

CASE REPORT

Small Undifferentiated Pancreatic Adenocarcinoma which Mimics IPMN at Imaging

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ABSTRACT

Context To present the case of an unusual presentation at imaging of a very small solid undifferentiated pancreatic adenocarcinoma which mimics a side-branch intraductal papillary mucinous neoplasm. **Case report** The patient came to our hospital for a reevaluation of a cystic pancreatic lesion. Ultrasound (US) and contrast-enhanced ultrasound (CEUS) examinations were carried out. A small cystic lesion of about 1.5 cm in diameter was seen in the posterior aspect of the pancreatic uncinate process. A very small, solid, vascularized nodule was detected at CEUS within the lesion. Consequently, the patient underwent CT and MRI. MRI confirmed the presence of an intralesional nodule and communication with the main pancreatic duct was demonstrated, suggesting the diagnosis of intraductal papillary mucinous neoplasm with solid intralesional tissue. A pylorus preserving pancreaticoduodenectomy was carried out. An undifferentiated adenocarcinoma having a notable peripheral inflammatory reaction and dilated branch duct was finally diagnosed. **Conclusion** To our knowledge, we present for the first time, the case of a very small solid undifferentiated pancreatic adenocarcinoma of the uncinate process which mimicked a side-branch intraductal papillary mucinous neoplasm at imaging. The cystic appearance may be an epiphenomenon of a solid lesion and this possibility has to be considered when one encounters incidental cystic lesions at imaging.

INTRODUCTION

According to the WHO classification, undifferentiated (anaplastic) pancreatic adenocarcinoma is a rare aggressive variant of classic ductal adenocarcinoma [1], representing 2-7% of all pancreatic neoplasms [1, 2]. Commonly it appears as a large solid mass, moderately hypervascularized on dynamic CT or MR, with areas of necrosis and less frequently of hemorrhage, and occurs with decreasing frequency in the body, tail and head of the pancreas [2, 3]. Due to its atypical features compared to classic ductal adenocarcinoma, a correct imaging diagnosis may be difficult.

To our knowledge, we present for the first time, the case of an unusual presentation at imaging of a very small, solid, undifferentiated pancreatic adenocarcinoma which mimicked a side-branch intraductal papillary mucinous neoplasm (IPMN).

CASE REPORT

A single cystic lesion in the pancreatic head, with a diameter of about 1.5 cm, was incidentally found during an ultrasonographic follow-up examination for gallbladder adenomyoma and stones in an asymptomatic 60-year-old Caucasian woman. Laboratory tests revealed pancreatic amylase of 264 U/L (reference range: 13-53 U/L). Tumor markers were normal (CA 19.9: 7 U/mL, reference range: 0-25 U/mL; CEA 2.9 ng/mL, reference range: 0-5 ng/mL). The patient came to our hospital for a reevaluation of the pancreatic lesion. Ultrasound (US) and contrast-enhanced ultrasound (CEUS) examinations were performed. A small microcystic lesion of about 1.5 cm in diameter was confirmed in the dorsal aspect of the uncinate process of the pancreas (Figure 1a). A solid, vascularized mass, was detected at CEUS within the lesion. A CT examination confirmed the presence of a very small lesion in the uncinate process of the pancreas with a slightly dilated main pancreatic duct (Figure 1b). At MRI examination a small intralesional solid nodule (Figure 1c) was confirmed and its communication (Figure 1d) with the slightly dilated main pancreatic duct was demonstrated, suggesting the diagnosis of IPMN with solid intralesional tissue (Figure 1c). The diagnosis of degenerated branch duct IPMN was so certain at imaging that an endoscopic US examination was not carried out.

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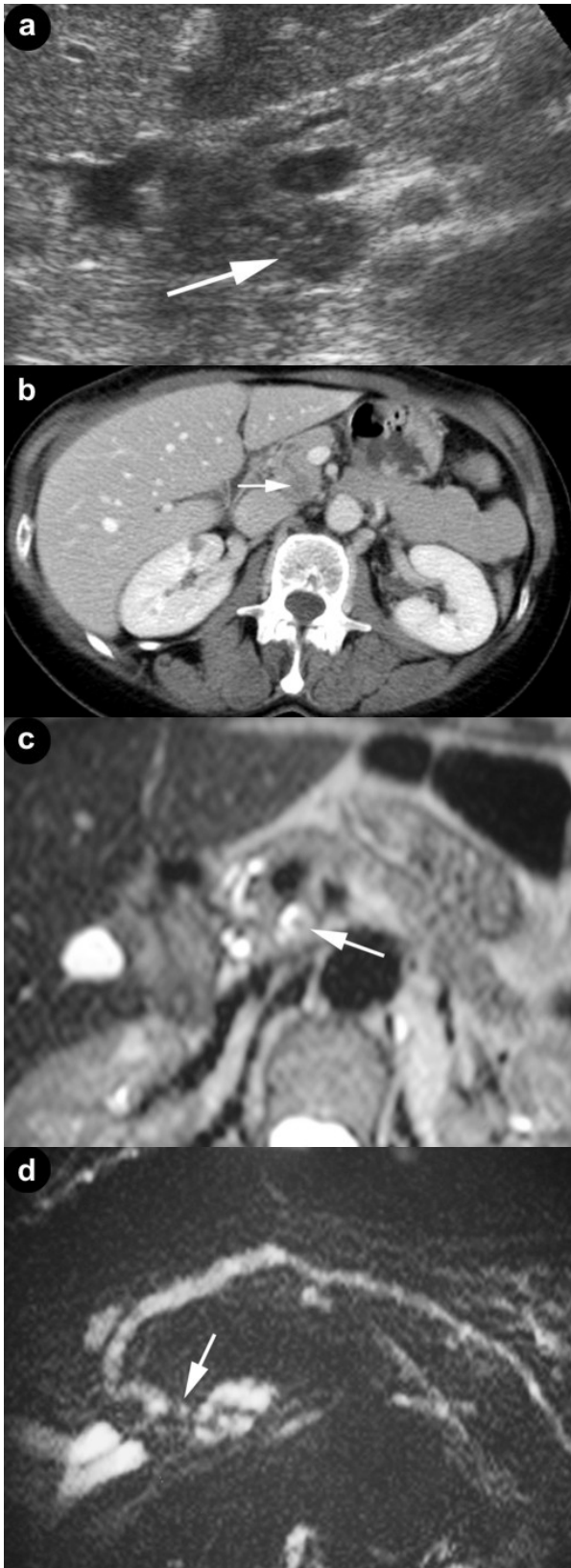


Figure 1. Wrong diagnosis of IPMN at imaging. **a.** Ultrasound examination revealed the presence of a small microcystic lesion (arrow) of the pancreatic uncinus process with solid intralésional tissue and a slight dilation of the main pancreatic duct. **b.** At CT the lesion (arrow) was confirmed with a cystic appearance. MRI also confirmed the cyst which contained a small intralésional nodule (**c.** arrow) communicating with the main pancreatic duct (**d.** arrow). Moreover, a slight dilation of the main pancreatic duct was documented.

The patient underwent a pylorus preserving pancreaticoduodenectomy. The resected specimen was a firm, yellowish small solid lesion of 8 mm in diameter with spiculated margins (Figure 2). An adjacent branch duct (which was dilated owing to the retraction effect from the desmoplastic component of the lesion), was responsible for the cystic appearance of the lesion at imaging. The final diagnosis was an undifferentiated adenocarcinoma with a notable peripheral inflammatory reaction.

DISCUSSION

Incidental pancreatic cysts are not as rare as they were once thought to be thanks to the great advantages of high resolution multiplanar imaging [4]. In asymptomatic patients, cysts measuring less than 2 cm have a 3.3-3.5% risk of being cancerous with a percentage of premalignant lesions ranging from 42 to 50% [5, 6, 7, 8]. The small cysts are most commonly located in the uncinus process, neck and distal pancreas, accounting for the lower frequency of symptoms at the time of diagnosis [5, 9]. The diagnosis and follow-up of incidental cystic pancreatic lesions are frequently based on imaging.

IPMNs show a broad variety of histological types ranging from adenoma to invasive cancer [10]. Management of such lesions has been widely discussed in the literature [5, 6, 7, 8, 9]. In the case of incidental pancreatic cysts smaller than 2 cm Handrich *et al.* suggested a follow-up [11]. In 90% of symptomatic patients Lee *et al.* reported the malignant aspect of cystic pancreatic neoplasms [7].

We describe the case of an asymptomatic patient, with an incidental small undifferentiated adenocarcinoma which mimicked a cystic lesion erroneously diagnosed as a branch duct-type IPMN at imaging.

Histology described an undifferentiated adenocarcinoma of 8 mm in size. At the time of diagnosis, this rare tumor is usually large and is associated with a

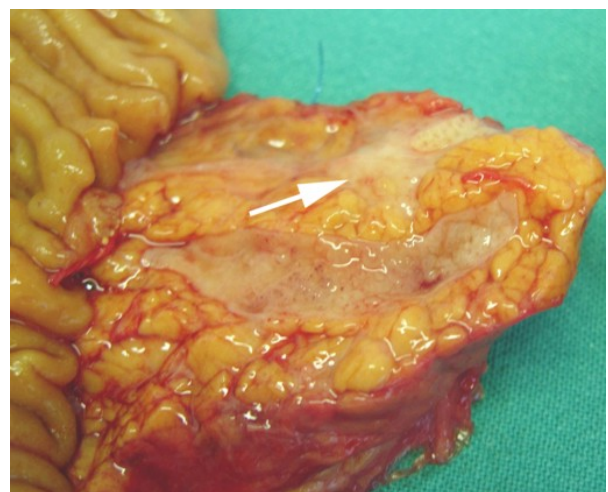


Figure 2. Final diagnosis of small solid undifferentiated pancreatic adenocarcinoma. The resected specimen shows a small (8 mm) solid lesion (arrow) of the uncinus process of the pancreas with spiculated margins and well visible adjacent dilated branch duct, owing to the retraction effect from a desmoplastic reaction, responsible for the cystic appearance of the lesion at imaging.

poor survival rate [2]. In our case, the solid lesion was very small with infiltrating margins and had an adjacent branch duct which was dilated owing to the retraction effect from desmoplastic reaction and which was responsible for the cystic appearance of the lesion at imaging. Moreover, there was a rich inflammatory component all around the lesion. Ductal ectasia may occur both in the main and branch ducts, therefore a differential diagnosis from IPMN is strongly indicated [12].

Two similar tumors were reported by Kosmal *et al.*, in an anatomopathological study of pancreatic ductal adenocarcinomas with cystic features, in which three other cystic presentations of ductal adenocarcinoma were observed. [13].

To our knowledge, we present for the first time, the case of a very small solid undifferentiated pancreatic adenocarcinoma of the uncinata process which mimicked a side-branch intraductal papillary mucinous neoplasm (IPMN) at imaging. The cystic appearance may be an epiphenomenon of a solid lesion and this possibility, although rare, has to be considered when encountering incidental cystic lesions at imaging.

Conflict of interest The authors have no potential conflicts of interest

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