Cystic Peripancreatic Neoplasm with High CEA Level.

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Abstract

A 34 yr old male with a previous history of germ cell tumor was found to have a peripancreatic cystic mass. EUS guided aspiration revealed an elevated CEA and cytology which suggested the possibility of a mucinous pancreatic neoplasm. Surgical resection demonstrated a cystic teratoma.

Methods: Video DVD capture with film editing using Adobe CS3 software.

Case Report:

34-year-old white male with a history of a non-seminomatous germ cell tumor of the right testicle stage IB disease (T2 NX MX) 18 months prior presented with persistent fatigue and vague abdominal symptoms. A CT scan of the abdomen revealed a cystic lesion that was adjacent to the duodenum, between the aorta and inferior vena cava, and was seemed contiguous to the uncinate process of the pancreas, see Video 1. A Visible Human image shows a model of the aorta, vena cava, pancreas and the approximate location of the lesion.

The patient was otherwise healthy. His germ cell tumor was originally diagnosed after the primary physician noted an enlarged testicle. Tumor staging at that time revealed no radiographic evidence of metastatic disease and the patient’s serologic tumor markers were negative. He elected to undergo orchiectomy followed by 2 cycles of chemotherapy with bleomycin, etoposide and cisplatinum. His past medical history was otherwise unrevealing and his physical exam was unremarkable.

The patient was referred for EUS of this peri-pancreatic lesion (video 2). Based on his history, the differential diagnosis included secondary cystic teratoma related to previous testicular germ cell tumor and an unrelated primary pancreatic cystic neoplasm.

EUS FNA of the cystic lesion returned clear fluid. Cytology showed bland epithelial cells, consistent with benign “transit mucosa”. The presence of macrophages in the fluid were consistent with a cystic lesion. Fluid analysis revealed a normal AFP, HCG, and amylase, but the CEA level was elevated at 2966 ng/ml.
Review of the patient’s previous CT scan taken prior to chemotherapy for his germ cell cancer was remarkable for absence of the currently identified cystic lesion. There was however, a prominent lymph node indentified in same periaortic space of the current cystic lesion. Although this node was not felt to be pathologically enlarged at the time of the initial CT evaluation, the resultant clinical course suggested that the lymph node could have been involved by his original germ cell tumor and was subsequently transformed into a teratoma following chemotherapy. Based on this consideration, the lesion was resected by the Urology service. The pathologic evaluation identified a lymph node involved by mature cystic teratoma characterized by gastrointestinal types of epithelium, some focal mature neural tissue, but no germ cell neoplasia identified. (Figures 1 - 2C)

Discussion:

This report describes an individual with a cystic neoplasm in the peripancreatic region that ultimately was shown to be unrelated to the pancreas.

Now common availability of high resolution computerized tomography and EUS FNA have accelerated the identification and characterization of cystic benign and malignant lesions of the pancreas. A ten year PubMed search on cystic neoplasms of the pancreas identified nearly 2000 references on this subject. Most of these concern intraductal papillary mucinous neoplasms, pseudocysts and cystadenomas, but these lesions are much less commonly encountered. Cyst fluid analysis for CEA is considered the most important test in differentiating cystic lesions of the pancreas with the main consideration being the potential for malignant transformation.

This case report demonstrates the importance of cystic fluid analysis for CEA, as CT and EUS imaging of a cystic lesion in the peripancreatic region were indeterminate, but high CEA levels in the cyst by FNA suggested a dysplastic process which was ultimately shown to be a cystic teratoma. Although the case in this report is unusual, a similar case of a cystic teratoma in the pancreas has previously been reported in a female patient, in which EUS FNA also demonstrated elevations in cyst fluid CEA.

Malignant teratomas can elevate CEA concentrations in serum, so it is not surprising that fluid aspirated from a cystic teratoma can have high levels of CEA. Since teratomas can have any cell type, cytology may not be helpful as it could show “normal cellular elements” as in this case where cytology recovered benign intestinal type cells (“transit mucosa”). The diagnosis of teratoma was suspected through review of previous imaging and surgical pathology confirmed that the cystic cavity was lined with these intestinal type cells.

This report identifies how CEA analysis of cystic lesions can be helpful in categorizing pancreatic lesions with regard to surgical removal and malignant potential. In this case, the age of the patient, size of the lesion and high CEA would have led to resection. However, by considering a teratoma, a Whipple procedure was not anticipated.

This unusual case is a reminder that CEA level only helps to suggest a preoperative diagnosis of peripancreatic lesion. Uncommon entities do
occur and may be treatable with different surgical approaches than commonly used in the therapy of primary pancreatic neoplasms and malignancies. In some cases, only surgically obtained tissue can provide a definitive diagnosis.

References:


