Complications of Peptic Ulcer Perforation: A Clinical Case Study

Dr. Ajay Kumar Singh
M.S. (General Surgery), Assistant Professor, Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar.

Research Article

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ABSTRACT :
Duodenal ulcer perforation is the second most common abdominal emergency in our study. After invention of the H2 blockers and proton pump inhibitors the role of elective surgery for duodenal ulcer has been drastically decreasing, but the incidence of perforation is not much changing.
All the patients are informed consents. The 80 peptic ulcer disease patients were enrolled in to the study. The age group of the patients are from 20-70 years. The patients visited to Out Patient Department (OPD) and in-patient department (IPD) of a tertiary care hospital in North India were considered in the study. All the patient's clinical history were collected. Also the complete physical examination was done.
The incidence of perforation is more in middle aged males. This trend can be attributed to their increased predisposition to smoking and alcohol. It is noted that post operative pulmonary complications and wound infection are more in the alcoholics and smokers.

Keywords: Peptic Ulcer Perforation, peptic ulcer, duodenal ulcer, etc

INTRODUCTION:

Peptic ulcer disease refers to painful sores or ulcers in the lining of the stomach or first part of the small intestine, called the duodenum.
Peptic ulcer disease (PUD), also known as a peptic ulcer or stomach ulcer, is a break in the lining of the stomach, first part of the small intestine, or occasionally the lower esophagus [1][2]. An ulcer in the stomach is known as a gastric ulcer while that in the first part of the intestines is known as a duodenal ulcer. The most common symptoms are waking at night with upper abdominal pain or upper abdominal pain that improves with eating. The pain is often described as a burning or dull ache. Other symptoms include belching, vomiting, weight loss, or poor appetite. About a third of older people have no symptoms [1]. Complications may include bleeding, perforation, and blockage of the stomach. Bleeding occurs in as many as 15% of people [3].
Peptic ulcers are present in around 4% of the population. [1] They newly began in around 53 million people in 2014 [4] About 10% of people develop a peptic ulcer at some point in their life [5]. They resulted in 301,000 deaths in 2013 down from 327,000 deaths in 1990 [6]. The first description of a perforated peptic ulcer was in 1670 in Princess Henrietta of England [3] H. pylori was first identified as causing peptic ulcers by Barry Marshall and Robin Warren in the late 20th century,[7] a discovery for which they received the Nobel Prize in 2005.[8]
No single cause has been found for ulcers. However, it is now clear that an ulcer is the end result of an imbalance between digestive fluids in the stomach and duodenum. Most ulcers are caused by an infection with a type of bacteria called Helicobacter pylori (H. pylori).
Factors that can increase your risk for ulcers include:

- Use of painkillers called nonsteroidal anti-inflammatory drugs (NSAIDs), such as aspirin, naproxen (Aleve, Anaprox, Naprosyn, and others), ibuprofen (Motrin, Advil, some types of Midol, and others), and many others available by prescription; even safety-coated aspirin and aspirin in powered form can frequently cause ulcers.
- Excess acid production from gastrinomas, tumors of the acid producing cells of the stomach that increases acid output
- Excessive drinking of alcohol
- Smoking or chewing tobacco
- Serious illness
- Radiation treatment to the area

An ulcer may or may not have symptoms. When symptoms occur, they may include:
A gnawing or burning pain in the middle or upper stomach between meals or at night

- Bloating
- Heartburn
- Nausea or vomiting

In severe cases, symptoms can include:

- Dark or black stool (due to bleeding)
- Vomiting blood (that can look like "coffee-grounds")
- Weight loss
- Severe pain in the mid to upper abdomen

Though ulcers often heal on their own, you shouldn't ignore their warning signs. If not properly treated, ulcers can

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***Corresponding author:**
Dr. Ajay Kumar Singh
Assistant Professor, Lord Buddha Koshi Medical College and Hospital, Saharsa, Bihar.

lead to serious health problems, including:

- Bleeding
- Perforation (a hole through the wall of the stomach)
- Gastric outlet obstruction from swelling or scarring that blocks the passageway leading from the stomach to the small intestine

Taking NSAIDs can lead to an ulcer without any warning. The risk is especially concerning for the elderly and for those with a prior history of having peptic ulcer disease.

Following are the conditions in which probability is more

You may be more likely to develop ulcers if you:

- Are infected with the H. pylori bacterium
- Take NSAIDs such as aspirin, ibuprofen, or naproxen
- Have a family history of ulcers
- Have another illness such as liver, kidney, or lung disease
- Drink alcohol regularly
- Are age 50 or older

The pathological findings are the important sources of the information of the ulcerative diseases. The endocrinologist studying abnormal studying abnormal patterns of both gastric production and the hormonal control of gastric secretion of peptic ulcer have made important contributions [9-11].

A perforated ulcer, is a condition where an untreated ulcer can burn through the wall of the stomach (or other areas of the gastrointestinal tract), allowing digestive juices and food to leach into the abdominal cavity. Treatment generally requires immediate surgery.[1] The ulcer is known initially as a peptic ulcer before the ulcer burns through the full thickness of the stomach or duodenal wall. A diagnosis is made by taking an erect abdominal/chest X-ray (seeking air under the diaphragm). This is in fact one of the very few occasions in modern times where surgery is undertaken to treat an ulcer.[2] Many of the perforated ulcers have been attributed to the bacterium Helicobacter pylori. [3] The incidence of perforated ulcer is steadily declining, though there are still incidents where it occurs.[4] Causes include smoking and non-steroidal anti-inflammatory drugs (NSAIDs).[4] A perforated ulcer can be grouped into a stercoral perforation which involves a number of different things that causes perforation of the intestine wall.

The study had planned with the following purpose:

- To study the incidence of duodenal perforation in surgical patients
- To know the course of treatment
- To study the morbidity and mortality related with the treatment

Materials & Methodology [12]:

All the patients are informed consents. The 80 peptic ulcer disease patients were enrolled in to the study. The age group of the patients are from 20-70 years. The patients visited to Out Patient Department (OPD) and in-patient department (IPD) of a tertiary care hospital in North India were considered in the study. All the patient's clinical history were collected. Also the complete physical examination was done.

In these entire cases time interval between perforation and surgery was noted. During operation amount of peritoneal fluid and its character was noted. Site, size of perforation, duodenal scarring and fibrosis were noted.

In the post-operative period the patients were observed with special reference to the time of oral intake, number of postoperative days and the type of complication were recorded.

Results & Discussion:

The data obtained from the 80 patients were given as belows.

The table 1 suggest that the maximum number of patients having perforation of ulcers are from 31-40 year. After that predominant in age 41-50 years. In the study of A.K Dev and S. Paul [13] peak incidence of perforation of duodenal ulcer noted in the age group of 46-55 in another study by P.C. Sood and R.L Gupta [14] peak incidence was noted in the age group of 31 to 40.

Table 1 : Age & Ulcer Type

Age in Years	Duodenal Ulcer
20-30 years	12
31-40 years	32
41-50 years	18
51-60 years	10
61-70 years	8
Total	80

Table 2 indicated the number of cases of perforation of ulcers with the present study.

Table 2: Previous Study & number of cases.

Author	Total No. of Cases
C.S.P.Rao G.G.H.KKD	100
P.C.Sood R.L.Gupta	112
Present study	80

Table 3 showed the history of the ulcers. 45 patints showed the positive about previous history. In the study of P.C. Sood and R.L Gupta [14] about 78% of patients were having previous ulcer history. V.Mourougayan [15] noticed 76% of patients having ulcer history. The present indicates that 67% of the patients had the previous history.

Table 3 History of dyspepsia / peptic ulcer disease

History of dyspepsia / peptic ulcer disease	No. of Cases
Positive	54
Negative	26

Table 4 indicates that the alcoholism is the major problem of the perforation. The case study data includes 17 patients of smokers, 26 patients of alcoholism and 16 patients does both.

Table 4: Smoking & Alcoholism History

Habits	No. of Cases
Smokers	17
Alcoholics	26
Both	16
None of Above	21
Total	80

Table 5 indicates the number of patients and complications

occurred. 42 patients were having wound infection after surgery. 18 patients are having chest infection, 11 patients are seen with abscess and 9 patients are having Duodenal Fistulae.

Table 5 : Complications

Complications	No. of Cases
Wound infection	42
Chest Infection	18
Abscess (pelvic + subphrenic)	11
Duodenal Fistulae	9
Total	80

Table 6 indicates that there are 3 cases of mortality after non operative procedure. The factors that influence mortality is persistent preoperative shock, concurrent medical illness, old age and long-time interval between the onset and surgery. The mortality was high in those patients.

Table 6: Method of Operation & No. of Patients

Method of Operation	No. of patients	mortality
Simple closure with omental graft	48	Nil
VIL TV + GJ	13	Nil
Non Operative of conservative	19	3
Total	80	

Conclusion:

Perforation of the duodenal ulcer is one of the common and lethal complications of the duodenal ulcer. Unless the prompt diagnosis is made and early active surgical management is done the mortality is very high, it is the commonest cause of death resulting from surgical abdominal emergency next to intestinal obstruction.

80 cases were studied in this series. Perforation most commonly occurred in the age group of 31 – 40 yrs. Perforation was more common in winter season. The present indicates that 67% of the patients had the previous history. Smoking as well as Alcohol consumption are the major reasons of the perforation.

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