



CASE REPORT

Anorexia in a hemodialysis patient due to pneumatosis intestinalis: A case report

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Abstract

We report a case of pneumatosis intestinalis (PI) in a hemodialysis patient who presented with anorexia and nausea. Anorexia with postprandial nausea can be caused by gastrointestinal diseases, with one of the rare causes being PI. PI may occur in hemodialysis patients, but it is rarely reported. We experienced a case of benign PI in a hemodialysis patient, for whom the conservative treatment with antibiotics improved the patient's clinical symptoms. In patients with PI, it is important to rule out potentially life-threatening complications, such as the presence of hepatic intraportal gas on CT scan.

KEYWORDS

anorexia, hemodialysis, pneumatosis intestinalis

1 | INTRODUCTION

Anorexia can be caused by a variety of etiologies, causing difficulties in making a definitive diagnosis. Anorexia with postprandial nausea can be caused by gastrointestinal diseases, with one of the rare causes being pneumatosis intestinalis (PI). Pneumatosis intestinalis refers to the presence of gas within the wall of the small intestine or the colon. These cases are often called by other names such as pneumatosis cystoides intestinalis, intramural gas, pneumatosis coli, pseudolipomatosis, intestinal emphysema, bullous emphysema of the intestine, and lymphopneumatosis.^{1,2} Cases are often asymptomatic with an unclear etiology. PI may occur in hemodialysis patients, but it is rarely reported. In this report, we describe a chronic hemodialysis patient with anorexia and nausea suspected to be caused by PI, but a definitive diagnosis was difficult to make.

2 | CASE

A 72-year-old male hemodialysis patient was admitted to the hospital due to loss of appetite for a week and vomiting after eating. Prior to that, he had been suffering from dental problems with gum pain and also mild constipation. He had a history of hypertension, gastric ulcer, peripheral arterial disease, early-stage gastric cancer (postendoscopic submucosal dissection), alcoholism, insomnia, and end-stage renal failure. One year ago, he was started on regular hemodialysis treatment, which was done three times a week. He lived with his wife, and their three children lived in a nearby town. His medications included nifedipine 20 mg, benidipine 2 mg, metoprolol 20 mg, rosuvastatin 2.5 mg, aspirin 100 mg, vonoprazan 20 mg, calcium carbonate 2000 mg, sodium valproate 400 mg, trazodone 75 mg, ramelteon 8 mg, and suvorexant 15 mg. On physical examination, body temperature was 36.3°C, blood pressure was

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136/72 mmHg, pulse was 75 beats per minute, and oxygen saturation was 97% in ambient air. There were no abdominal tenderness, no muscular defenses, or any other abnormalities. Laboratory tests revealed a white blood cell count of 3700/ μ l, hemoglobin count of 10.9 mg/dl, creatinine count of 5.51 mg/dl, and C-reactive protein count of 1.65 mg/dl. Abdominal and pelvic computed tomography (CT) without contrast showed extensive intramural gas in the small intestine, leading us to a suspicion of PI (Figure 1). There was also a small amount of free air, which was thought to be leakage from the emphysema of the intestinal wall. There was no hepatic intraportal gas.

For the differential diagnosis of this patient's anorexia, we considered PI, constipation, gum pain, medication side effects, and psychological factors. The patient was on multiple psychotropic medications, none of which were started or increased in dose within the past six months. He was a hemodialysis patient with a history of alcoholism; however, there were no obvious signs of major depression or anxiety disorder at the time of admission. PI and/or constipation were suspected as the cause, and thus, metronidazole 250 mg and laxatives were prescribed. On day 3, there was noted improvement in appetite and bowel movements. On day 5, nausea disappeared, and the patient was able to eat a full meal. He was discharged on day 8 and prescribed metronidazole for another week. Three weeks after admission, a follow-up abdominal CT was performed, and the intramural gas in the wall of the small intestine had completely disappeared.

3 | DISCUSSION

Since anorexia can be caused by a variety of factors, it is often difficult to determine its exact etiology, and the diagnosis is often made clinically. There is a mnemonic "MEALS-ON-WHEELS" (medications, emotional, alcoholism/abuse/anorexia tardive, late-life paranoia,

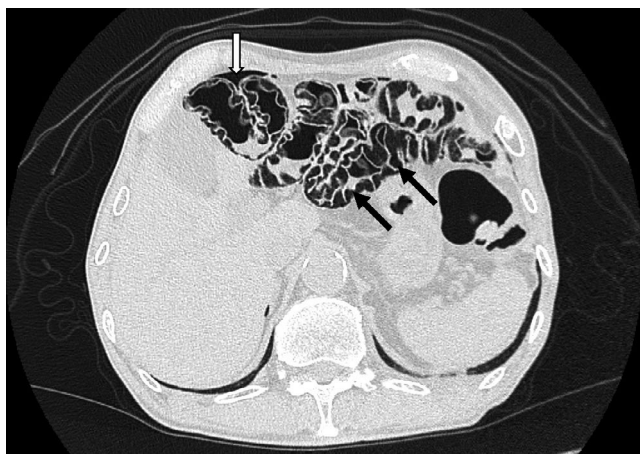


FIGURE 1 Abdominal CT without contrast on admission shows extensive intramural gas in the small intestine (black arrows) and a small amount of free air (white arrow)

swallowing problems, oral problems, nosocomial infections, wandering and other dementia-related behaviors, hyperthyroidism/hypercalcemia/hypoadrenalism/hyperglycemia, enteral problems, eating problems, low salt/low cholesterol, stones/shopping problems) for diverse causes of weight loss for the elderly, which can also be useful for differentiating anorexia.³ It is characterized by a wide range of causes, including gastrointestinal disorders, oral problems, medication side effects, psychological factors, and social factors. Although multiple causes were suspected in this patient, the nausea and anorexia improved relatively quickly after the management of PI and constipation. Patients with PI are usually asymptomatic, and other gastrointestinal symptoms such as vomiting are usually related to the underlying associated medical condition.^{4,5} Although intra-abdominal free air was found in this patient, there was no clinical evidence of gastrointestinal perforation or intestinal ischemia, and the patient improved with a benign course. Benign pneumoperitoneum with PI could be caused by the rupture of intramural blebs.⁵ In contrast, life-threatening PI can be suspected with the presence of bowel wall thickening, dilated bowel, arterial or venous occlusion, soft-tissue stranding, and hepatic portal or portomesenteric venous gas on CT scan; none of these signs were found in this patient.⁶ Some medications including corticosteroids, chemotherapeutic agents, and voglibose could induce PI,⁴ and however, the patient had none of them. For symptomatic patients with non-life-threatening PI, conservative treatment with antibiotics such as metronidazole 500 mg daily can be an option.⁷ Antibiotics can theoretically reduce the amount of gas produced by bacteria and alleviate obstructive symptoms. Although the relief of constipation possibly improved anorexia in this patient, it is also possible that the treatment of PI with metronidazole improved his symptoms. Although several cases of hemodialysis patients with PI have been reported, most of them were severe cases with intraportal gas⁸⁻¹⁰; benign PI cases such as this are rarely reported. It is speculated that the etiology of PI in hemodialysis patients could be that the cell-cell structure damage during hemodialysis may lead to bacterial translocation, but the details are unknown.⁹ Since hemodialysis patients are immunocompromised and at high risk of life-threatening conditions, it is important not to overlook warning signs such as intraportal gas.

4 | CONCLUSION

We report a case of PI in a hemodialysis patient who presented with anorexia and nausea. PI was suspected to be one of the multiple causes of anorexia in this patient. Conservative treatment for PI with antibiotics improved the patient's clinical symptoms. In patients with PI, it is important to rule out potentially life-threatening complications, such as the presence of hepatic intraportal gas on CT scan.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

INFORMED CONSENT

The patient provided informed consent for this case report and the photographic content use (Figure 1).

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