

A Story of Extraordinary Abdominally Perforation

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Abstract

Pneumoperitoneum is the result of a gastrointestinal (GI) tract perforation in more than 90% of cases. Perforation of the stomach or duodenum caused by peptic ulcer is considered the most common cause of pneumoperitoneum. In this article, we present a case of pneumoperitoneum associated with sigmoid colon perforation, which is the result of the patient trying to create a laxative effect by inserting the hose attached to the wash basin into his rectum and opening the water afterwards. An 89 years old male patient was brought to the emergency department with complaints of abdominal pain starting about 2 hours ago. The patient's abdominal ultrasonography showed free fluid up to 10 cm in the lower abdomen. Posterior anterior chest X-ray and direct standing abdominal X-ray of the patient had subdiaphragmatic free air and images with free fluid, pneumoperitoneum and perforation were obtained in contrast enhanced abdominal tomography. As a result of surgery performed by general surgery it was seen approximately 30 cm proximal from the rectum that there was a 4 cm perforation in the sigmoid colon. We must consider pneumoperitoneum, which is the result of colon perforation especially in elderly patients with acute abdominal pain, to be definitely among our differential diagnoses.

Key Words: Sigmoid colon perforation, pneumoperitoneum, acute abdomen

Introduction

More than 90 percent of pneumoperitoneum cases are the result of gastrointestinal perforations¹. Perforation of the stomach or the duodenum due to peptic ulcer is admitted as the most common cause of pneumoperitoneum. It also occurs because of abdominal trauma or diverticular perforation¹. The most common radiological finding in a patient with widespread peritonitis is free air under the diaphragm on chest X-ray. Most situations require immediate exploration and intervention. Iatrogenic colorectal perforations have frequently taken place in the surgical literature, due to occurring during colonoscopy and barium enema examinations⁵. Rarely, pneumatic injuries caused by the jokes made with compressed air sources has also been reported⁶. Rarely, pneumatic colon injuries caused by the jokes made for the fun using compressed air sources has also been reported⁶.

Case report

An 89-year-old male patient was brought to the emergency room with the complaint of abdominal pain which started about 2 hours ago. According to the medical history taken from patient and his relatives, the patient has complained

about chronic constipation for many years. When we detailed the medical history, we learned that the patient has complained about constipation for a long time, he has went to the toilet, attached the hose to the faucet, put the hose into his anus and opened the faucet to get the feces output by the help of the water. The patient said that he had done the same process for the abdominal pain began 2 hours ago. There are pain and tenderness in the abdominal examination of the patient. The patient's vital parameters including blood pressure, pulse, respiratory rate and fever were respectively measured as 90/52 mmHg, 74 / min, 20 / min fever and 36.4° C. In the lab tests of the patient, the hemogram parameters were like that: White blood cell (WBC): $11 \times 10^9/L$, hemoglobin (HB): 14.5 g/dL, hematocrit (HTC): 42% and PLT: $427 \times 10^9/L$. The biochemical parameters were like that: glucose: 113 mg/dL, sodium: 129 mmol/L, calcium: 8 mg/dL, total bilirubin: 1.52 mg/dL, direct bilirubin: 0.58 mg/dL and albumin: 2.8 g/dL. C-reactive protein (CRP) was 0,401 mg/dL (normal range is 0 - 0.35 mg/dL). Other parameters were normal. The patient's abdominal ultrasonography showed that there was approximately 10 centimeter free liquid in the lower abdomen. There was a diaphragmatic free air in the patient's chest and abdomen X-ray (Figure-1) and contrast-enhanced abdominal tomography showed images compatible with intraabdominal free fluid, pneumoperito-

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Received: 17.01.2019 • **Accepted:** 17.01.2020

DOI: 10.33706/jemcr.514083

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neum and perforation (Figure-2). The patient was consulted general surgery department and he was undergone emergency surgery with the pre-diagnosis of pneumoperitoneum and perforation by general surgeons.



Figure 1: Free air under diaphragm on the chest X-ray

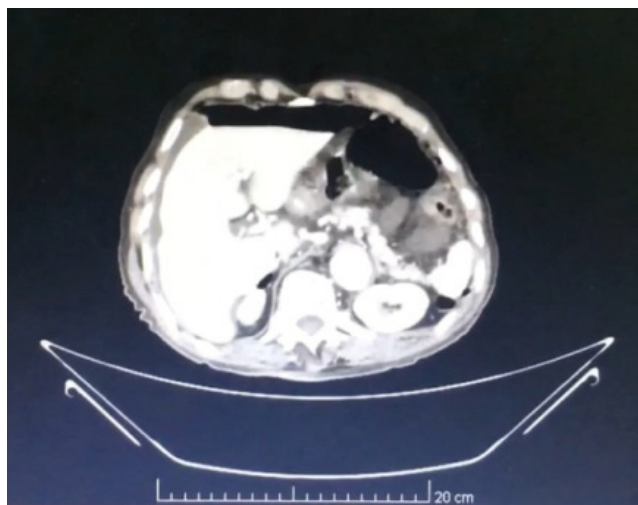


Figure 2 : Free fluid and air in the abdomen on the contrast-enhanced abdominal tomography

Discussion

More than 90 percent of pneumoperitoneum cases are the result of gastrointestinal perforations¹. Perforation of the stomach or the duodenum due to peptic ulcer is admitted as the most common cause of pneumoperitoneum. It also

occurs because of abdominal trauma or diverticular perforation¹. Complaints of constipation and chronic laxative use increase with age, and at the same time, there is an increase in the frequency of enema applied in emergency services, in nursing homes or at home by the patient him- or herself²⁻³. Rectal tubes or similar instruments with varying length, diameter and stiffness are used for enema administrations performed with water or laxatives. The incidence of rectum and sigmoid colon perforations is increasing due to enema administrations performed by such tools⁴. Paran et al reported 13 patients who consulted their clinic within 3 years for colorectal perforation due to enema in the study conducted in Israel. Ten of them were elderly patients with chronic constipation who were staying at nursing homes and the enema was administered by nursing staff. The other 3 patients administered the enema him- or herself at home. Considering the elderly patients with chronic constipation in our country, pneumoperitoneum cases which are secondary to colonic perforation caused by enema administrations should be drawn attention and further studies are needed. To inform patients relatives or caregivers who are taking care of them about possible injuries will also be useful.

Conclusion

A 4 cm sigmoid colon perforation which is extending 30 cm proximal from rectum was found in the operation performed by general surgeons. Pneumoperitoneum, which is the result of colonic perforation, has been found to show a mortal course especially in elderly patients, and pneumoperitoneum, which is caused by the perforation of the sigmoid colon after a traumatic procedure performed by the patient in our case, is worthy of presentation.

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