

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Medical Imaging Quiz – Case 36

An otherwise healthy 79-years-old man presented to the emergency department complaining for change in bowel habits and one episode of hematochezia over the past month. Abdominal and rectal examinations were unremarkable. Laboratory investigations showed no sign of anemia. Fecal occult stool blood test was positive. The negative contrast plain abdominal x-ray outlined an apple-core lesion of the left colon (fig. 1). High suspicion of colon cancer was raised and the patient was hospitalized for further imaging, which eventually confirmed the initial clinical and radiological diagnosis. Colonoscopy revealed a constricting, elevated annular mass in the splenic flexure; visualization of the remaining colon was not possible due to the extensive lumen narrowing. Computed tomography (CT) showed luminal



Figure 1

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narrowing and marked wall thickening, involving the splenic flexure with infiltration of the surrounding fat and few enlarged pericolic lymph nodes. A left hemicolectomy was performed; intraoperative endoscopic evaluation of the remaining colon was normal. Histopathologic examination revealed a stage IIIC (pT3pN2cMO) poorly differentiated mucinous adenocarcinoma.

#### Comment

The apple-core defect has been described for annular colon cancer on positive contrast studies (single-contrast barium enema, double-contrast air insufflation technique, CT), and when illustrated, it is outlined by contrast medium so that it shows up white.<sup>1</sup> The apple-core defect is rarely visible on plain x-rays. In this occasion it is presented in an unfamiliar way as it is outlined by gas; this is known as negative contrast apple-core defect. The finding of a true apple-core lesion on negative contrast plain abdominal x-ray is an extremely rare incident; residual fecal material is the most common cause of false-positive findings.<sup>2</sup> Although plain abdominal x-rays have no role in the diagnosis of uncomplicated colon cancer, recognition of a negative contrast apple-core defect in combination with careful examination and symptomatology awareness can be a useful tool in clinician's armamentarium, as diagnosis by history remains at the very core of clinical practice.

#### References

1. CANON CL. Is there still a role for double-contrast barium enema examination? *Clin Gastroenterol Hepatol* 2008, 6:389–392
2. MARINELLA MA. Apple core lesion. *J Emerg Med* 1999, 17:737

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*Diagnosis: Negative contrast apple-core defect*