

Sigmoid diverticulitis: A case report

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Background. Diverticulitis could be a challenging diagnosis in a patient presenting with acute abdomen.

Case report. Our case presents a patient with acute abdomen in whom an abdominal ultrasound examination showed a mass with internal reflexes continued to the sigmoid colon and a diagnosis of diverticulitis was suspected. Later abdominal helical CT proved it to be diverticulitis.

Conclusions. The case emphasises the importance of ultrasound as a first line imaging modality for detecting bowel pathology.

Key words: sigmoid diseases; diverticulitis, diverticulosis, colonic; acute-ultrasonography, abdominal ultrasound

Case report

A 56 year old woman who complained of fever, left lower quadrant pain which worsened, frequent urination without dysuria, onset of mild non bloody diarrhoea. On physical examination a mass was palpable under the umbilicus, which was mobile and very tender. WBC count was elevated (18000).

Gynaecologic examination: Just beside the uterus a very painful mass was palpable. Douglas pouch was empty of fluid. Uterus, ovaries were intact. So a gynaecological cause was ruled out.

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Abdominal ultrasound (US) examination: beside the uterus, above the bladder a big homogenous, hypoechogenic mass was seen. On suspicion of an abscess formation, an US-guided fine needle aspiration was attempted, but no fluid was aspirated.

Next day on admission following control ultrasound examination the mass was seen as a continuation of the sigmoid colon with internal reflex representing the lumen and symmetrically thickened bowel wall (Figure 1). A diagnosis of sigmoid diverticulitis was highly suspected.

Abdominal and pelvic CT scan: thick walled sigmoid colon with diverticula outpouching from its surface, surrounded by an area of paracolic inflammation (Figure 2). Diagnosis: Sigmoid diverticulitis, diverticulosis.

Colonoscopy: The mucosa of the sigmoid colon was oedematous and rigid. On the oedematous mucosa an almost closed diverticular opening was seen, in addition to two

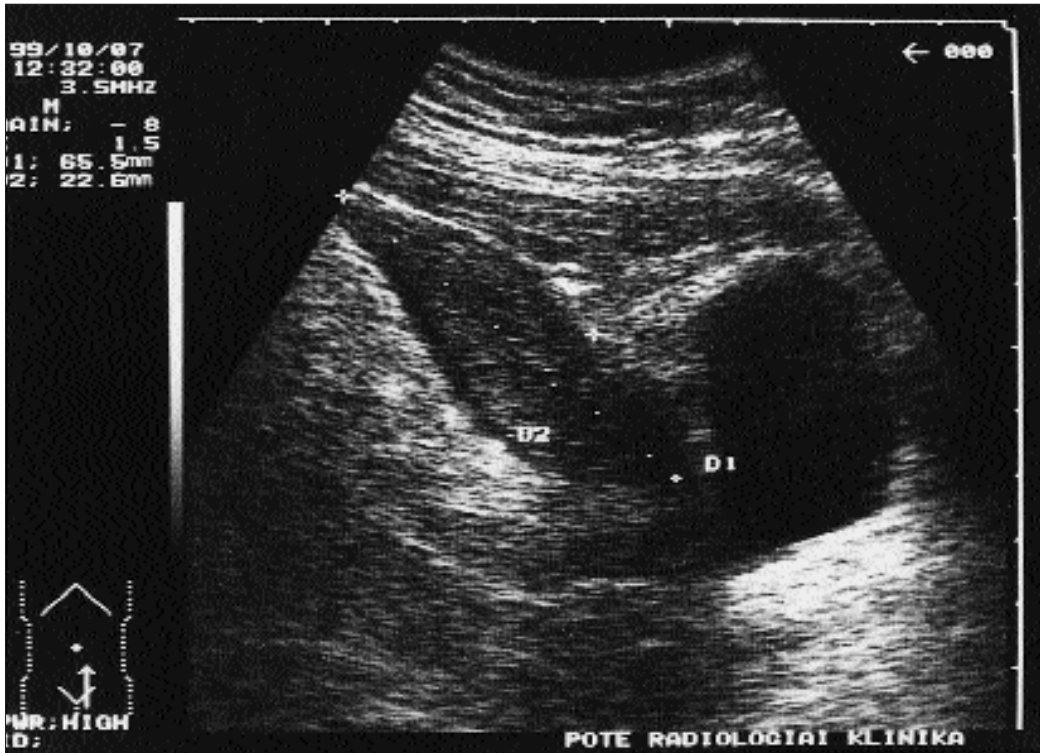


Figure 1. Abdominal ultrasound showing a mass in left lower quadrant in the continuation of sigmoid colon with central reflex representing bowel lumen and symmetrically thickened bowel wall.

other diverticulas. Diagnosis: Sigmoid diverticulitis, diverticulosis.

The patient was treated with broad-spectrum antibiotics (cefriakson) along with appropriate diet and fluids. The patient did not need any surgery or drainage. Ten days later a control abdominal ultrasound was negative and a double contrast barium enema study showed free bowel lumen with small filling surpluses representing diverticulosis (Figure 3). The patient was discharged.

Introduction

Diverticulitis is among the first line in the list of differential diagnosis of acute abdomen, most frequently presenting as left lower quadrant pain and tenderness, leukocytosis,

fever. Ultrasound is nowadays becoming the cheapest and easiest way in the diagnosis of the cause of acute abdomen, especially in places where access to CT is limited.

The purpose of our case report was to show the possible difficulties that can arise in the diagnosis of diverticulitis, and to show the use of ultrasound as a cheap and available method in reaching the diagnosis.

Discussion

The interesting point in this case is the misleading appearance of diverticulitis in the first ultrasound examination. The reasons could be: absence of the midline reflex representing the bowel gas and inability to follow the mass to the intestine.

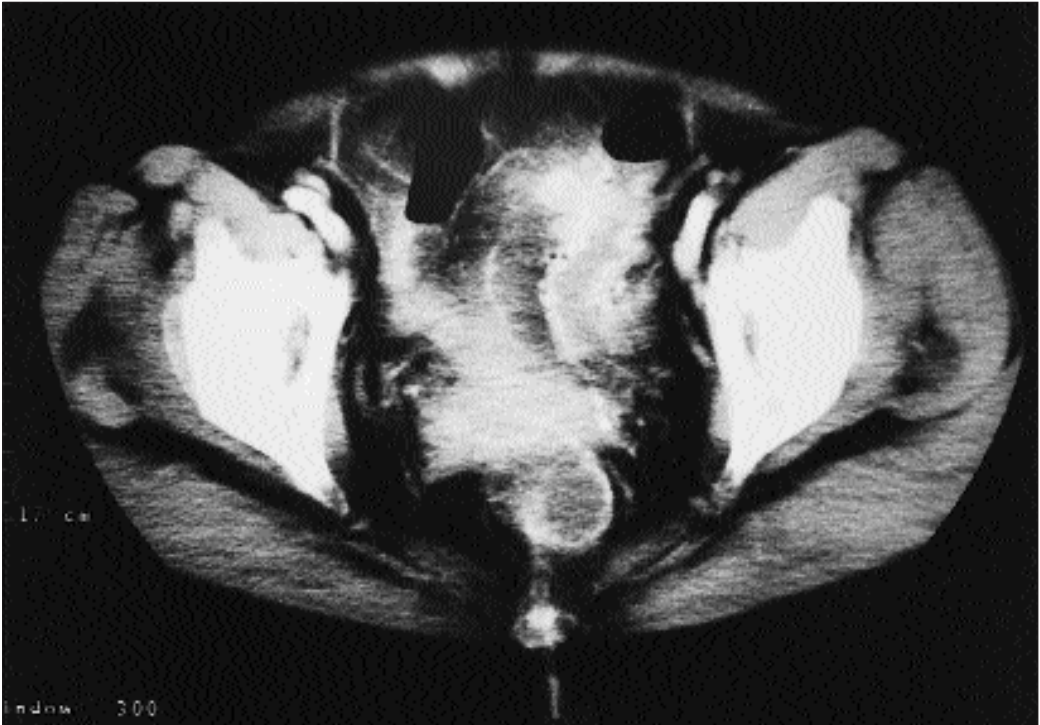


Figure 2. Abdominal CT showing a thick walled sigmoid surrounded by an area of paracolic inflammation and out-pouchings representing diverticuli.

The approach to diverticulitis starts from a plain abdominal x-ray, which is normally used for ruling in or out perforation, obstruction. Traditionally barium enema examination had been the mainstay in the evaluation of patients suspected of having acute diverticulitis, but its sensitivity did not exceed 77%-86%. The signs could be localised extravasation of contrast material, colonic fold thickening and distortion, localised mass effect.¹ Many believe that this procedure is contraindicated in acute cases; if done, water-soluble contrast material should be employed.²

Ultrasound has gained a lot of popularity due to its high degree of accuracy; its widespread availability, relatively low cost, and no need for patient preparation and contrast agents. It can have a sensitivity of 84%-100% especially with graded compression technique.¹ The use of intravaginal ultrasound

gives a higher sensitivity for evaluation of gut pathology and ruling out gynaecological causes of acute abdomen.³

CT has made a significant impact on the diagnosis of gastrointestinal disorders associated with perienteric inflammatory extension.⁴ CT is becoming the primary imaging modality for evaluation of patients with clinical symptoms of acute abdomen and a confusing clinical picture.¹

According to a study, a very accurate method for ruling in or out acute diverticulitis is spiral CT after contrast material administered only through colon (99% accuracy).⁵

Two sets of criteria should be used for a diagnosis of diverticulitis to be established:

1. Mural changes:
 - 1a- bowel wall thickening
 - 1b- presence of diverticula

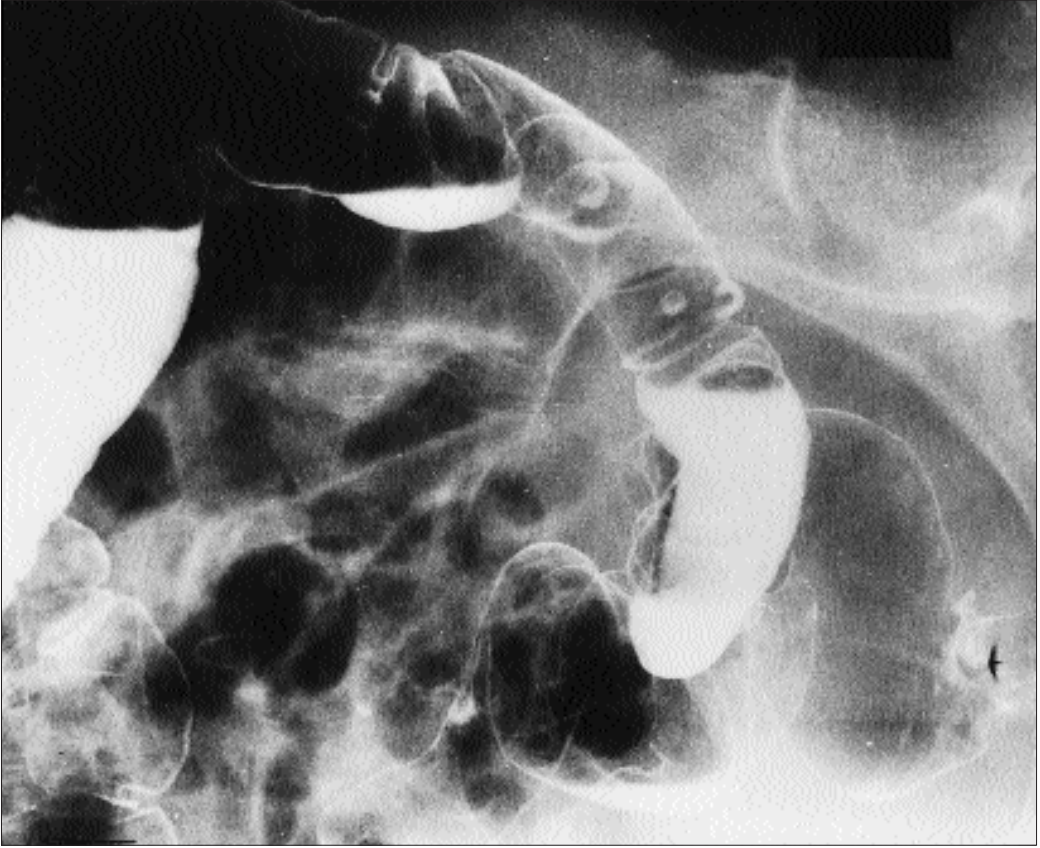


Figure 3. Double contrast barium enema study showing a free lumen and diverticulosis. The examination was done after receiving treatment and regression of symptoms.

2. Extramural changes:

2a- paracolic fat inflammation

2b- paracolic abscess formation

For a definite diagnosis of diverticulitis one from each group should be present.

Several studies show that the sensitivity and specificity of ultrasound and CT in detecting the above mentioned signs is almost the same, except that CT is more sensitive for detecting the extramural changes and diverticula. A problem, which exists, is that none of these signs are specific for diverticulitis, but could also be seen in other tumoral, inflammatory, ischemic conditions and further research should be done for finding specific signs.

According to some authors, the “arrow-head sign” in CT could be specific for diverticulitis (contrast material or gas seen pointing towards the opening of a diverticulum). Another helpful sign, but not specific, is the increasing width of right anterior extrarenal space, which is seen in inflammatory and tumoral conditions of the abdomen.

There are other conditions mimicking acute diverticulitis e.g. appendicitis, pelvic inflammatory disease, ectopic pregnancy, oophoritis, renal colic, ischemic colitis, bowel obstruction, colon cancer.¹ Cancer of the sigmoid colon appears as the main differential diagnosis⁶, so it is wise to rule out carcinoma after resolution of the acute event with the

follow-up colonoscopy-barium enema study. Appearance of lymph nodes along with thickened bowel wall also speaks in favor of cancer rather than of a chronic inflammatory process.⁸

Conclusions

Ultrasound is the first line imaging modality in ruling in or out acute diverticulitis or other similar conditions mimicking acute diverticulitis clinically.

In cases of critically ill patients presenting with an acute abdomen, CT should be considered as the first line modality.

Patients should be followed up by barium enema study for ruling out cancer after resolution of the acute event.

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