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PANCREATIC SCHWANNOMA: CASE REPORT

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ABSTRACT

Pancreatic schwannoma is a rare neoplasm. By 2012, there were only 47 cases reported on pancreatic schwannoma in the English literature to the best of our knowledge. Hereby, we report a 37-year-old Caucasian male with a cystic schwannoma in the head of the pancreas. The patient, complaining of vague abdominal pain and pruritus underwent a computed tomography (CT) scan of the abdomen. The CT scan of the abdomen revealed a cystic lesion in the head of the pancreas. Initially, a cystic mucinous tumor of the pancreas was suspected. Whipple's procedure was undertaken. The histopathologic evaluation of the specimen revealed a pancreatic schwannoma. The patient did well postoperatively. Even rarely seen, pancreatic schwannoma should be taken into account in the differential diagnosis of pancreatic lesions.

UDC CODE & KEYWORDS

■ UDC: 6 ■ Pancreas ■ Schwannoma ■ Whipple

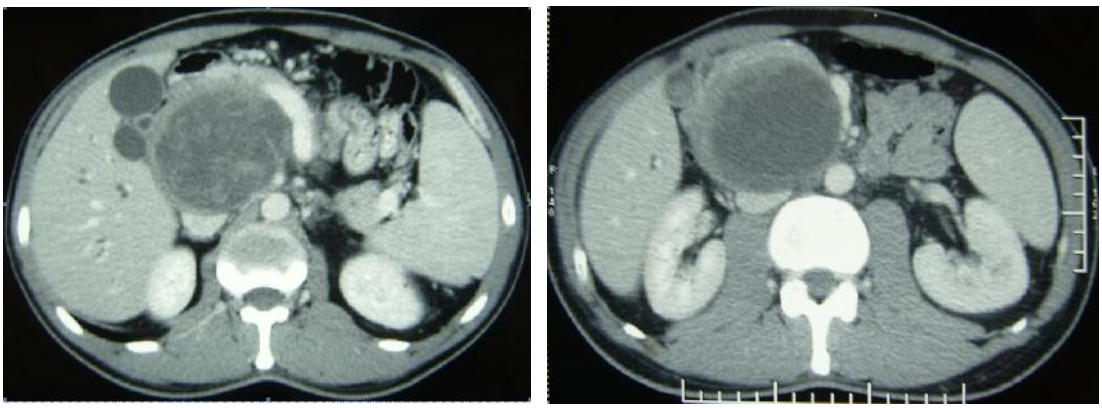
INTRODUCTION

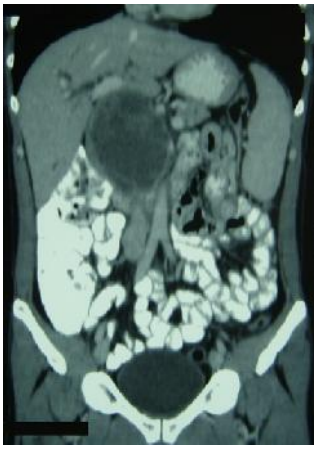
The Schwann cell is derived from the neural crest cell. Schwann cells form the insulating myelin sheats, and also maintain the health of the peripheral axons they surround (Mummadi, Nealon, Artifon, Fleming, & Bhutani, 2009). Tumors of Schwann cells are called schwannomas. Schwannomas usually occur in the extremities, neck, mediastinum, retroperitoneum, and posterior spinal roots (Gupta, Subhas, Mittal, & Jacobs, 2009). Schwannomas are commonly seen in adults with almost equal male to female ratio (Kinhal et al., 2010). Pancreatic schwannomas are quite rare. Most pancreatic schwannomas are benign, however rare malignant tumors are also reported (Stojanovic et al., 2010). The preoperative diagnosis of pancreatic schwannomas is a clinical challenge, as they may radiographically mimic other cystic pancreatic lesions, such as pancreatic cystadenomas, cystadenocarcinomas and pancreatic pseudocysts (Bui, Nguyen, Huerta, Gu, & Hsiang, 2004). Therefore, pancreatic schwannomas should be kept in mind in the differential diagnosis of pancreatic cystic lesions.

Case Report

A 37-year-old white Caucasian male, complaining of vague abdominal pain and pruritus for the last 3 months, was admitted to the hospital for further clinical evaluation. Laboratory tests revealed mild increase in: total/direct bilirubin:2.2/1.44 mg/dl, (reference range:0.2-1.3 mg/dl, 0-0.5 mg/dl), AST:133 U/L (reference range:0-40 U/L), ALT:267 U/L (reference range:0-40 U/L), ALP:900 U/L (reference range:53-141 U/L), GGT:1157 U/L (reference range:0-50 U/L), amilase:138 U/L (reference range:25-125U/L), lipase:285 U/L (reference range:8-80 U/L). Tumor markers, including PSA, CA-125, CA 19-9, AFP and CA 72-4 were all within normal limits. Viral hepatitis markers were all negative. Past medical history and family history were both unremarkable. The contrast-enhanced computed tomography (CT) scan of the abdomen revealed a 90x75 mm cystic mass in head of the pancreas (Figure 1). The radiological findings suggested that the lesion was well delineated and did not appear to involve any of the vasculature including the portal vein and superior mesenteric vessels. Initially, a cystic mucinous tumor of the pancreas was suspected. At laparotomy, a well-encapsulated mass in the pancreatic head was found. Intraoperatively, fine needle aspiration of the cystic fluid was performed. The intraoperative analysis of the cystic fluid revealed pancreatic fluid, without atypical cells. Whipple's procedure was undertaken. The patient did well post-operatively. The histopathologic evaluation of the specimen revealed a pancreatic schwannoma (Figure 2).

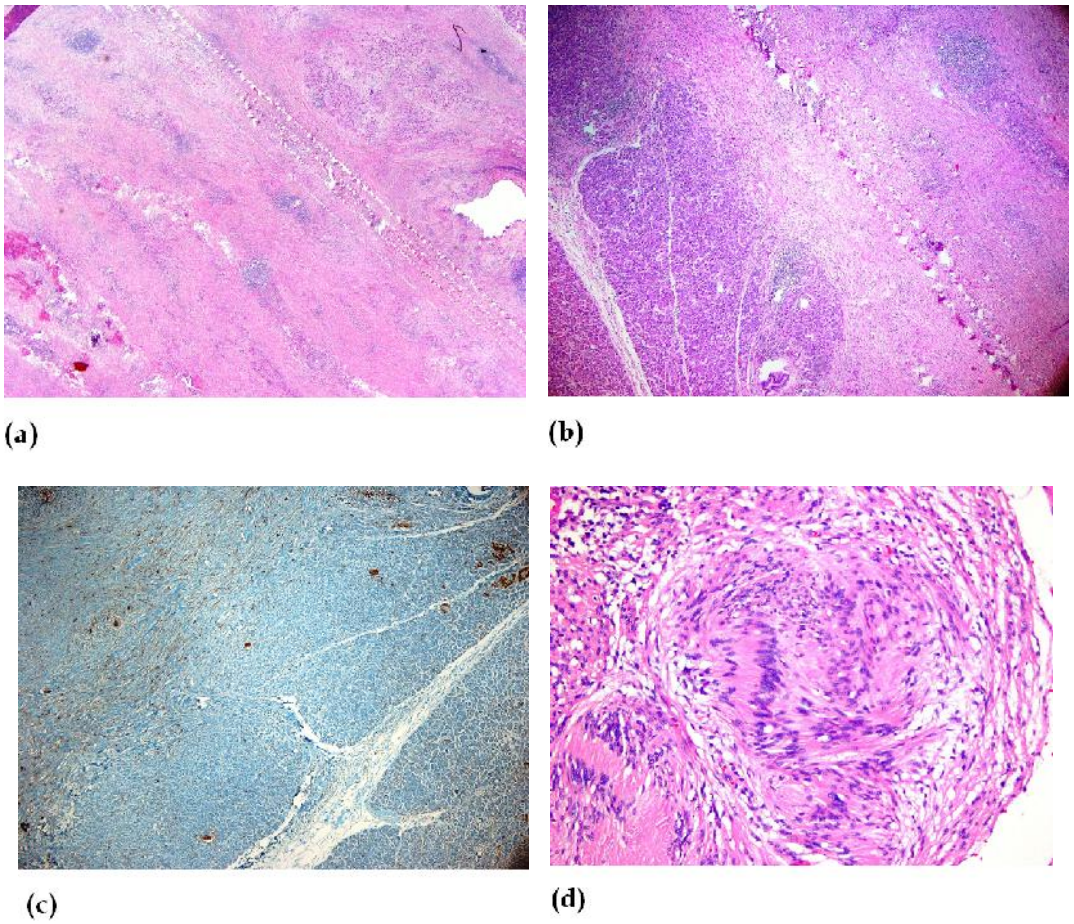
Figure 1: Contrast-enhanced computed tomography (CT) scan of the abdomen demonstrating a 90x75 mm cystic mass in the head of the pancreas





Source: Gazi University School of Medicine, Department of Radiology

Figure 2: a. Microscopic examination demonstrating pancreatic head schwannoma (HE x400). b, c. Immunohistochemical staining for S-100 protein in spindle cells was positive. d. Antoni A and Antoni B areas. HE: Hematoxylin and eosin



Source: Gazi University School of Medicine, Department of Pathology

Discussion

Pancreatic schwannomas are rarely seen. Pancreatic schwannomas arise from either autonomic sympathetic or parasympathetic fibers, both of which course through the pancreas as branches of the vagus nerve (Di Benedetto et al., 2007).

Moriya et al. has provided a review of the all 47 pancreatic schwannoma cases reported in the English literature (Moriya et al., 2012). Abdominal pain is the most common complaint. The mean age is 55.7 years, ranging between

20-87 years. There is no gender predilection. Mean tumor size is 6.2 cm, ranging between 1-20 cm. The pancreatic schwannom is mostly seen in the pancreatic head. Pancreaticoduodenectomy is the most common procedure undertaken as a treatment option.

Pancreatic cysts can be divided into inflammatory and neoplastic cysts. Inflammatory cysts, known as pseudocysts have no malignant potential (Lennon & Wolfgang, 2013). Pancreatic cystic neoplasms, accounting for 10% to 15% of all pancreatic cystic lesions, include serous cystic neoplasms, mucinous cystic neoplasms, intraductal papillary mucinous neoplasms, mucin solid pseudopapillary neoplasms, cystic endocrine neoplasms, and acinar cell cystadenocarcinomas (Bai et al., 2013). Pancreatic schwannomas may also present as cystic lesions. For the surgeon, it is quite challenging to distinguish between various types of cystic pancreatic lesions preoperatively. Moreover, the identification of the lesion, whether it is benign or malignant, is another obstacle to get over. Therefore, the surgical resection of large and symptomatic lesions is recommended.

Bearing in the mind that pancreatic schwannomas are rarely seen, it is not surprising that the definite diagnosis of pancreatic schwannomas are only reached after histopathological examination of the specimen. The microscopic diagnostic features of schwannoma include a fibrous capsule, hyaline vessels, cellular (Antoni A) and loose textured (Antoni B) areas and Verocay bodies (Kurtkaya-Yapicier, Scheithauer, & Woodruff, 2003). S-100 protein is highly characteristic of neural crest-derived tumors, therefore immunohistochemical staining for S-100 is helpful in the diagnosis of pancreatic schwannoma (Weiss, Langloss, & Enzinger, 1983).

Conclusion

This is the 48th case of pancreatic schwannoma in the English literature to the best of our knowledge. In conclusion, the differential diagnosis of pancreatic cystic lesions is a challenge. Pancreatic schwannomas are quite rare; however they may mimic other cystic lesions of the pancreas, such as pancreatic cystadenomas, cystadenocarcinomas and pancreatic pseudocyst. Despite the fact that most pancreatic schwannomas are benign, rare malignant tumors are also reported. Patients with pancreatic schwannomas usually present with nonspecific abdominal pain and normal laboratory values. When a pancreatic schwannoma is suspected, the most accurate diagnosis is only reached after postoperative histopathological evaluation. Even rarely seen, pancreatic schwannoma should be taken into account in the differential diagnosis of pancreatic lesions.

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