# A giant abdominal cyst with raised levels of carbohydrate antigen 19-9

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## Abstract

**A 53-year-old woman was admitted with upper abdominal discomfort. Clinical examination revealed a mass of the upper left quadrant. Computed tomography disclosed a giant cystic lesion of 19 × 16 cm compressing the body and tail of the pancreas as well as the left kidney. Endoscopic ultrasound showed an anechoic lesion with multiple septa. Diagnostic fine needle aspiration was performed. Intracystic carcinoembryonic antigen and lipase values were normal. However, carbohydrate antigen 19-9 level was elevated (3433 UI/ml) and cytologic examination was compatible with a pancreatic serous cystadenoma. Prompted by the symptoms and the lack of a definite diagnosis, the patient underwent cystectomy. Surprisingly the histological diagnosis was that of a benign renal cyst. To date, only one case of a giant renal cyst has been reported with high levels of CA 19-9. With this case report we would like to demonstrate that giant renal cysts may present high levels of CA 19-9 and mimic the endoscopic ultrasound aspect and cytologic features of pancreatic cysts.** (Acta gastroenterol. belg., **2013**, 76, **439-440**).

## Introduction

Pancreatic cystic lesions include pseudocysts, serous cystadenomas and mucinous neoplasms. Clinical and radiological criteria are often inadequate to discriminate reliably between these pathologies. A combination of endoscopic ultrasound (EUS) features, fluid cytology, pancreatic enzyme levels and tumor markers may improve accuracy in detecting potentially malignant lesions. The most useful laboratory marker is the carcinoembryonic antigen (CEA), which is found in high levels in mucinous tumors, whereas levels are low in pseudocysts (unless infected) and serous cystadenomas (1). According to the latest guidelines of the European Society of Gastrointestinal Endoscopy, CEA levels > 800 ng/ml suggest the diagnosis of a mucinous neoplasm with a sensitivity of 48% and specificity of 98% (2). Carbohydrate antigen 19-9 (CA 19-9) is another tumor marker that has been used in differentiating mucinous cysts from other cystic lesions of the pancreas. Frossard *et al*., found that a CA 19-9 level of greater than 50.000 U/ml has a 15% sensitivity and 81% specificity in distinguishing mucinous cysts from other cystic lesions (3). However, the usefulness of this marker has been limited since it can be raised in inflammatory conditions and when biliary obstruction is present. In addition high intra-cystic CA 19-9 levels have been detected in non pancreatic cystic lesions such as thyroglossal duct and branchial cleft cysts (4) splenic cysts (5), oesophageal cysts[6) and in a single case of giant benign renal cyst (7).

## Case report

A 53-year-old female patient was admitted with upper abdominal discomfort. Clinical examination revealed a mass of the upper left quadrant. Laboratory findings were normal, including CA 19-9 levels. Computed tomography disclosed a giant septated cystic lesion of 19 × 16 × 13 cm, compressing the body, tail of the pancreas and the left kidney (Fig. 1). However, it was not clear whether the cyst originated from the pancreas or the left kidney. In order to further interrogate the nature of the cystic lesion the patient was addressed to our department. EUS showed a giant cystic lesion with multiple thick septa (Fig. 2). However, we were not able to determine whether it originated from the pancreas or the left kidney. Fine needle aspiration (FNA) was performed (22 gauge Expect, Boston Scientific) for laboratory analysis. Next, the patient underwent a pancreatography which did not reveal any communication between the cyst and the pancreas. Cystic fluid levels of CEA and lipase values were normal. However, CA 19-9 value was high (3433 UI/ml) raising the question of a mucinous cystadenoma of the pancreas. Nevertheless, cytologic examination revealed only benign cubic epithelial cells and the periodic acid schiff staining was negative for mucus. Prompted by the symptoms and the lack of a definite diagnosis, the patient underwent surgical resection of the cyst. Surprisingly, histology revealed cubic and columnar epithelium as well as glomeruli with fibrotic changes, suggesting a benign renal cyst.

## Discussion

Cysts of the pancreas display a wide spectrum of histology including inflammatory (pseudocysts), benign (serous), premalignant (mucinous) and malignant lesions (mucinous, neuroendocrine tumors). The diagnostic approach includes imaging tests, FNA, and cyst fluid analysis. Since, none of these modalities is uniformly effective, the diagnosis is usually based on the combination of the acquired informations. In our case, the presence of

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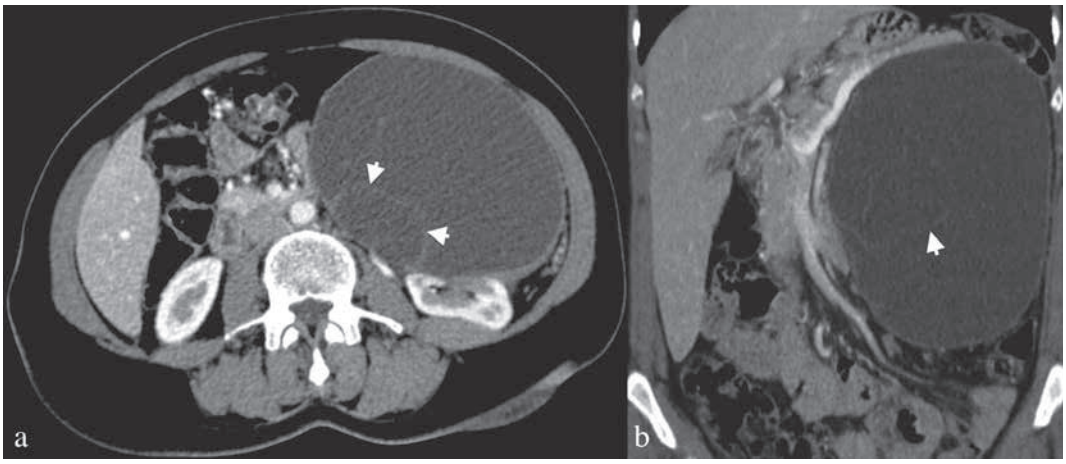


Fig. 1. — Computer tomography disclosed a giant cystic lesion with septa (arrows) in contact with the pancreas and the left kidney. a. Transverse section. b. Coronal section.

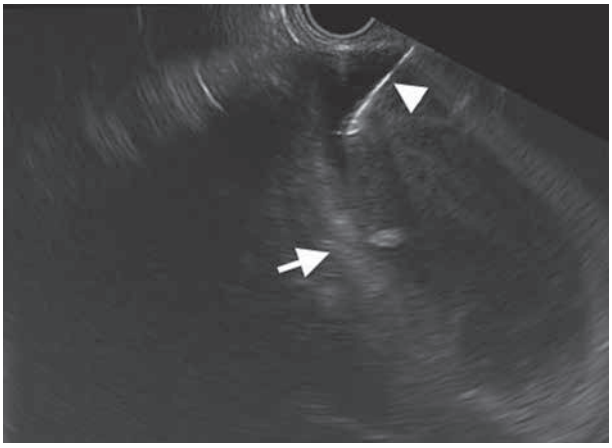

Fig. 2. — Endoscopic ultrasound revealed multiple septa (arrow). The arrowhead shows the tip of 22 Gauge needle inside the cyst.

multiple septa, a cytologic examination compatible with a serous cystadenoma, and the high level of CA 19-9 led us falsely to the initial diagnosis of a pancreatic cystic lesion. Apart from pancreas, high CA 19-9 values have been described in cysts from miscellaneous origins (4-7). A Pubmed research revealed one more case of giant benign renal cyst with both serum and intra-cystic CA 19-9 elevation (7). The proposed mechanism was that CA 19-9 is secreted by the lining epithelial cells into the cystic fluid, subsequently spreading to the vessels (7). This was supported by a positive immunohistochemical staining of the renal cystic lining cells with anti-CA 19-9 monoclonal antibodies.

In conclusion, giant renal cysts may present high levels of CA 19-9 and mimic the EUS aspect and cytologic features of pancreatic cysts.

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