



### Aeroportia - A Rare Finding for a Frequent Disease

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#### Case Report

A 69-year-old female was admitted to our hospital with complaints of abdominal pain and diarrhea for the last 2 weeks. She was obese, diabetic, and had peripheral arterial disease, but no history of bowel disease or previous gastrointestinal symptoms. Physical examination revealed severe dehydration, hypotension, and diffuse abdominal discomfort. Acute kidney injury with anuria and significant leukocytosis were documented. Furthermore, the patient had severe lactic acidosis. The clinical presentation was suggestive of severe abdominal sepsis. Abdominal ultrasound was difficult to perform due to the marked obesity of the patient. Initial imaging study with abdominal x-ray showed no signs of bowel occlusion and, the main diagnostic hypothesis that remained at this time included abdominal sepsis and bowel ischemia, with hypovolemia and her history of diabetes and arterial disease being important risk factors supporting the latter diagnosis. Aggressive resuscitation and empirical antibiotics were started but the patient continued to show signs of deterioration. Abdominal CT scans showed branching pattern of gas lucencies in the hepatic portal venous system (Figure 1) and pneumatosis intestinalis (Figure 2) with vascular

patency. No pneumoperitoneum was noted. In this context, these findings were suggestive of bowel ischemia, possibly due to hypovolemia and hypoperfusion. As this was the main hypothesis and one with an important mortality, the patient was submitted to an emergent exploratory laparotomy. Bowel ischemia was confirmed and extensive resection of necrotic small bowel was executed, after which she started to improve. Surgery for restoration of bowel continuity was successfully performed 3 weeks later.

Portomesenteric venous gas and pneumatosis intestinalis are uncommon but very important radiographic findings. They are two distinct entities, not pathognomonic of bowel infarction when separate, but when combined they are strongly associated with bowel ischemia. Nonetheless, some non-ischemic conditions have been described associated with these imaging findings (such as inflammatory bowel disease) [1]. The mechanisms involved are not yet clear but the mucosal damage appears to allow the passage of air from the intestine to the venous system. Some authors suggest that the presence of anaerobic bacteria also leads to the production of larger amounts of gas contributing to this presentation [2].

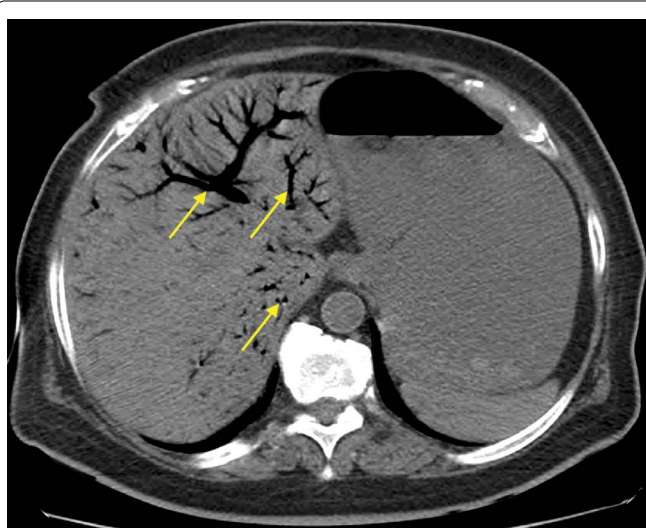


Figure 1: Aeroortia - portomesenteric venous gas (yellow arrows).

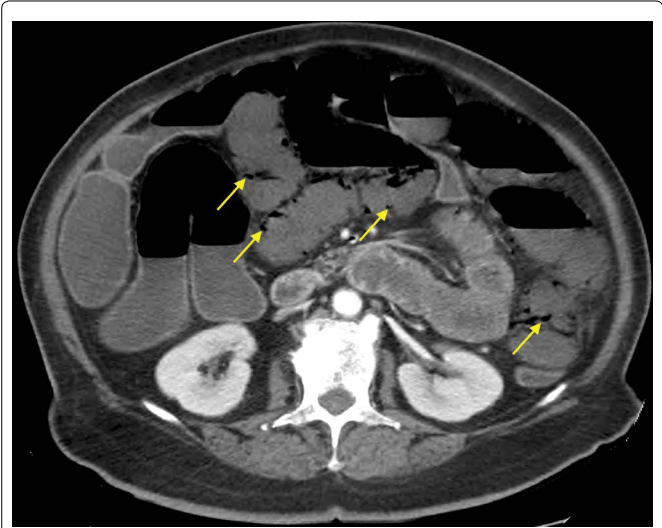


Figure 2: Pneumatosis intestinalis (yellow arrows).

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Patients with mesenteric ischemia, usually have multiple comorbidities that make this a very challenging diagnosis. Abdominal computed tomography is a useful exam in these cases, allowing early detection of subtle portomesenteric venous gas and pneumatosis intestinalis. Bowel ischemia has poor prognosis, with very high mortality rate (up to 75%, according to some authors [2]), and requires an early diagnosis and immediate surgical intervention.

### Learning Points

The rare association between pneumatosis intestinalis and the presence portomesenteric venous gas (termed aeroportia) is a strong indicator of bowel ischemia [1-5], an urgent life-threatening vascular condition with a high mortality rate. Early diagnosis and treatment are the keys to saving a patient's life [3].

### References

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