

Gastric Outlet Obstruction Accompanied by a Diffuse Segmental Pneumatosis Cystoides Intestinalis

Abstract

Pneumatosis cystoides intestinalis (PCI) is a rare condition characterized by multiple thin-walled, gas-filled cysts in the submucosal or subserosal layer of the gastrointestinal wall. PCI is not well understood. Symptoms associated with it are nonspecific, commonly including abdominal pain and distension, diarrhea, bloody stool, and constipation. In this report, we present an interesting case of gastric outlet obstruction associated with PCI in an elderly male patient, who was successfully treated by the gastroenterostomy.

Keywords: Gastric outlet obstruction, gastroenterostomy, pneumatosis cystoides intestinalis

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Introduction

Pneumatosis cystoides intestinalis (PCI) is a relatively rare benign condition in which multiple gas-filled cysts are seen in the bowel wall. Pathogenesis of PCI remains unknown. Intestinal barrier leakages, microbial agents, and chronic obstructive pulmonary disease have been involved. This uncommon condition is usually asymptomatic and first diagnosed incidentally by radiologist.^[1-3] However, it can also be a sign of an underlying disease process such as bowel necrosis, mesenteric ischemia, and bowel obstruction which can be life-threatening. Possible complications of PCI include pneumoperitoneum, volvulus, gastrointestinal obstruction, perforation, and intussusception. However, those are not frequent.^[1,4] Abdominal radiography, contrast enema, ultrasonography, and computed tomography (CT) scan can demonstrate the presence of intramural gastrointestinal gas.^[1,4]

Case Report

A 66-year-old male presented to the emergency with nausea, vomiting, an abdominal pain, and malnutrition. He has diabetes and hypertension. The physical examination revealed an epigastric pain, accompanied with the abdominal distension. No signs of the peritonitis. The other general clinical findings were the dyspnea, chest pain, and no fever. The

patient was admitted in the department of general surgery. The laboratory findings showed increasing values of creatinine (2), urea (104), albumin (2, 8), Na (132), Chloride (96, 1), and calcium (8, 4). Nasogastric tube recommended. Nothing orally and central venous catheter indicated. Abdominal X-ray showed a dilatation in the stomach, the transverse colon, and some gas-filled cyst along the ascending colon and small intestine [Figure 1]. The abdominal CT revealed a gastric distension as a result of the pyloric stenosis, accompanied by the evidence of some gas-filled cyst in the wall of the stomach [Figure 2], also the CT showed segmental colonic dilatations accompanied with multiple gas-filled cysts in the wall of the ascending, transverse colon, and the small intestine [Figure 3].

Endoscopy showed a severe pyloric stenosis, accompanied by a gastropathy and an esophagitis. The result of the biopsy was a chronic gastritis and an intestinal metaplasia. The finding at the colonoscopy was a diffuse segmental dilatation in the whole of the colon but mainly was in the right colon, the small intestine, and in the transverse colon. These dilatations could not be confirmed to be gas cysts at colonoscopy. The nephrology consultation advised to give sufficient and limited intravenous fluids, in addition to suitable antibiotics because of the evidence of the right hydronephrosis by the abdominal CT. The cardiovascular consultant directed to

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Figure 1: Abdominal X-ray showed a dilatation in the stomach, the transverse colon, and some gas-filled cyst along the ascending colon and small intestine

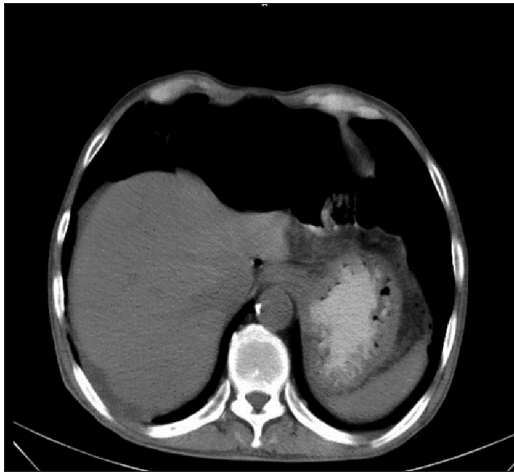


Figure 2: The abdominal computed tomography revealed a gastric distension as a result of the pyloric stenosis, accompanied by the evidence of some gas-filled cyst in the wall of the stomach

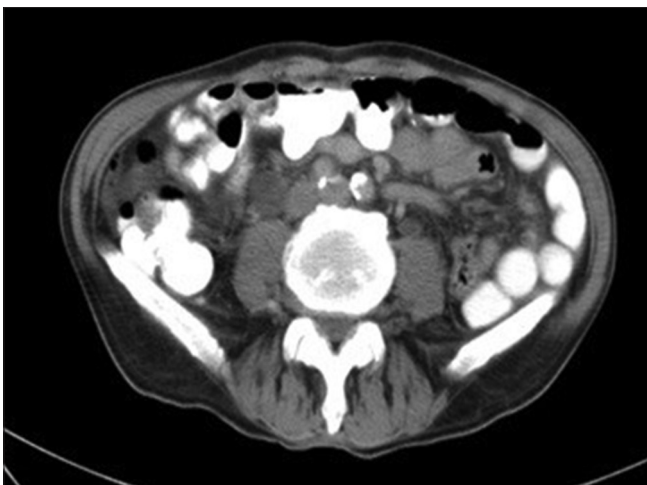


Figure 3: The abdominal computed tomography revealed multiple gas-filled cysts in the wall of the ascending and transverse colon and also in the small intestine

the necessity of putting a special pacemaker which was indicated because the electrocardiogram showed a sinus bradycardia, atrioventricular block, with a total heart block. In the operation room, after the laparotomy performed, and by the direct investigation of the all organs of the abdomen, we noticed a severe stenosis in the pylorus without any distinct or clear mass accompanied by the distension of the stomach and some cyst in the gastric wall. Furthermore, there was a dilatation in the whole colon accompanied by lots of the subserosal cysts along some segments of the colon parts. A gastrojejunostomy (anastomosis) plus brown procedure (anastomosis) were performed to the patient. A transabdominal wall drainage fixed, the laparotomy incision closed, and then, the patient transmitted to the Intensive Care Unit.

Discussion

In this case; the patient presented to the emergency with the symptoms of gastric outlet obstruction. Moreover, all the preoperative investigation proved that there was no clear etiology explains the occurrence of the gastric outlet obstruction. Except the radiological findings of the PCI. The operation was performed to solve the problem of the pyloric obstruction by doing a gastrojejunostomy (anastomosis). In addition to brown procedure (anastomosis) and during the exposure of the abdomen, we noticed that the PCI was of diffuse segments as some cyst in the gastric wall. Furthermore, there was a dilatation in the whole colon accompanied by lots of the subserosal cysts along some segments of the colon parts. PCI is a rare finding characterized by the presence of multiple gas-filled cysts in the submucosal or subserosal layer of the gastrointestinal wall,^[1] and also, it is classified into idiopathic (15%) and secondary disease (85%).^[5] Secondary PCI is associated with pulmonary diseases such as chronic bronchitis, emphysema, bronchial asthma, collagen disease, inflammatory bowel disease, infection disease, leukemia, malignant tumor, cerebral palsy, trauma, and the use of immunosuppressants and alpha-glucosidase inhibitors.^[6] Moreover, depending on the findings in our case and based on the reality that says: the idiopathic PCI usually occurs in the colon, particularly the left colon. The secondary PCI usually occurs in the small intestine and right colon;^[7,8] we think that this case can be secondary PCI. But the most important point in our case was the gastrointestinal obstruction which was one of the possible complication of the PCI,^[1,4] we concluded that we were in front of one of the complications of PCI which was the gastric outlet obstruction, and our intervention was recommended to solve this emergent problem.

Conclusion

The PCI is a rare case, mostly silent and asymptomatic, and the majority of its cases discovered by chance while the patient is investigated for other complaints or other

diseases of the abdomen. Moreover, sometimes, we discover the PCI when one of its complications takes place inside the abdomen. In our case and by the absence of any other etiology that can explain the occurrence of the gastric outlet obstruction, we expect that we were in front of one of the complications of PCI. Hence, when PCI will be a sign of a serious underlying intra-abdominal pathology such as bowel necrosis, mesenteric ischemia, and bowel obstruction which can be life-threatening, an urgent surgical intervention to solve the complication is warranted. Otherwise, the treatment should perform to solve the main problem of the patient, without interfering in the asymptomatic and noncomplicated PCI.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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