Pneumoperitoneum Due to a Transmural Anal Fissure

by Glen Huang, Hussam Bitar

Pneumoperitoneum is usually due to a perforated viscus and requires surgical intervention, however, a minority of cases can be managed nonsurgically. Nonsurgical pneumoperitoneum has a wide variety of causes, but a transmural anal fissure being the cause has yet to be documented. In this case we describe a case of pneumoperitoneum due to a transmural fissure caused by extreme diarrhea.

INTRODUCTION

Anal fissures are common and typically result from mucosal tear. In traumatic cases, the tear may be transmural. These tears typically occur posteriorly to the midline and patients often present with anal pain or rectal bleeding.[1] Pneumoperitoneum is a collection of air in the peritoneal cavity, typically occurring from a ruptured hollow viscus. However, cases of pneumoperitoneum without evidence of perforation can rarely occur.[2] Here, we discuss a case of pneumoperitoneum secondary to an acute anal fissure.

Case Report

An 86 year old Caucasian male presented to the emergency department with abdominal pain. His pain was preceded by constipation for which he took laxatives, which resulted in diffuse, non-bloody diarrhea. He described the abdominal pain as sharp, constant and localized to the lower abdomen. His past medical history was significant for peripheral vascular disease, gastroesophageal reflux disease, diabetes mellitus and hypertension.

On physical exam his abdomen was soft and had mild tenderness in the lower quadrant without guarding or rebound. Rectal exam showed perianal discoloration and left posterior tear. Computed tomography (CT) of the abdomen and pelvis done showed inflammation of the sigmoid colon with subcutaneous emphysema in the perianal area with intra-abdominal pneumoperitoneum (Figure 1). This air appeared to be contiguous with a transmural anal tear that was noted as well (Figure 2). Complete blood count (CBC) demonstrated an elevated white blood cell count of 16.9 x 10^3 cells/µL (local control 3.8-10.79 x 10^3 cells/µL) with 87% neutrophils (local control 40-79%). The rest of the CBC was within normal limits.

The patient was then admitted and given a full liquid diet to allow for bowel rest. He was also placed on intravenous antibiotics for the possibility of perianal cellulitis given his increased white blood cell count. The following day the patient felt improvement and his diet was advanced as tolerated. On the third day the CBC was within normal limits and the abdominal pain resolved. The perianal discoloration also improved. He was then discharged home with oral antibiotics.

DISCUSSION

In this case we discovered pneumoperitoneum from a transmural anal fissure due to extreme diarrhea. It is likely that the anal fissure was an acute process secondary to the patient's diffuse laxative-induced diarrhea. Air subsequently tracked up and down the mesorectum and caused reactive inflammation from the surrounding viscera, causing the patient's abdominal pain. The elevated white blood cells was most likely due to a soft tissue infection of the anal fissure.

Pneumoperitoneum typically occurs due to perforated viscus and generally requires surgical intervention. However 10% of cases are due to

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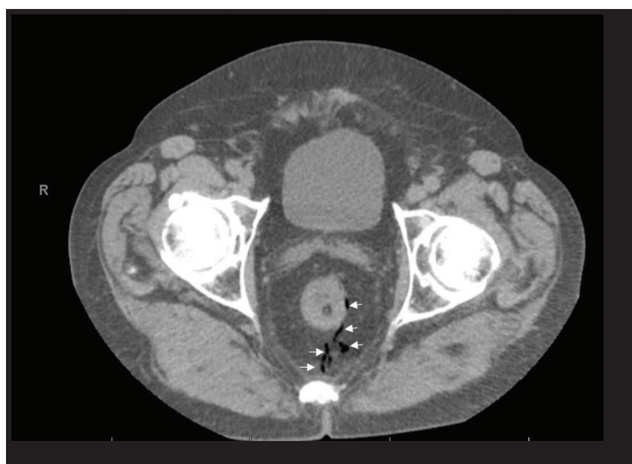

Figure 1. CT scan showing free air in the perianal space (arrows).

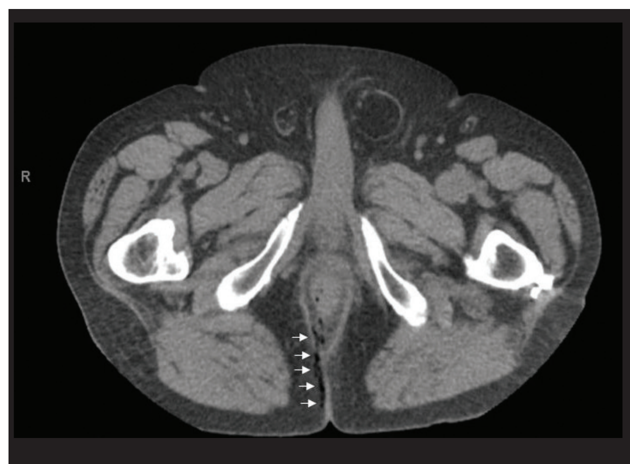

Figure 2. CT scan showing a transmural tear of the anus between 6 and 7 o'clock (arrows).

non-surgical causes. Non-surgical causes should be suspected in patients with minimal abdominal pain and distention with absent peritoneal signs, fever, and leukocytosis. There are a wide range of causes such as collagen vascular disease, diverticulosis, pneumatosis cystoides intestinalis and distended hollow viscus.[2] In this case we believe the cause of pneumoperitoneum was due to gradient pressure from the extreme diarrhea causing a transmural anal fissure. The patient responded well to conservative management, thus we deemed that emergent surgical intervention was not required.

In conclusion, we present a unique case of a transmural anal fissure causing pneumoperitoneum. Although rare, we believe that it is important to identify a potential cause of pneumoperitoneum that can be managed conservatively such as this so that the patient does not undergo unnecessary surgery. ■

References

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