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Case Report

Cystic Teratoma of the Pancreas

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Abstract
Congenital cystic lesions of the pancreas are rare findings. Furthermore, dermoid cyst of the pancreas is exceptionally uncommon. A review of the world literature showed that only 18 documented cases of dermoid cyst of the pancreas were reported so far. The pre-operative evaluation of this lesion is rather questionable, with definitive diagnosis taking place intra-operatively. Herein, we presented a 4-year-old female with a symptomatic 6-cm cystic mass in the head of her pancreas.
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Keywords ● Cystic teratoma ● dermoid cyst ● pancreas

Introduction

Teratomas can be divided into two subtypes, mature and immature. The mature type can be further subdivided into solid and cystic types. The latter type is also known as dermoid cyst.[1] A review of the medical literature published in English retrieved almost 20 cases with isolated dermoid cyst in pancreas, the rarest site.[2] Derived from totipotent stem cells, they possess the ability to generate tissues from all three germ layers.[1] Herein, we presented a case of pancreatic dermoid cyst.

Case Report

A four-year-old female presented with non-specific epigastric pain for several weeks. Physical examination revealed mild epigastric tenderness. Laboratory studies were essentially normal (table 1). She also had a normal abdominal x-ray. Computed tomography (CT) of the abdomen demonstrated a 6.5×3.5×3.0 cm soft tissue mass arising from the head of the pancreas with possible extension to the posterior stomach (figure 1).

Ultrasonography confirmed a cystic lesion arising from the pancreatic head measuring 5.5×3.5×3 cm. No septations, vascular invasion or solid components were identified. However, the lesion did exhibit a non-homogenous appearance.

The patient underwent surgery for proximal pancreatectomy. Intra-operatively, a cystic lesion was palpated arising from the head of the pancreas without any infiltration into the surrounding tissues. The lesion was intra-pancreatic. Its borders were well-defined and the mass contained predominantly sebaceous material.

A simple cystectomy without any compromises to the surrounding pancreatic parenchyma, was performed. Pathological evaluation revealed a benign teratoma (dermoid cyst). Histologically, the mass contained stratified squamous epithelium and skin appendages, surrounded by fibrosis and inflammatory cells (figure 2). Our patient had an uneventful postoperative stay and was discharged home on the third post-op day. Laboratory values prior to discharge were again normal.

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Table 1: Laboratory results

Indice	Patients
White blood cells (×1,000/uL)	7
Hematocrit (%)	42
Platelets (×l ,000/uL)	290
Glucose (mg/dL)	120
Total bilirubin (mg/dL)	0.5
Direct bilirubin (mg/dL)	0.3
Alkaline phosphatase (IU/L)	52
AST (IU/L)	40
ALT (IU/L)	35
Amylase (IU/L)	82
Total cholesterol (mg/dL)	133

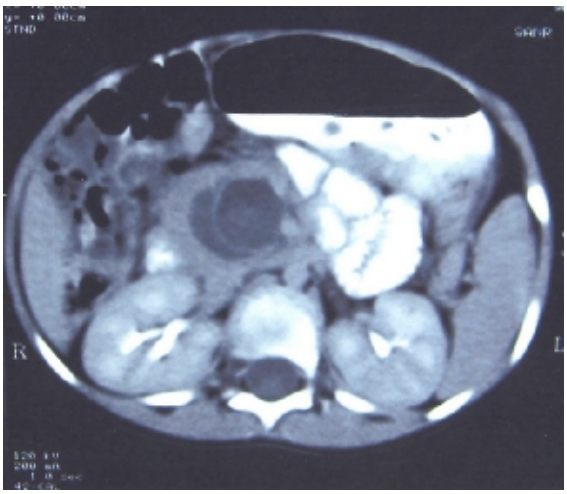

Figure 1: Computed tomography shows a homogenous mass arising from the head of the pancreas.

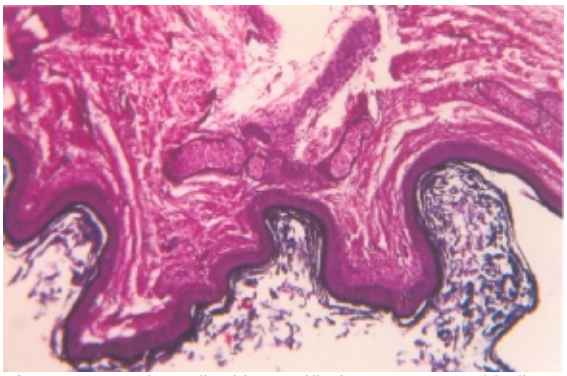

Figure 2: Cystic wall with stratified squamous epithelium and skin appendages (sebeaseous units and hair follicle)

Discussion

Dermoid cysts are thought to arise from the embryonic inclusion of skin, at the time of neural groove closure.[3] Therefore, they are typically found lying along the midline. Most commonly located in the ovaries, they have been found at several extragonadal sites, the pancreas being the rarest site.

Among the list of differentials are pseudocyst and neoplastic cysts, including both benign and malignant lesions. As stated by Brugge, et al, the clinical challenge rests in distinguishing the more common benign cystic lesions from their rarer malignant cysts.[4] Our clinical concern was, therefore, to rule out a malignant process. Though benign, dermoid cysts are proven clinically and radiologically as challenging conditions in their differentiation from the more concerning lesions, but once identified, it can be treated appropriately.

Like most pancreatic cystic lesions, their clinical presentation is nonspecific. The symptomatology has ranged from an asymptomatic palpable mass to an obstructive jaundice with liver failure. Most patients though, present with varying degrees of abdominal pain, back pain, vomiting and jaundice.

Laboratory values are mostly normal unless an obstructive pattern to the normal drainage of biliary or pancreatic secretions exists. Unlike dermoid cysts elsewhere in the body, little radiographic evidence is available regarding their pancreatic location. However, extrapolating the documented findings to the pancreas, it appears equally so that the radiologic appearance of these lesions depends on the proportions of the various tissues they are composed of.[5] Ultrasound can initially define the mass as cystic, without septations and with distinct margins. The fatty component of the cyst however causes a hyperechoic appearance with focal areas of high-intensity signals plus acoustic shadowing secondary to the presence of calcified tissues.[5] CT can confirm these areas of calcifications, presence of fat and characterize the fluid as sebum, serous or complex.[5] Magnetic resonance imaging (MRI) can also be performed for further characterization. We did not perform MRI. Nevertheless, the expected findings include low signal intensity on T_1-weighted images,[5] areas of fat-fluid level, and a mass with a distinct margin.

At this point, an excisional biopsy is usually performed with the possibility of a more extended resection, if warranted. In 1991, Markovsky, et al,[6] described the findings of the first reported pre-operatively diagnosed cystic teratoma by fine needle aspiration. The cytological findings included mature benign squamous cells, keratin debris and inflammatory cells (the three predominant cell types, also found in ovarian dermoid cyst).[6] Despite our failure to perform a fine needle aspiration, we believe in its selective utility in asymptomatic patients and those patients who are considered high-risk surgical candidates. If a differential diagnosis for a cystic lesion in the pancreas has been assimilated and radiologic evidence is inconclusive but consistent with the features presented above, a fine needle aspiration for cytologic analysis can confirm the diagnosis pre-operatively.

Treatment is surgical. For the 18 reported cases, the surgical procedures performed

included simple cystectomy (n=9, 50%), external drainage procedures (n=5, 20%), distal pancreatectomy (n=1, 6%), distal pancreatectomy plus splenectomy (n=1, 6%), and cystogastrostomy (n=1, 6%); one case was left unreported (6%). The trend over the years has steered away from external drainage procedures. They are not recommended because complete healing is unlikely, as the retained elements contain secretory epithelium and thus the possibility of recurrence or fistula formation is increased.[7] The mainstay of surgical therapy is therefore, simple cystectomy, unless otherwise indicated. In conclusion, although rare, dermoid cyst of pancreas gland should be included in the differential diagnosis of pancreas cystic masses,. Imaging studies, fine needle aspiration are important diagnostic tools in these cases.

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