

## Pneumatosis coli: an incidental finding in CT colonography

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**Section:** Abdominal imaging

**Area of Interest:** Abdomen

**Procedure:** Colonography CT

**Imaging Technique:** CT

**Special Focus:** Cysts Case Type: Clinical Cases

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**Patient:** 38 years, male

### Clinical History:

A 38-year-old man, with a previous history of colonic polypectomy, hypertension and dyslipidaemia, presented with a positive blood stool test. He had no family history of colorectal cancer or inflammatory bowel disease. On clinical examination he had mild abdominal pain, and unremarkable digital rectal examination/rectoscopy. Colonoscopy revealed multiple polyps, with negative biopsies.

### Imaging Findings:

The patient underwent CT colonography (CTC) for further characterisation. Virtual endoscopy view of CTC shows multiple broad-based polypoid-like lesions in the sigmoid colon, and on the two-dimensional reconstructed images these lesions correspond to multiple gas-filled cystic lesions in the colonic wall. There is no evidence of colonic polyps, and there is no intestinal wall thickening, fat stranding, or pneumoperitoneum.

### Discussion:

**Background:** Pneumatosis is an imaging sign related to the presence of gas within the colonic wall, which can be associated with potential life-threatening clinical conditions such as bowel ischaemia, but can also be caused by benign conditions such as pneumatosis coli.

**Clinical Perspective:** Pneumatosis coli is a rare benign condition, even though it is increasingly identified due to the routine use of CT [1, 2], particularly since CT colonography (CTC) has become the radiologic method of choice for colorectal cancer investigation [3].

**Imaging Perspective:** In the evaluation of an asymptomatic patient in the outpatient setting, as in this case of colorectal cancer screening with CTC, benign conditions should be kept in mind. Benign conditions include pseudo-pneumatosis (when intraluminal beads of gas are trapped within or between faeces and adjacent mucosal folds), but also pneumatosis coli, which can be an incidental finding in asymptomatic patients. Although not pathognomonic, a cystic or bubbly appearance is usually indicative of a chronic pneumatosis and suggests a benign cause, whereas a linear appearance is more frequently associated with bowel infarction [1]. Moreover, the location, extent and

possible associated findings may help in the aetiology differentiation [1, 2, 4]. The absence of bowel wall thickening, fat stranding, pneumoperitoneum or portal venous gas is crucial for the diagnosis of this benign condition.

**Take Home Message:** Pneumatosis coli is an important pitfall in bowel imaging, particularly in the evaluation of 3D endoluminal CTC images, which could simulate the presence of polyps. This should remind us of the importance to analyse 2D images and different window settings (including lung window settings) during CTC analysis.

Written informed patient consent for publication has been obtained.

**Differential Diagnosis List:** Pneumatosis coli, Pseudopneumatosis, Bowel ischaemia, Colonic perforation

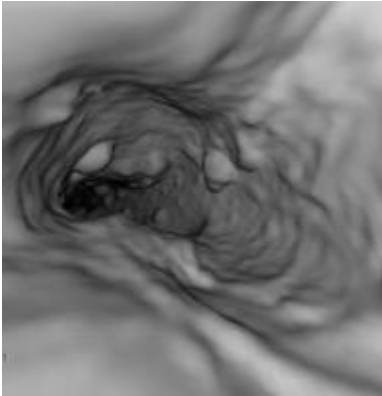
**Final Diagnosis:** Pneumatosis coli

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## Figure 1

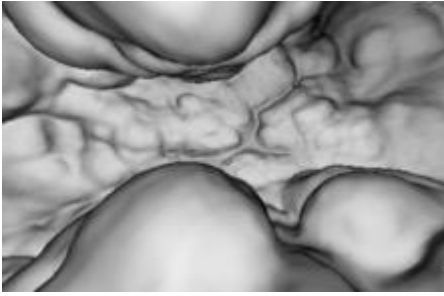
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**Description:** Virtual endoscopy view of CTC showing multiple polypoid-like lesions. **Origin:** Centro Hospitalar do Porto, Porto, Portugal

## Figure 2

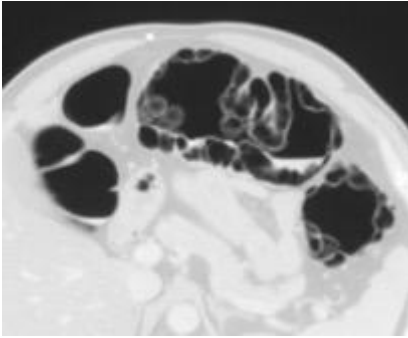
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**Description:** Virtual endoscopy view of CTC showing polypoid-like lesions. **Origin:** Centro Hospitalar do Porto, Porto, Portugal

**Figure 3**

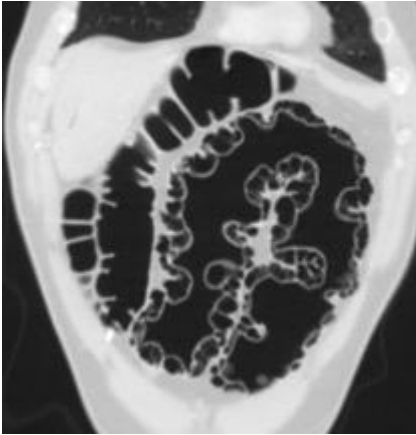
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**Description:** Multiple gas-filled cystic lesions in the colonic wall. **Origin:** Centro Hospitalar do Porto, Porto, Portugal

## Figure 4

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**Description:** Multiple gas-filled cystic lesions in the colonic wall. **Origin:** Centro Hospitalar do Porto, Porto, Portugal.