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# Dermoid cyst of the pancreas: A rare cystic neoplasm

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ABSTRACT

*INTRODUCTION:* Dermoid cyst of the pancreas, also called cystic teratoma, is a benign, well-differentiated, and extremely rare germ cell neoplasm. Preoperative diagnosis is challenging since there are no definitive preoperative diagnostic tests or pathognomonic findings.
*PRESENTATION OF CASE:* We report a case of a 54-year-old male who presented with an incidentally detected pancreatic cystic mass at the tail of the pancreas. Computerized tomography revealed a benign cystic mass such as oligocystic serous cystadenoma or a hemorrhagic cyst. However, a high CEA level from EUS guided aspirated fluid suggested mucinous cystic neoplasm. After laparoscopic spleen-preserving distal pancreatectomy, the final diagnosis was confirmed as a dermoid cyst of the pancreas.
*CONCLUSION:* Despite the benign nature of the dermoid cyst, complete surgical resection is mostly inevitable due to the difficulty of preoperative diagnosis as in the present case.


## 1. Introduction

Dermoid cyst of the pancreas, also called mature cystic teratoma is an extremely rare germ cell neoplasm with only a few published case reports [1]. Diagnosis of these lesions is challenging, due to inadequate preoperative diagnostic tests or pathognomonic findings. We report a case of a dermoid cyst of the pancreas in a 54-year-old man with a review of previously published cases.

## 2. Case report

A 54-year-old man with a past medical history for HBV-related liver cirrhosis presented with an incidentally detected cystic mass of pancreas tail. On physical examination, his abdomen was soft, and there was no palpable abdominal mass. Laboratory studies including an examination of tumor markers (CEA, CA19-9) in the serum were normal. A contrast-enhanced CT scan of the abdomen showed a 4.2-cm lobulated and inhomogeneously low attenuating mass at the tail of the pancreas (Fig 1). MRI revealed protein-rich fluid content in the large locule of the cystic mass, and radiologist suggested a benign cystic mass such as oligocystic serous cystadenoma or hemorrhagic cyst (Fig 2). To differentiate the diagnosis, Endoscopic ultrasound (EUS) and fine needle aspiration (FNA) of

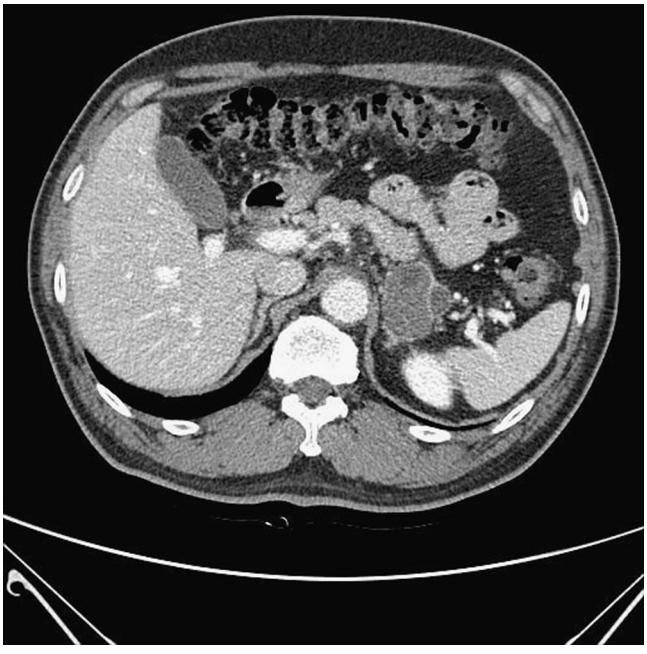

**Fig. 1.** Computed tomographic findings of the pancreatic mass. The contrast scan shows a bi-loculated and slightly hyperdense (40HU) cystic mass with no enhancing mural nodule in the pancreatic tail.

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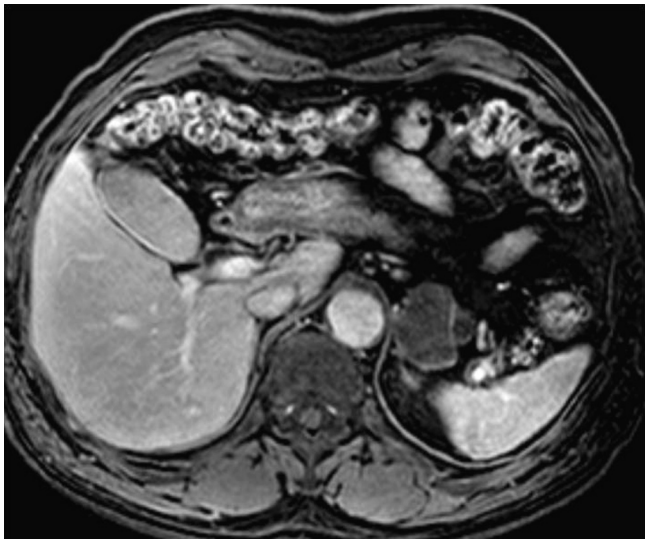

**Fig. 2.** Magnetic resonance imaging findings of the pancreatic mass. Fat suppressed T2 weighted imaging shows a bi-loculated cystic mass at the pancreatic tail.

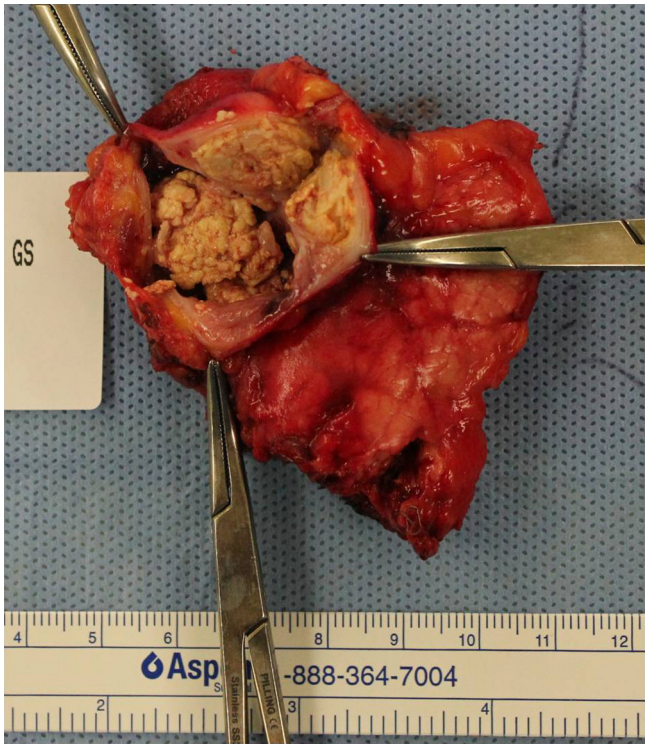


**Fig. 3.** Macroscopic view of the tumor. Surgical specimen shows that the cyst is filled with finely granular, grayish white, keratinaceous and sebaceous material.

the lesion were performed. The level of CEA from aspirated fluid was elevated to 6941 ng/ml, but cytology results were negative for malignant cells. Thus, mucinous cystadenoma was suspected, and the patient underwent laparoscopic spleen preserving distal pancreatectomy. Intraoperatively, the tumor was found to originate from the pancreatic tail, and it was hardly adherent to the stomach and retroperitoneum. Cross sections of the excised specimen showed a 4.5-cm cystic mass encapsulated by a thin wall and containing a yellowish white material with a caseous appearance (Fig. 3). Microscopically, the cyst was lined with stratified squamous epithelium with sebaceous glands in the underlying stroma, surrounded by abundant lymphoid infiltrate with germinal centers (Fig. 4). No cellular atypia or mitotic activity was identified and there was no invasion of surrounding structures. The final diagnosis was a dermoid cyst of the pancreas. The postoperative course was uneventful and the patient discharged 8 days after surgery. At the 12-month follow-up, the patient was asymptomatic, without any evidence of recurrence.

## 3. Discussion

Teratomas are neoplasms of germ cell origin and they can be classified as mature or immature on the basis of the presence of immature neuroectodermal elements within the tumor [2]. The mature type can be further classified as solid or cystic. Due to their preponderance toward ectodermal (skin and skin adnexal structure) differentiation, mature cystic teratomas are better known as dermoid cysts. The pancreas is the rarest site of presentation of dermoid cysts [3]. According to literature review [1], the median age at diagnosis was 40 years (range 0.3–74 years), without gender preference (15 females, 20 males). All but five patients were symptomatic, and in the symptomatic patients, the most common

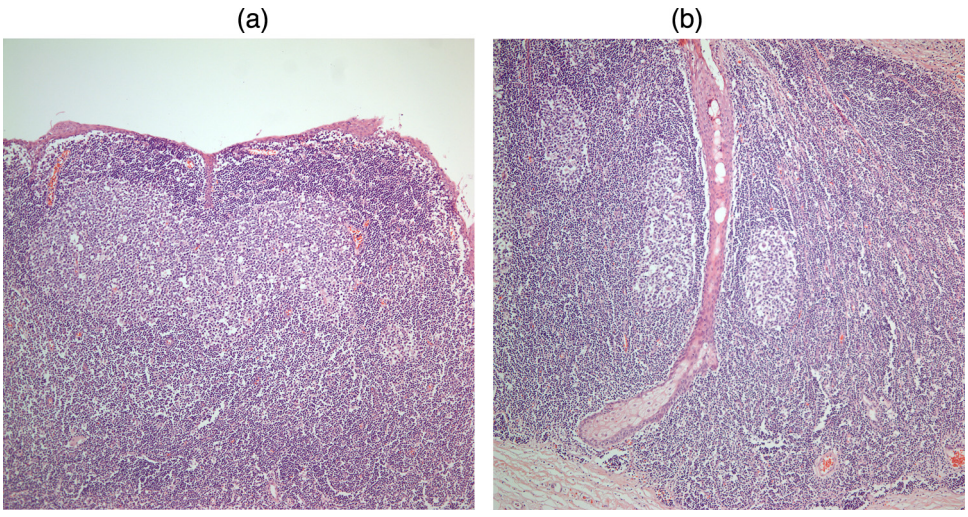


**Fig. 4.** Pathological findings of the cystic lesion. Hematoxylin and eosin stain (original magnification 40×). The dermoid cyst appears lined by keratinized squamous epithelium with sebaceous glands and immediately adjacent, dense diffuse lymphoid cell infiltration that contains lymphoid follicles (4-a) and hair follicle in the cystic wall (4-b).

presenting symptoms were abdominal or back pain [1]. No pathognomonic data is known on imaging studies because the radiologic features depend on the proportions of their various components. The presence of fat/fluid or hair/fluid levels is considered pathognomonic of dermoid cysts in other locations, but their presence in the pancreas occurs in only a minority of cases [4]. In our case, fat-fluid level was not present on both CT and MRI, therefore, preventing diagnosis preoperatively. Recently, EUS-guided fine needle aspiration (EUS-FNA) has been presented as a valuable diagnostic adjunct for preoperative evaluation [5]. However, a lack of data limits its utility for the pre-operative diagnosis of pancreatic dermoid cysts. The present case showed a high CEA level suggesting mucinous cystic neoplasm. Since there have been no reports of tumor markers in the fluid of dermoid cysts until now, further research is needed.

To date, surgical removal remains the standard treatment of dermoid cysts of the pancreas. Clinical observation based on imaging results or FNA cytology has not been reported yet. If accurate diagnoses were made preoperatively, resection of dermoid cysts could be avoided considering the low risk of malignant transformation of ovarian mature teratoma [3,6]. Nevertheless, until more cases of dermoid cysts are identified to further elucidate its natural history and improve the reliability of preoperative diagnoses, surgical resection should still be considered as the standard therapy in order to exclude malignant or borderline malignant neoplasms.

In conclusion, dermoid cysts of the pancreas are rare benign, and congenital tumors. Preoperative diagnosis is challenging, and surgical resection is the standard treatment.

## Conflict of interest

There is no conflict of interest to be disclosed.

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