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# Simultaneous Occurrence of Perforated Peptic Ulcer and Acute Pancreatitis: A Case Report

Dorsa Shirini[1], Hossein Torabi[2], Kasra Shirini[3], and Rona Ghaffari[2]

[1]Shahid Beheshti University of Medical Sciences
[2]Guilan University of Medical Sciences
[3]Iran University of Medical Sciences

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**Abstract**

Acute abdomen is a life-threatening condition caused by different incidences such as perforated peptic ulcers and acute appendicitis. This critical condition needs urgent investigation and treatment. The main diagnostic ways for acute pancreatitis are clinical examination and findings. It is essential to consider these two conditions in a patient simultaneously.

**Introduction:**

Acute abdomen is an urgent situation that can be caused by an incidence of conditions like perforated peptic ulcer and acute pancreatitis [1,2]. As a result of the importance of this condition, it needs rapid intervention and treatment [1]. Perforation of the peptic ulcer (PPU), which is an insultaition to the mucosa of the upper tract of the digestive system, is the second most common complication of the disease, with the incidence 4 to 14 cases per 100,000 individuals [1,3,4]. Acute pancreatitis (AP) is also a common cause of admissions to the emergency ward, rising in incidence through the last years,that ranges from 13 to 45 per 100,000 population-years [5,6]. Although many underlying risk factors can lead to AP, cholelithiasis and massive alcohol consumption are two main causes [7]. This case presents an individual who was admitted to the hospital complaining of acute abdominal pain, and after further investigations, he was diagnosed with concurrent perforated peptic ulcer and acute pancreatitis.

**Case Presentation:**

The patient was a 71-year-old man who presented to an educational hospital, Poursina Medical Center, in Rasht, Guilan, Iran, in February 2022, with the chief complaint of abdominal pain. The pain started the day before. It was periumbilical, was not positional, and was not contributed to the feeding or defecation. In the beginning, it was intermittent, and then it developed to be persistent. He did not give a history of nausea and vomiting. The patient had a past medical history of hypertension (HTN) and an old cerebrovascular accident (CVA). His past drug history was unrevealing. On arrival, he had normal vital signs: a pulse rate (PR) of 78, respiratory rate (RR) of 13, blood pressure (BP) of 100/40, and he was not febrile (Temperature (T)= 37.2). On physical examination, the inspection was normal, the bowel sounds were decreased on auscultation, and there was a generalized tenderness in palpitation, with the dominance of the epigastric area. A positive rebound test was also detected on the epigastric area, which favored the acute abdomen. The patient was asked to do an up-right chest and supine abdominal X-ray, which didn't show any specific changes, as can be seen in figures 1and 2. The abdominal ultrasonography was also done. It revealed free fluid in the pre-splenic and sub hepatic spaces and Morrison's pouch. A thorough blood exam was done on the arrival date (Table 1). The rise in the level of pancreatic enzymes (amylase=2320 and lipase=1854), c-reactive protein (CRP=72), and creatine phosphokinase (CPK=631) all were in favor of the incidence of

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acute pancreatitis. Due to the positive acute abdomen, generalized tenderness in physical examination, the patient underwent laparotomy. A sealed-off, 1cm*1cm pre pyloric perforated peptic ulcer was seen with localized debris and free fluid in the epigastric area. Debris was cleaned out, gastrorrahphy and omental patch were done, and the abdominal incision was closed. The patient was hospitalized for ten days. 4 days after the surgery, he was NPO and treated with intravenous liquids. After that, he started to eat food and got PO, and was under control. After five days, due to the decreasing pattern of pancreatic enzymes, as can be seen in table 2, and the stable clinical condition of the patient, he got discharged.

**Discussion:**

Acute abdomen is a critical condition caused by various underlying causes such as infection, inflammation, or vascular problems [1]. The condition requires an urgent investigation, including a thorough examination and treatment based on the physical examination and clinical findings [1]. A variety of diseases, including perforated peptic ulcer (PPU) and acute pancreatitis (AP), can contribute to this condition[2].

Peptic ulcer disease (PUD), which is usually defined as insulation to the mucosa of the upper digestive tract, most commonly happens in the stomach and the duodenum [3,8]. H.Pylori infection and NSAID consumption are two significant factors leading to PUD [3]. Perforation is the second most common complication of the PUD, which happens in 4 to 14 cases per 100,000 individuals, and the risk increases with age [3]. The patient usually presents with the complaint of a sudden severe epigastric pain [3]. PPU is divided into four groups based on its location: 1. in the antrum, near the lesser curvature, 2. combined gastric and duodenal ulcer, 3. prepyloric ulcer, 4. ulcer in the proximal stomach or cardia [9]. The evaluation consists of a thorough blood test and imaging studies, including an abdominal and chest x-ray [3]. Although free air under the diaphragm is the most common finding in PPU, some studies have shown that it may be absent in some patients based on the condition of the ulcer [10]. The main treatment for PUD is surgical operation [3].

Moreover, AP is an inflammation of the pancreas frequently caused by bile stones or massive consumption of alcohol, which happens in 13 to 45 per 100,000 population years [5,6]. It is divided into three groups based on the severity of the disease: 1. Mild: no organ failure, 2. Moderate: transient organ failure which resolves in less than 48 hours, and 3. Severe: persistent organ failure that remains more than 48 hours [11]. The most common clinical symptom is epigastric pain which radiates to the back [12]. A rigorous blood test (including blood count, lipase, C-reactive protein, glucose, calcium, and liver and cholestasis enzymes) is mandatory for the diagnosis [12]. Imaging tools like CT scans are not usually recommended in patients with typical clinical manifestations and abnormal laboratory tests [13]. The primary treatment strategy is fluid resuscitation between 150 and 250 mL/h in the first 24–48 h, with Ringer lactate as the best choice [12]. It is also recommended that oral feeding be encouraged in the first days of admission if possible [14].

In this case report, a 71-year-old patient presented to the hospital with the chief complaint of sudden epigastric pain from last night. Although the patient did not have free air under the diaphragm, he underwent surgery due to the positive acute abdomen on physical examination. As the PPU was small and sealed off, the absence of free air on the Xray can be justified. All the debris was washed out with normal saline, and the perforation was fixed with the gastrorrahphy and the omental patch. The patient was hospitalized for ten days and treated for simultaneous pancreatitis with intravenous fluid.

Due to the similar clinical presentation of PPU and AP and the absence of free air in the X-ray of some patients, which is strongly in favor of PPU, it is crucial to take both diseases into account for differential diagnosis of the underlying cause the acute abdomen. Physical examination and thorough laboratory tests play an essential role in the diagnosis.

**Conclusion:**

Acute abdomen is an urgent condition caused by different underlying conditions like PPU or AP. Because of the same clinical presentation of both diseases, it is crucial to not only focus on one condition. Rigorous history, detailed physical examination, and thorough laboratory tests are needed for the exact approach to the patient. In addition, it must be remembered that all these conditions can occur simultaneously, even if

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they are rare.

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Figures:

Figure1. Upright Chest Xray

Figure2. Supine Abdominal Xray

Tables:

Table1.

**Blood Test**

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| | | |
|---|---|---|
| **Hematology** | WBC | 6500 |
| | Neutrophil | 90 |
| | Lymphocyte | 8 |
| | RBC | 4.01 |
| | HB | 11.1 |
| | Plt | 269000 |
| **Biochemistry** | BS | 130 |
| | BUN | 35 |
| | Cr | 2.6 |
| | Alt | 18 |
| | Ast | 17 |
| | Alp | 168 |
| | Total Bilirubin | 2.0 |
| | Direct Bilirubin | 0.5 |
| | Amylase | 2320 |
| | Lipase | 1854 |
| | Na | 140 |
| | K | 4.8 |
| | Ca | 9.7 |
| | Ph | 3.0 |
| | Mg | 2.6 |
| **VBG** | PH | 7.31 |
| | PCO2 | 33.2 |
| | HCO3 | 16.2 |
| | BE | -9.1 |
| **Serology** | CRP | 72 |
| **Coagulation** | PT | 15 |
| | PTT | 38 |
| | INR | 1.3 |

Table2.

**Blood Test**

| | | |
|---|---|---|
| **Hematology** | WBC | 10000 |
| | Neutrophil | 40 |
| | Lymphocyte | 58 |
| | RBC | 3.49 |
| | HB | 9.6 |
| | Plt | 401000 |
| **Biochemistry** | BS | 102 |
| | BUN | 28 |
| | Cr | 1.9 |
| | Alt | 20 |
| | Ast | 21 |
| | Alp | 395 |
| | Total Bilirubin | 0.6 |
| | Direct Bilirubin | 0.2 |
| | Amylase | 530 |
| | Lipase | 398 |

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| | | |
|---|---|---|
| | Na | 152 |
| | K | 3.6 |
| | Ca | 8.1 |
| | Ph | 2.8 |
| | Mg | 2.3 |
| **Coagulation** | PT | 13 |
| | PTT | 31 |
| | INR | 1.0 |

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