

A Perforated Duodenal Ulcer after Using of Methamphetamine and Methadone

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ABSTRACT

Background: Acute poisonings with corrosive substances lead to serious peptic ulcer disease despite of the major improvements in both diagnostic and therapeutic strategies; perforated peptic ulcer is still the most common cause of gastrointestinal perforation and the second most common complication of the peptic ulcer. Duodenal ulcers tend to be the posterior penetrating and in pancreas can cause pancreatitis whereas gastric ulcers are penetrating to left liver's lobe.

Case Report: We report the case of a 23-year-old patient with a history of chronic consumption of methamphetamine and methadone referred to emergency state with epigastric pain. He consumed methamphetamine following about 10cc methadone, then amount of methadone syrup yesterday. When he was admitted, he was awake, alert, agitated and restless; also he was feeling abdominal pain. In examination, we found out generalized abdominal pain with guarding and rebound tenderness. Pain is continuously and referred to back and the testis. The pupils had mild mydriasis and reactive to light. Free subdiaphragmatic air was seen in the right subphrenic area in upright chest x-Ray. It didn't administrate to activated charcoal due to perforation detection and immediately he was transferred to the operating room for diagnosis an acute abdomen. Purulent discharge was seen between the left lobe of liver and gastric as well as adhesion of omentum. Then, post pyloric perforation was seen after release of adhesion that *bile discharge excreted*. We treated him with essential treatment.

Conclusion: Here, we report a patient with a history of addiction to methamphetamine and methadone and perforated duodenal ulcer after took acute overdose of these substances. As a result of that perforation opened and postulated to the left lobe of liver, thus he was taken to the operating room. This patient had perforated duodenal ulcer after acute overdose of methamphetamine and also this ulcer opened atypically to the left lobe of liver. Furthermore, investigation on the effects of amphetamine and methamphetamine on peptic ulcer and its effect on the perforation is recommended.

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► *Implication for health policy/practice/research/medical education:* A Perforated Duodenal Ulcer after Using of Methamphetamine and Methadone

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1. Introduction:

Despite recent advances in diagnostic and therapeutic strategies in the peptic ulcer, perforated peptic ulcer is still the main cause of gastrointestinal perforation and the second common complication of the peptic ulcer (1, 2).

Perforated peptic ulcer was diagnosed by sudden abdominal pain, in the field of known peptic ulcer disease (2, 3).

Symptoms may occur atypical with a lower incidence due to comorbidity (4) or concurrent treatment (5). DU tend to penetrate the anterior aspect of the pancreas which can cause pancreatitis, whereas GU penetrates the left lobe of the liver (2). In the United States at less than 30% of patients with dyspepsia, peptic ulcer by the endoscopy to be discovered. However, endoscopy in 40% of patients with typical symptoms of ulcers, ulcers span and the Gastrodeodenitis is seen in 40% (2).

We introduced a 23 year old Afghan man with a history of chronic use of methadone and methamphetamine that after methamphetamine and methadone overdose was happened acute duodenal perforation to penetrate the left lobe of the liver.

2. Case Report:

The patient is a 23-year-old Afghan with 2-year history of methamphetamine as well as a history of methadone addiction refers to in the emergency department at 1am due to epigastric pain. The patient's history revealed epigastric pain for 2 years and so far never had visited a doctor for

diagnosis and treatment. He had not history of fever, melena and sweat. As always, the patient for epigastric pain relief consumed 10cc methadone syrup at 3 pm. But due to lack of improvement in epigastric pain, methadone syrup was used again at 5 pm. It was not heal the patient's pain despite taking methadone, at this time, and due to the severity of pain at 1 am, he referred to the emergency room. On admission, the patient was awake and alert, agitation and restlessness, and he complained of abdominal pain. Examinations are shown in table 1. Normal bowel sound, normal heart auscultation and clear lung auscultation was heard.

Pupils had mild mydriasis (about 6 millimeters) and light reactive. The results of laboratory test are shown in table 2. White blood cell count increases and arterial blood gas was normal, Electrocardiography was in sinus rhythm and no tachycardia or long QT was diagnosed. Kidneys abdominal sonography was performed in the emergency department Mild free fluid in the pelvis area and Morrison (liquid approximate thickness of about 1cm). Liver, bile ducts and gallbladder were normal and hadn't stones. The kidneys were normal in size and echo, stone and hydronephrosis wasn't evident. Pathologic finding in spleen and para-aortic wasn't seen. Upright chest X-ray was performed in the emergency room.

The air was seen in the right subphrenic (Fig.1) except free air in right subphrenic there is no abnormality in upright and supine abdominal radiography (Fig.2) Patient was the withhold oral food (Nil per os) Naso Gastric tube was inserted for drainage of gastric contents to the patient. Ceftriaxone IV, Metronidazole IV,

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Table 1: Physical examination on admission

Blood pressure	130/85 millimeters mercury (without orthostatic hypotension)
Pals rate	82/minute
respiratory rate	18/minute
o2 sat	92%

Table 2: Laboratory tests on admission

white blood cell count	11400 cubic millimeter
Hemoglobin	13.8 gram/deciliter
Blood urea nitrogen	14
Creatinine	1 milligram /deciliter
PH	7.42
HCO ₃	19 mmol/lit
Pressure of CO ₂	38

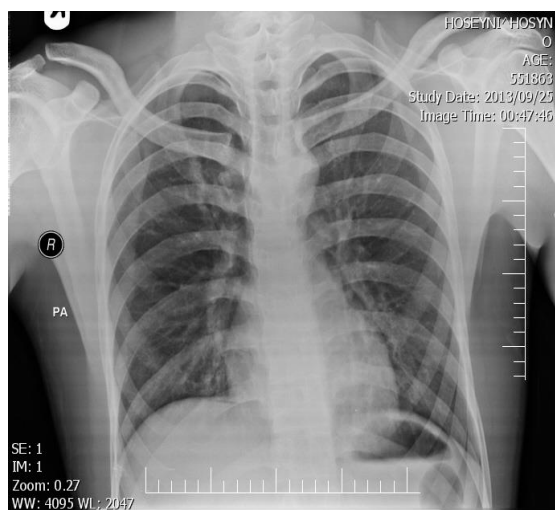


Fig. 1. Upright chest radiography. There is free subdiaphragmatic air.

Ranitidine IV began immediately. Activated charcoal was not administered due to perforation detection. Sympathomimetic symptom by methamphetamine was dominated but did not require treatment due to mild symptoms (11). Opioid antidote (Naloxone) in the form of apnea (when

necessary pro re nata) was prescribed for the patient (11). With consultation, diagnosis of acute abdomen was performed and patient was transferred immediately to the operating room. The patient underwent a laparotomy under general anesthesia. Purulent discharge between the left lobe of the liver and stomach were seen also, omental adhesion was observed after the release of adhesions post pyloric perforation. It was out of the bile secretion. The abdominal cavity was washed and suture perforation was made. After the visit, the patient improved dramatically and no symptoms suggest toxicity.

3. Discussion:

Despite recent advances in diagnostic and therapeutic strategies in peptic ulcer (4), perforated peptic ulcer is still the main cause of gastrointestinal perforation and the second common complication of peptic ulcer (2,3).



Fig. 2. Abdominal plain X-ray films obtained in the upright (A) and supine position (B) (A) a air-fluid level can be seen in the right subphrenic space.

Abdominal pain is the most common symptom in duodenal ulcer and gastric ulcer. About 10% of patients may refer to mucosal disease caused nonsteroidal anti-inflammatory drugs that can be without any previous signs of complications (bleeding, perforation and obstruction). Despite the weak correlation, careful history and physical examination of the major components are in dealing with patients suspected of peptic ulcers. Grab epigastric pain or burning feeling can exist duodenal ulcer and gastric ulcer. Feeling the pain as well as ambiguous pain or hunger can be described.

In the United States at less than 30% of patients with dyspepsia, peptic ulcer be discovered at endoscopy. However, endoscopy in 40% of patients with typical symptoms of ulcers, ulcers span is seen in 40% of the gastroduodenitis. Mechanism of pain in ulcer patients is unknown. Several possible justification activities in this area are include chemical receptors in the duodenum by acid, increased sensitivity to bile acids and pepsin, duodenal or gastric motility changes(2). The effects of amphetamine and methamphetamine on the stomach are controversial. In a study, Sandoret *al* conducted in 2006 in Romania amphetamine dose-dependent protective

effect on the stomach (6). Haffeyet *al* in a study conducted in 2009 showed a protective effect of proton pump inhibitor cannot be amphetamines ulcerative(7). Sudden onset of severe and generalized abdominal pain, represents ulcer perforation, and tarry stools, vomiting of coffee ground appearance is indicative of the presence of bleeding. Perforation after gastrointestinal bleeding is second most common ulcer's complication. In 6-7% of patients have been reported Peptic Ulcer Disease. It seems like a bleeding incidence of perforation rise in the elderly because increase use of nonsteroidal anti-inflammatory drugs (2). In our patient, the concurrency taking methamphetamine and epigastric pain and due to lack of peptic ulcer's risk factor and being young of him, his epigastric pain could be related to the use of methamphetamine. Penetration is a form of perforation which is wound tunnel around. Duodenal ulcers tend to penetrate the anterior aspect of the pancreas causing pancreatitis whereas gastric ulcers can penetrate the left lobe of liver(2). An atypical presentation of opening of the left lobe of the liver with much pus was seen in our duodenal ulcer patient. Smoking has been implicated in the pathogenesis of Peptic Ulcer Disease. Not only it is known that smokers more than nonsmokers are experiencing are

scars but also seems to reduce the speed of the restoration of smoking can disrupt the hive response to treatment and increases wound-related complications such as perforation. The mechanism responsible for the increased risk in smokers is unknown. This theory are changes in the gastric emptying, reducing the production of the proximal part of the duodenum bicarbonate, increased risk of Helicobacter pylori infection and the production of harmful free radicals caused by smoking in the mucus membrane. The secretion of acid is natural in smokers. Despite the above theory, there is not proven a single mechanism for susceptibility to smoking-induced peptic ulcer disease. The role of genetic predisposition has also been considered in the injury. First-degree relatives with duodenal ulcer are three times more at risk of ulcer. However, the potential role of H. pylori infection is important in the contact. The increased frequency of blood group O and status nonsecretor status as risk factors has been implicated in susceptibility to peptic ulcer. It has been thought that Peptic Ulcer caused by mental stress, but the studies to check the role of psychological factors in the action have come to conflicting results in the pathogenesis of Peptic Ulcer Disease. It is believed that diet plays a role in peptic disease. Some foods can make dyspepsia but no convincing correlation between the formations of scars and do not show any special dietary. This case also applies to drinks containing alcohol and caffeine (2). Certain chronic diseases are associated with a Peptic Ulcer Disease (systemic mastocytosis, chronic lung disease, chronic renal failure, cirrhosis, kidney stones α -antitrypsin deficiency). Disease possible associations are Hyperparathyroidism Peptic Ulcer Disease, coronary artery disease, polycythemia vera and chronic pancreatitis. Peptic Ulcer Disease Several factors are involved in the pathogenesis that are two main of H. pylori infection and the use of nonsteroidal anti-

inflammatory drugs. Peptic Ulcer Disease rise related to H. pylori or use of nonsteroidal anti-inflammatory drugs. Regardless of the factors an excitable or harmful, peptic ulcer is the result of an imbalance between defense mucus or its restoration and aggressive factors and stomach acid created the basic role in mucous damage(2). Computed tomography SCAN multi detector is suitable detection method in duodenal ulcer perforation (8, 9), but in our case, computed tomography scan wasn't performed because the typical symptoms of perforation (guarding and rebound tenderness) and the patient's agitation and chest radiography, performed free air in subphrenic space. In some cases, the location itself is limited perforation or perforation is covered of adjacent organs and postulate(10). In our patient, the perforation was covered by the liver and postulate.

4. Conclusion:

Here we have introduced patients with a history of addiction to methamphetamine and methadone. After an acute overdose with this drug was duodenal ulcer perforation and perforation open and postulate to the left lobe of liver. Diagnosis perforation on the patient's clinical symptoms and free air under the diaphragm in Chest X-ray and free fluid in the abdominal cavity by ultrasound was taken to the operating room. This patient suffered perforation duodenal ulcers after acute taking of a methamphetamine as well as this atypical wound has been opened in the left lobe of the liver. Despite perforated peptic ulcers in patients addicted misleading figures will not be misled doctors poisoning Service. Because delay in diagnosis and treatment is associated with high morbidity and mortality. Further investigate is proposed the effects of amphetamine and methamphetamine on peptic ulcer perforation and effect on its.

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