Robotic Surgical Resection of a Pancreatic Dermoid Cyst: Case Report and Review of Literature of an Extremely Rare Neoplasm

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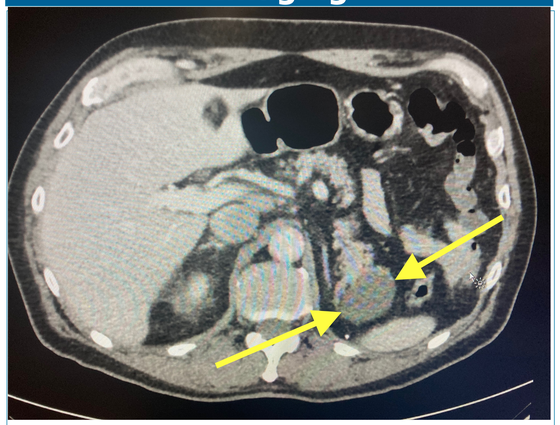
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Background

- Cystic Teratomas (or Dermoid Cysts) are congenital germ cell tumors that originate from totipotent stem cells and include all three dermal layers, endoderm, mesoderm, and ectoderm. [3, 5]
- More commonly found in the ovaries and testes but can be found at any site along the route of ectodermal cell migration (usually midline), such as the brain, cranium, mediastinum, omentum, retroperitoneum, and sacrococcygeal regions. [6]
- Pancreatic Dermoid Cysts are extremely rare, 0.5% of pancreatic cysts, and the first published case was by Kerr in 1918. [1, 5]
- Since 1918, there are only 55 additional published cases, with about 15% reported in the tail of the pancreas. [6,8].

Imaging



Axial slice of CT scan highlighting pancreatic tail cyst

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Objective

Our case presents the first detailed report of a robotic distal pancreatectomy with splenectomy for Dermoid Cysts of the Pancreas with prior retroperitoneal surgery.

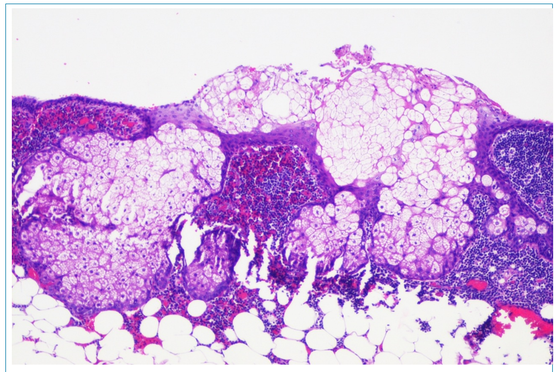
Case

- 72-year-old male with medical history of rheumatoid arthritis on certolizumab pegol, hypertension, a benign cyst of the left kidney status post left nephrectomy, and diverticulitis
- Referred for incidental findings of a pancreatic tail cyst during recent hospitalization for diverticulitis
- Denied any abdominal pain, nausea, vomiting, diarrhea, constipation, bloating, fullness, pancreatic exocrine insufficiency symptoms, or episodes of pancreatitis
- Computerized tomography (CT) scan revealed a cystic focus at the pancreatic tail measuring 5.1 x 3.6 cm with no main duct dilatation or pancreatic fluid collections
- Endoscopic ultrasound (EUS) that revealed an anechoic lesion suggestive of a cyst identified in the pancreatic tail with an overall impression of an intraductal papillary mucinous neoplasm – branch duct (IPMN– BD)
- Fine-needle aspiration (FNA) pathology was suggestive of amorphous material consistent with cyst contents and no lining epithelial cells were identified
- Carcinoembryonic AG (CEA) < 2.0ng/mL, Cancer Antigen 19-9 (CA 19-9) of 489 U/mL (elevated), Amylase of 57 U/L, and a Total PSA of 4.57 ng/mL. Liver enzymes were all within normal limits.
- Plan for robotic-assisted distal pancreatectomy with splenectomy which was successfully completed without complications
- Pathology was consistent with a 5.5 cm dermoid cyst of the pancreas, negative for malignancy in surrounding lymph nodes, omentum, and spleen.

Discussion

- Slight male predominance. [3,7]
- There is a diverse age range from 4 months to 74 years. [3,5,7]
- Teratomas are more common among pediatric patients. [9]
- Of pancreatic dermoid cysts, the majority occur in the body of the pancreas. Li et al suggested that the most common sites of presentation are pancreatic body (35.6%), the head (33.3%), the tail (15.5%), the body/tail (8.9%), and finally the head/body (6.7%). [8]
- Most pancreatic cysts are asymptomatic and only present as an incidental finding on imaging or postmortem during autopsy. [5]
- Magnetic Resonance Imaging (MRI) is the current preferred imaging modality for classification. [5]
- While the malignant degeneration of dermoid cysts in the pancreas has never been reported, it is estimated that 7-10% of other retroperitoneal teratomas are malignant. [5]
- Surgical excision is the principal method for the management of pancreatic dermoid cyst.

Histology



100x magnification H&E slide highlighting the cyst lining composed of benign squamous mucosa with sebaceous glands

Conclusions

- Robotic distal pancreatectomy with splenectomy is safe and feasible in patients with prior history of ipsilateral retroperitoneal surgery
- Further research should focus on pre-operative work up for proper diagnosis and further identification of incidence and prevalence.

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