Endoscopic ultrasound to diagnose pneumatosis cystoides intestinalis (with video)

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An asymptomatic 59-year-old woman with an unremarkable medical history underwent colonoscopy for nonspecific abdominal pain. In the descending colon, the examination discovered serpiginous and dome-shaped bumps with elastic consistency, covered with normal-looking mucosa [Figure 1].

The results of routine laboratory analysis showed no abnormalities. The endoscopist hypothesized colonic varices. An abdominal computed tomography was performed, but no abnormalities were noted.

To clarify the diagnosis, the patient was referred for endoscopic ultrasound (EUS) performed with a miniaturized probe (UM-DP20-25R, Olympus, Tokyo, Japan) that was advanced through the working channel of a colonoscope, after instillation of water in the colonic lumen. This showed the presence of air pockets in the third (submucosal) wall layer, with intense shadowing, findings compatible with air-filled structures, establishing the diagnosis of pneumatosis cystoides intestinalis (PCI) [Figure 2 and Video 1].

The review of the CT performed before EUS disclosed that PCI was present to the same degree as detected with EUS, but had been overlooked at the time of initial interpretation.

PCI is characterized by multiple gaseous cysts in the intestinal wall, ranging in diameter from a few millimeters to several centimeters.[1] The etiology of PCI is still poorly understood. It is believed that most cases of PCI result from a mucosal breach that allows the leakage of gas into the bowel wall.
gas or the passage of gas-producing bacteria into the intestinal mucosa. Although a primary form of PCI may be present, this condition often occurs in patients with gastrointestinal or systemic diseases, such as acute and chronic inflammatory gastrointestinal disease, collagen disease, and chronic obstructive lung disease.\(^2\)

Although CT is deemed to be a sensitive test for PCI, EUS has clear-cut advantages over CT: it can be performed in the same session of colonoscopy if a miniaturized probe is used all the segments of the colon can be easily explored and it does not require radiation exposure. Despite only few case reports\(^3\text{11}\) can be found about the use of EUS in the diagnosis of PCI, for the aforementioned reasons, this technique should be regarded as the first choice in the diagnosis of this rare condition.

**Declaration of patient consent**
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**
There are no conflicts of interest.

**REFERENCES**