



Percutaneous ultrasound-guided bowel biopsy of a pseudokidney mass

Question

A 35-year-old man was admitted to our department for weight loss, long-lasting constipation, and abdominal pain. Abdominal ultrasound (US) examination revealed a segmental wall thickening of the sigmoid colon with an ultrasound aspect of a pseudokidney lesion (70 mm in diameter) (Figure 1). The concerned bowel tract had no cleavage from the bladder. Furthermore, a thickening of the pericolic fat was de-

tected. Computed tomography (CT) confirmed the presence of a homogeneously dense lesion of the sigmoid colon tightly connected to the bladder and suspicious for malignancy. Colonoscopy was performed and stopped at the distal sigmoid colon because of the presence of a non-ulcerated stricture. Therefore, a percutaneous US-guided bowel biopsy of the pseudokidney lesion was performed using a 21-G needle without bleeding or other complications.

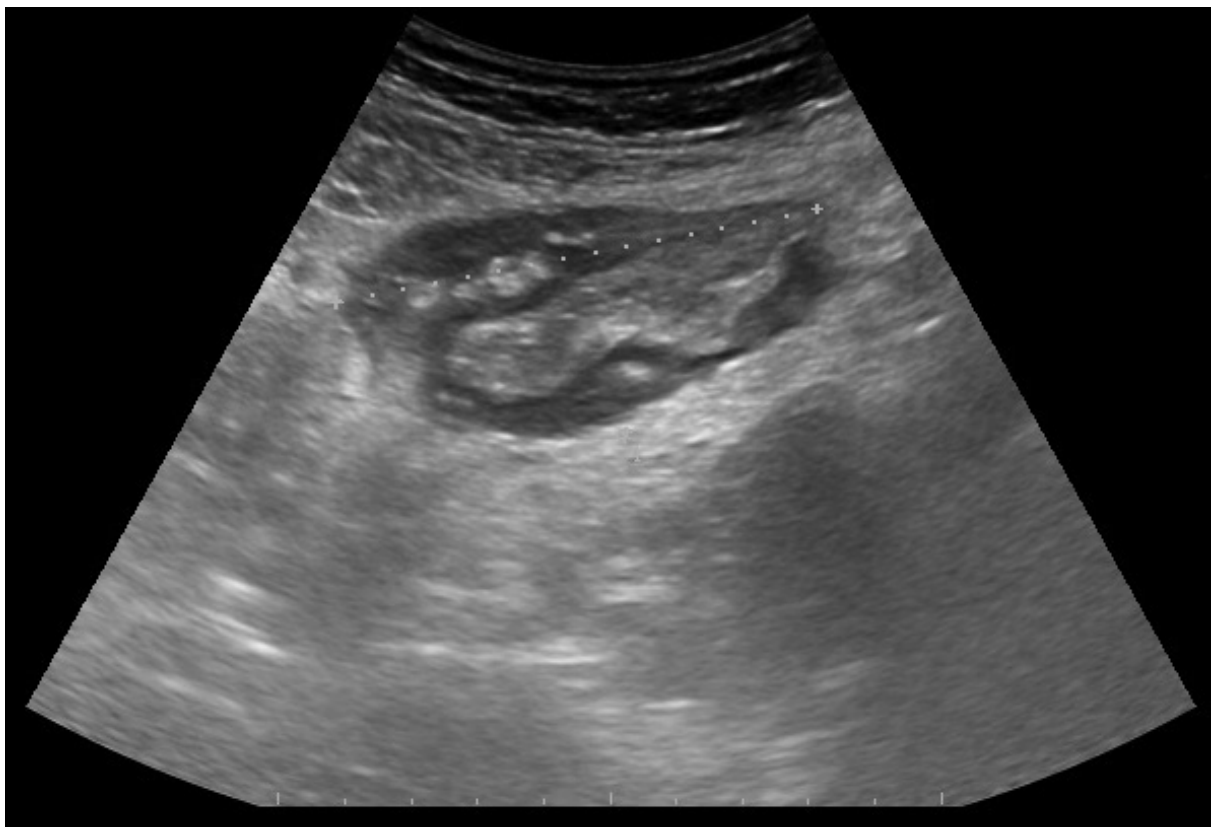


Figure 1. Ultrasound image of a pseudokidney lesion in the sigmoid colon

Answer: Diverticulitis of the sigmoid colon

Histological diagnosis demonstrated the presence of a large amount of lymphocytes and other inflammatory cells, with no atypical or neoplastic changes, thereby suggesting a diagnosis of diverticulitis. Antibiotic therapy was administered without clinical and radiological benefit. In addition, with respect to acute inflammation, because a lack of neoplastic cells cannot completely rule out the presence of malignancy, the patient was referred to the surgery department. A laparoscopic resection of the mass that involved the sigmoid colon and a part of the bladder was performed, and the suspected diagnosis of diverticulitis was confirmed.

Diverticular disease is one of the most frequent gastroenterological diseases, particularly in the elderly population, because its incidence dramatically increases after 60 years of age. Its socioeconomic impact is evidently huge and is enough to consider that it is a leading cause of hospitalization in the United States (1). However, most patients fortunately experience an uncomplicated diverticular disease with a benign course, and thus, only require medical management. Surgery is infrequent and usually reserved for cases of complicated disease and/or for those not responding to medical therapy alone. Although a diagnosis of diverticulosis can be easily made by colonoscopy, acute diverticulitis is in general a contraindication for endoscopic examination owing to the high risk for perforation, and thus, should be delayed by 3-4 weeks. Therefore, radiological investigation usually becomes paramount. In this regard, whereas in the United States, CT is considered the gold standard for diagnosing acute diverticulitis, in the other Western countries and Eastern world, abdominal US plays a major role in the diagnostic workup of this disease. In fact, ultrasonography is used worldwide for the differential diagnosis of various gastrointestinal (GI) disorders because of its high reliability and feasibility. Furthermore, its low invasiveness and cost make ultrasonography a common and easy diagnostic tool, even during emergency. The ultrasonographic detection of colonic diverticula, which appear as rounded protrusions of the colonic wall, is not pathognomonic for acute diverticulitis but only identifies the anatomical presence of colonic diverticula. The diagnosis of mild uncomplicated acute diverticulitis is instead based on specific sonographic findings such as the presence of one or more inflamed diverticula within the colonic wall, which is usually more thickened. In the case of severe or complicated acute diverticulitis. Ultrasonography is usually not helpful for highlighting the presence of inflamed diverticula because these are often embedded in the thickened intestinal wall. Thus, in the case of severe and/or complicated acute diverticulitis, it is mandatory to assess the presence of other US signs such as thickening of the bowel wall (>3 mm) with or without loss of wall stratification, thickening of the mesentery, or the presence of neighboring inflamed lymph nodes. In the case of a complicated disease, US can detect the presence of a neighboring fluid pocket of an ab-

scence and/or a narrowed intestinal lumen. Of course, in the diagnosis of acute diverticulitis, the correlation of the imaging findings with the clinical symptoms and laboratory test results is crucial. Usually, patients present with fever and complaints of pain, either spontaneous or caused by palpation of the left iliac fossa, associated with an increase in serum markers of inflammation (2,3). The sonographic feature of acute diverticulitis is the so-called pseudokidney sign, in which a section of the intestinal tract involved in inflammation acquires a kidney-shaped appearance. Therefore, the intestine presents a peripheral hypoechoic border that mimics the renal cortex surrounding a hyperechoic center, which instead resembles the renal medulla. This sonographic finding is very important for the clinician, but although very accurate for intussusceptions, it is not pathognomonic but is found in necrotizing enterocolitis, volvulus, intestinal tuberculosis, Crohn disease, and intestinal adenocarcinoma or lymphoma. Percutaneous US-guided biopsy of the GI tract is an uncommon procedure, but in selected cases, it can be helpful if not essential for clarifying the differential diagnosis of lesions of the GI tract. In fact, when endoscopy is not feasible even with pediatric scopes or in the case of previously negative endoscopic biopsies and brushes, US-guided biopsy can be a diagnostic tool of considerable importance, thus avoiding unnecessary surgical diagnostic procedures (4,5). In our case, we diagnosed severe complicated diverticulitis in a young man who presented with non-specific symptoms of diverticulitis. Moreover, the specific sonographic signs of acute diverticulitis were not detected during the preliminary US examination, and only the pseudokidney sign was reported. In similar cases, CT should be performed in addition to US. In some situations, if the symptoms are atypical, CT is not diagnostic, endoscopy is not feasible, or in the event of previously negative endoscopic biopsies, a percutaneous US-guided bowel biopsy can be performed to shorten the diagnostic workup period, achieve a therapeutic decision, and improve cost-effectiveness. However, in the case of an abdominal mass, although the histological detection of neoplastic cells is diagnostic, the finding of inflammatory changes alone cannot definitively rule out a malignancy; thus, a close follow-up is recommended (6).

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Gastroenterology Unit; AOU Careggi University Hospital, Florence, Italy

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

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