Netherlands
The Journal of Medicine

PHOTO QUIZ

A round air configuration in the lower abdomen

T. Fassaert*, G. Jager

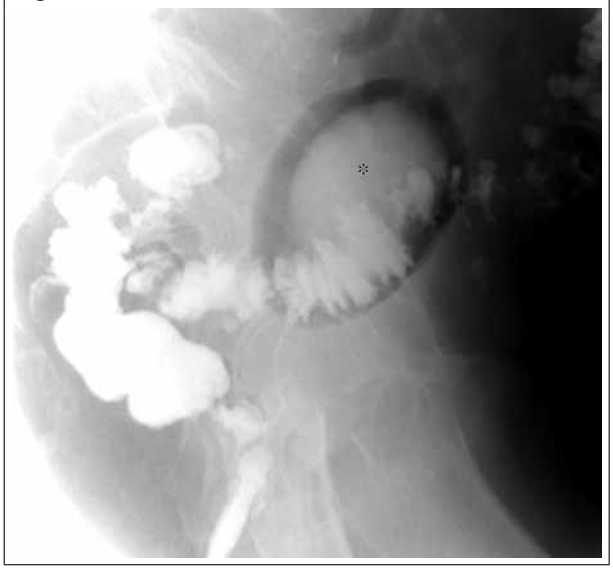
Department of Radiology, Jeroen Bosch Hospital, Den Bosch, the Netherlands,
*corresponding author: e-mail: tfassaert@hotmail.com

CASE

An 81-year-old female was admitted with intermittent pain in the lower abdomen for one year, accompanied by episodes of rectal blood loss. Her lab results showed anaemia; infection parameters were within the normal limits. An abdominal X-ray *(figure 1)* shows a smooth-walled round air configuration with air-fluid level(→); barium enema *(figure 2)* revealed an air-filled structure (*) with barium entering this cavity.

Figure 1.

Figure 2.



WHAT IS YOUR DIAGNOSIS?

See page 247 for the answer to this photo quiz.

ANSWER TO PHOTO QUIZ (PAGE 245)

A ROUND AIR CONFIGURATION IN THE LOWER ABDOMEN

DIAGNOSIS

Sigmoidoscopy showed diverticulosis. CT showed a round, thick-walled structure adjacent to uterus, left ovary and sigmoid, measuring 8 cm, containing air and fluid *(figure 3)*. There were no signs of infection. Patient was operated upon and recovered uneventfully. Pathology revealed a collapsed cystic structure containing little blood, connected with the sigmoid lumen. It was concluded to be a giant colonic diverticulum (GCD).

DISCUSSION

GCD is rare: we counted 122 PubMed-cited cases in the last 30 years. The definition is an air and/or fluid containing cystic structure adjacent to the colonic wall measuring 4 cm or more; 80 to 90% are found appending the sigmoid. In the literature the size varies from 6 to 29 cm, the majority being <10 cm.[1,2]

Age at presentation is generally over 60 years. Presenting signs and symptoms are abdominal pain (68%) a (non) tender mass (68%), altered bowel habits (29%), fever (21%), rectal blood loss (8%), and signs of an acute abdomen (7%). Major complications are perforation and abscess formation.[1]

Although clinically indistinguishable, GCD can be divided into three subtypes: the first subtype (66%) has a thick fibrous wall without inner lining. These are considered the result of perforated diverticula with consecutive abscess drainage into the bowel. The second subtype (22%) are regarded as pseudo-diverticula. These are (partly) lined with mucosa, and remnants of muscularis mucosa are sometimes found within the wall. Enlargement is usually gradual, occurring through a ball-valve mechanism. Finally, 12% are true diverticula, containing all layers of bowel wall.[3,4]

The typical appearance of GCD is a smooth-walled, air-filled oval or round structure on plain abdominal radiographs visible in 99% of the cases. An air-fluid level is frequently seen in an upright view.[1,3] As shown in this quiz case, unfamiliarity with this entity may cause the diagnosis to be missed. Confirmation of diagnosis is best achieved with CT, where a thick-walled air-filled cavity is found appending the colon.

Communication with the colon lumen can be demonstrated in 45 to 66% on barium enema through barium influx or expansion of the cyst on consecutive images.[4] Both colonoscopy and enema are relatively contraindicated because of risk of perforation.[1]

Other air-filled structures are giant duodenal diverticula, air in the gallbladder and in the urinary bladder, an abscess, a necrotising tumour or an isolated bowel segment in case of a volvulus. GCD can be differentiated from these entities based on morphology, location and clinical information.[5]

Risk of complications necessitates treatment. In most cases diverticulectomy or resection of a diseased colon segment is performed. Image-guided aspiration is indicated when immediate intervention is needed and surgery is not possible.[1,2]

Figure 3.

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