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Pneumatosis Cystoides Intestinalis Due to Cholelithiasis: A Case Report

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ABSTRACT

Introduction: Pneumatosis cystoides intestinalis (PCI) is a rare condition with an unknown origin, defined as the appearance of gas-filled cysts in the intestinal wall. It usually occurs due to other clinical origins. Radiological imaging has been suggested for diagnosis. The treatment varies according to the patient's clinical condition and radiological imagings from conservative treatment to the intestinal resection.

Case Report: A 77 year-old female patient presented to the emergency room with abdominal pain, nausea, vomiting, constipation, and abdominal distention. The patient's vital signs were in the normal range. Physical examination revealed an abdominal distention with inspection and general abdominal tenderness in all quadrants, especially the right upper side, with palpation. Intestinal-type air-fluid level was seen on direct abdominal radiography; therefore, we performed abdominal CT. CT detected the gall stone with free air around the stone and PCI view on the intestinal wall

Conclusion: An emergency physician should keep PCI in mind; they should not misinterpret findings with intestinal obstruction and mesenteric ischemia on radiological scans and clinical signs. An emergency physician should keep PCI in mind. They should not misinterpret findings with intestinal obstruction and mesenteric ischemia on radiological scans and clinical signs.

Keywords: Cholelithiasis, pneumatosis cystoides intestinalis, abdominal pain

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Introduction

Pneumatosis cystoides intestinalis (PCI) is a rare condition, characterized by subserosal or submucosal air within the intestine wall. PCI cysts can be localized anywhere from the mouth to the rectum with walls full of air (1). It was first defined in 1730 by DuVernoi in the small intestine (2, 3). The worst presentation is pneumoperitoneum due to rupture of cysts. The management of this situation comprises a wide variability from supportive therapy to intestinal resection (4).

Here, we present a case who was admitted to Emergency Unite (EU) with intestinal ileus symptoms. PCI was obvious based on the abdominal computed tomography (CT) scan. She was discharged with supportive therapy.

Case Report

A 77-year-old female patient presented to EU with abdominal pain, nausea, vomiting, constipation, and abdominal distention. The patient's vital signs were in the normal range. Based on her physical examination, there was abdominal distention and general abdominal tenderness in all quadrants, especially on the right upper side, with palpation. Other system examinations were normal. She underwent a hysterectomy operation 1 year ago. Patient's routine blood tests and kidney and liver function tests were in the normal range. Intestinal-type air-fluid level (Figure 1) was seen on direct abdominal radiography. Abdominal CT showed a gall stone, with free air around the stone, and PCI was obvious on the intestinal wall (Figure 2a, b). The patient underwent general surgery consultation. Surgeons suggested operation, but she rejected the suggestion. Thus, she underwent supportive therapy. The patient's clinical condition degraded and she was discharged on the third day of hospitalization in the surgery service.

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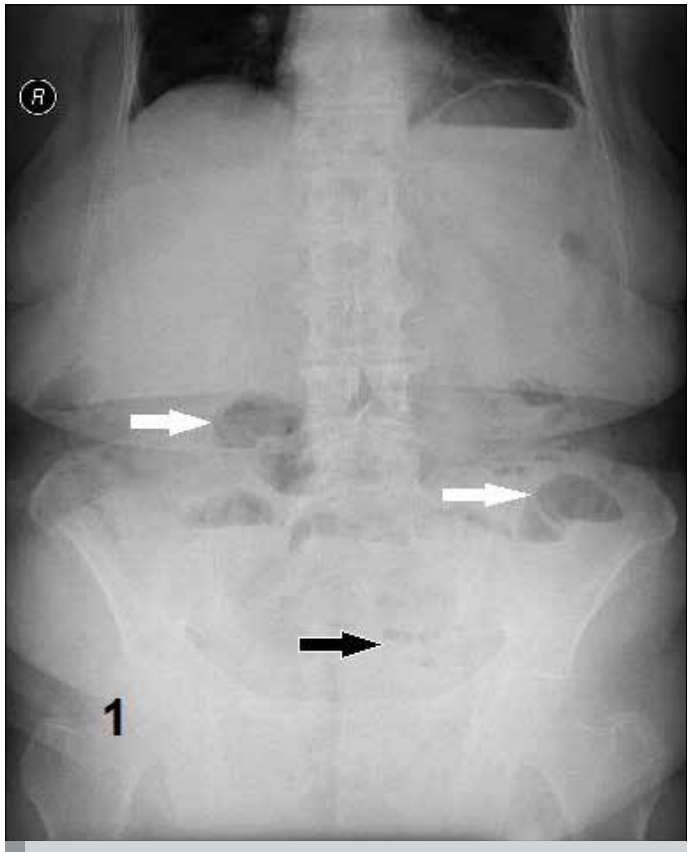

FIGURE 1. The white arrow in the directed graph indicates the findings of intestinal obstruction (free air-liquid levels), and the black arrow indicates air on the intestinal wall due to PCI.

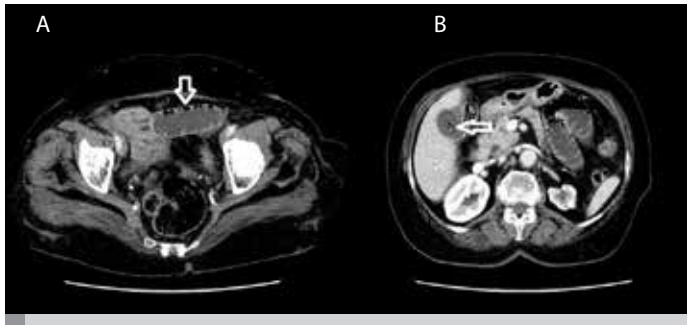

FIGURE 2. a, b. (a) Free air on the intestine wall in the CT scan. (b) Air and gall-stone in the gall bladder.

The patient's informed consent was obtained before preparation of this report.

Discussion

PCI lesions can be localized anywhere from the mouth to the rectum in the gastrointestinal system (GIS). It may cause benign pneumoperitoneum due to rupture of cysts on the intestinal level. There are plenty of theories about the pathogenesis of PCI. For the origin of gas in the intestinal wall, intraluminal gas, pulmonary gas, and gas which was produced by the bacteria were primarily considered. Mucosal damage or increased intraluminal pressure or both may be responsible for the intraluminal gas permeability (5, 6).

PCI cases can be idiopathic (15%) or secondary (85%) (7). Secondary causes depend on many etiological factors such as trauma, inflammation, autoimmunity, infections, pulmonary diseases, and drugs. Cholelitiasis, as the most probable etiologic factor in our case, was determined as the cause of PCI in the literature before (8).

Patients are usually asymptomatic. The underlying diseases may cause symptoms. Abdominal discomfort, enteritis, constipation, or nonspecific symptoms such as rectal bleeding may occur in symptomatic patients. Volvulus, intestinal obstruction, bleeding, intussusception, and intestinal perforation can be seen in 3% cases as serious complications (9).

Treatment of PCI depends on the underlying causes. For defining the air on the intestine wall as in our patient, direct radiography and CT can be used (9). Emergency physicians (EP) should be aware of GIS perforation while evaluating the patient's radiographic scans. For patients whose abdominal examination does not show acute abdomen, biochemical markers are normal, and radiological images do not reveal ischemic signs, a conservative approach, including stopping oral intake, applying the nasogastric tube, antibiotherapy, and hydration, may be enough (10).

Conclusion

EPs should keep PCI in mind. They should not misinterpret findings with intestinal obstruction and mesenteric ischemia on radiological scans and clinical signs.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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