects, operative details were assessed which included the nature and site of the surgery performed. Mortality in the study subjects was defined as death after the surgical procedure. Postoperative morbidity was taken as associated complications after surgery and duration of hospital stay.

RESULTS

The purpose of the current study was to evaluate the characteristics of patients with duodenal ulcers who were admitted to Indian Healthcare Center for surgery. 120 patients with duodenal ulcer perforation who were hospitalized to the Institute throughout the research period were evaluated in this study. Operative data, such as the kind and location of the operation performed, were evaluated for each individual. 25% (n=30) of the research participants were in the 40–49 age range, followed by 21.66% (n=26) in the 20–29 age range, 20% (n=24) in the 30–39 age range, 15% (n=18) in the 50–59 and >60 age range, and at least 3.33% (n=4) in the <19 age range. In the current study, there were 5% (n=6) females and 95% (n=114) men.

35% (n=42) of the participants were from the upper class, and 65% (n=78) were from the lower class (Table 1). Sixty percent (n=72) of the 120 participants evaluated had a history of peptic ulcers in relation to perforated duodenal ulcers, whereas forty percent (n=48) did not (Table 2).

Regarding the existence of air beneath the diaphragm in patients with perforated duodenal ulcers, it was observed that, out of the 120 participants evaluated in the research, 91.67% (n=110) had air beneath their diaphragm, whereas 8.33% (n=10) did not (Table 3).

Five percent of the research participants had no personal habits, according to the assessment of the habits that were present in the participants. Of the study participants, 40% smoked, 30% drank alcohol, and 25% smoked and drank alcohol.

DISCUSSION

The current study evaluated 120 patients who were hospitalized to the Institute during the specified study period and had duodenal ulcer perforation. Operative information was evaluated for each individual, including the kind and location of the surgery. In terms of age distribution, the bulk of research participants were between the ages of 40 and 49 (25%; n = 30), followed by 20 to 29 (21.66%; n = 26) in 30–39, 20% (n = 24) in 30–39, 15% (n = 18) in 50–59 and >60, and at least 3.33% (n = 4) in <19 years. The current study included 5% (n=6) female participants and 95% (n=114) male participants.

There were 65% (n=78) subjects from lower class and 35% (n=42) subjects from upper class. These findings were similar to those of earlier research by Hannan A et al. (2005) and Jani et al. (2005), who evaluated participants with duodenal ulcer perforation and demographics similar to the current study in their separate investigations.

According to research findings, of the 120 participants evaluated overall, 60% (n=72) had a history of peptic ulcers, whereas 40% (n=48) did not. This information relates to the evaluation of peptic ulcer history in subjects with perforated duodenal ulcers. These findings were in line with those of Gupta BS et al. (2003) and Testini M et al. (2003), who found

that the peptic ulcer history of people with perforated duodenal ulcers was similar to what the authors of those studies described.

Of the 120 participants evaluated for the research, 91.67% (n=110) had air under their diaphragm, whereas 8.33% (n=10) did not. This information relates to the assessment of air presence beneath the diaphragm in subjects with perforated duodenal ulcers. These results were consistent with the findings of Chalya P L et al. (2011) and Lee FYJ et al. (2001), who found similar results for air presence under the diaphragm in persons with perforated duodenal ulcers as the current investigation. The findings of the study also revealed that, when it came to the evaluation of the study participants' personal habits, 5% of them found none.

Of the study participants, 40% smoked, 30% drank alcohol, and 25% smoked and drank alcohol. The findings of the current study were consistent with those of Ersumo T et al. (2011) in 2005 and Gürleyik E et al. (2003), who reported personal behaviors in their study participants that were similar to those of the authors.

CONCLUSION

Notwithstanding its limitations, the current study comes to the conclusion that duodenal perforation is a frequent finding among study participants, with a greater prevalence observed in those from lower socioeconomic groups. Nevertheless, more longitudinal research with a bigger sample size and a more thorough multi-institutional evaluation are required to draw a firm conclusion.

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S. No	Characteristics	Number (n)	Percentage (%)
1.	Age range (years)		
a)	<19	4	3.33
b)	20-29	26	21.66
c)	30-39	24	20
d)	40-49	30	25
e)	50-59	18	15
f)	>60	18	15

2.	Gender		
a)	Male	114	95
b)	Female	6	5
3.	Socioeconomic status		
a)	Upper class	42	35
b)	Lower class	78	65

Table 1: Demographic data in study subjects

S. No	History	Number (n)	Percentage (%)
1.	Present	72	60
2.	Absent	48	40
3.	Total	120	100

Table 2: Peptic ulcer history in subjects with perforated duodenal ulcers

S. No		Number (n)	Percentage (%)
1.	Air present	110	91.67
2.	Air absent	10	8.33
3.	Total	120	100

Table 3: Air presence under diaphragm in subjects with perforated duodenal ulcers