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Solid cystic pseudopapillary tumor of pancreas with splenic metastasis: Case report and review of literature

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ABSTRACT

INTRODUCTION: Solid-cystic pseudopapillary tumor of the pancreas is rare and most commonly seen in young women. We present a young women with solid-cystic pseudopapillary tumor of the pancreas and discuss the literature.
PRESENTATION OF CASE: Thirty nine years old female patient with a mass about 12 cm in the pancreas with splenic invasion seen in our clinic. After having CT and PET-CT view, patient underwent surgery. Distal pancreatectomy with mass excision and splenectomy was performed. Microscopic examination result was solid cystic pseudopapillary tumor with spleen invasion.
DISCUSSION: Solid-cystic pseudopapillary tumor of the pancreas has cystic solid pseudopapillary structures. Prognosis of tumor is better than other pancreatic tumor. Complete resection of tumor with splenic inclusion is surgical treatment.
CONCLUSION: In case of large slow growing pancreatic tumor with splenic metastasis, solid-cystic pseudopapillary tumor of the pancreas should be considered in the diagnosis. Complete surgical resection is associated with long-term survival even in the presence of metastatic disease. Close follow-up is necessary after surgery.

1. Introduction

Solid-cystic pseudopapillary tumor of the pancreas (SCPTP) is a rare tumor which is 0.17–2.7% of pancreatic tumors and creates low malignancy potential [1]. This tumor was defined by World Health Organization as pseudopapillary solid neoplasm. Histologically, SCPTP has typically short, solid and pseudopapillary structures. Women are often affected than men (8 women/men) and are very common in the third decade of age. In fact, unlike the exocrine pancreas tumors, prognosis of metastatic tumors is even better. Primary and metastatic tumor is excised and recurrence is rare [2]. A case of SCPTP with splenic involvement is aimed to be presented with discussion of previous literature.

2. Presentation of case

Thirty nine years old female patient came to our clinic with complaint of abdominal pain. She had no appetite and weight loss. On physical examination 10 cm mass in the left upper quadrant of abdomen with spleen growth was palpated. Only comorbidy of patient was hypertension. All blood tests and tumor markers were normal. A 12 cm mass was noticed in the pancreas invading splenic with abdominal ultrasound. Computerized tomography showed 12 cm mass in the distal pancreas with splenic invasion (Fig. 1). Preoperative PET-CT viewed a mass size of 12 cm × 11 cm × 12 cm in the pancreas starting from left adrenal gland invading the spleen (SUV max: 12) (Fig. 2). Distal pancreatectomy with mass excision and splenectomy was performed (Figs. 3 and 4). Solid and cystic mass macroscopically was covered with fibrous capsule with nodular structure. Microscopic examination result was solid cystic pseudopapillary tumor with spleen invasion. Partial internal bleeding, necrosis and mitosis were present in tumor. Patient discharged without any complication. Patient is well at 8 month postoperative follow up without tumor recurrence.

3. Discussion

Solid-cystic pseudopapillary tumor of the pancreas appears in all ages, the female to male ratio of 8.3 and the average age 27-year-old young women are most affected [3]. Patients are usually young and compliant with treatment [3,4]. Most patients have non-specific symptoms such as mild abdominal pain and gas or no symptoms. Our patient had abdominal pain for about 2–3 months before the diagnosis. The average tumor size was 9.5 cm in the literature. The reason for large tumor size was late diagnosis and slow-growing pattern [5]. Routine screening US examinations are capable of identifying small (<5.0 cm) SCPTP. These screening examinations allow diagnosis on the basis of typical imaging

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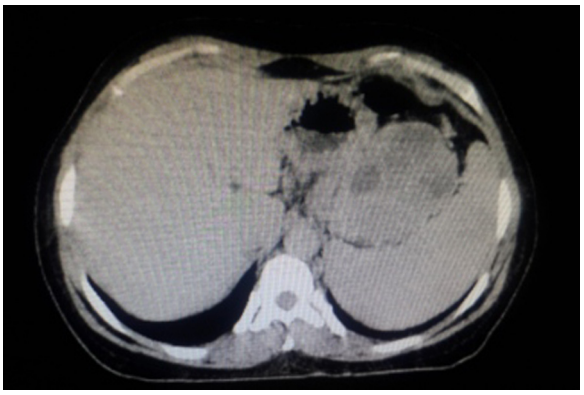

Fig. 1. Computerized tomography of solid-cystic pseudopapillary tumor of the pancreas.

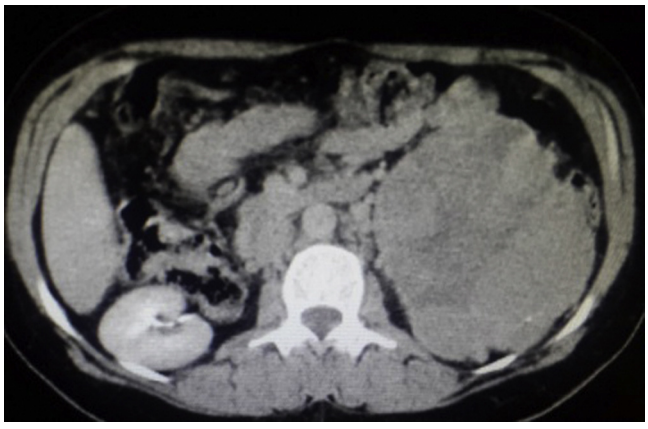

Fig. 2. PET-CT view of solid-cystic pseudopapillary tumor of the pancreas.

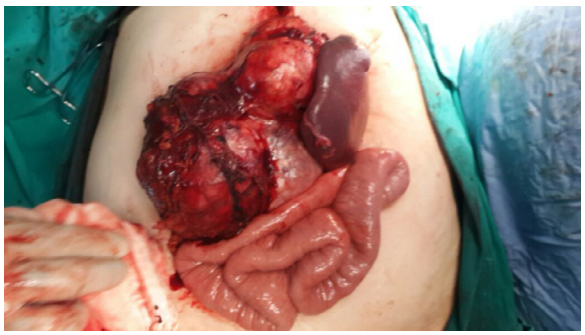

Fig. 3. Solid-cystic pseudopapillary tumor of the pancreas with spleen.

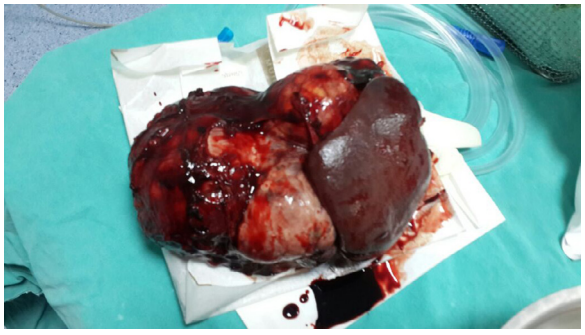

Fig. 4. Solid-cystic pseudopapillary tumor of the pancreas with spleen after complete resection.

features, such as a homogeneously hypoechoic mass with a hyperechoic rim [6]. Computed tomography of tumor shows the solid and cystic areas [7]. Magnetic resonance imaging is used to differentiate capsular cystic degeneration and bleeding [8]. PET CT has determined the high FDG uptake (SUV max: 12) in our case. In a recent study from Korea, Clinical correlations with (18)FDG PET scan patterns in solid pseudopapillary tumors of the pancreas were studied. Medical records of 37 patients underwent resection of pancreatic solid pseudopapillary tumors and preoperatively evaluated by (18)F-FDG PET or PET/CT scan were reviewed. They categorized solid pseudopapillary tumors into five types: Type I (hot FDG uptake in the entire tumor portion) was the most frequent (13, 34.2%), followed by type IV (focal uptake, 12, 31.6%), II (focal defect, 8, 21.1%), III (multiple and geographic uptake, 3, 7.9%), and V (total defective type, 1, 2.6%). The SUVmax in the solid portion of the SPT was 5.3 ± 4.1. The clinical pattern of FDG uptake in SPT was not associated with histopathologic features suggesting malignant potential. They arrived the conclusion that the clinical significance of FDG uptake, glucose metabolism, and clinical usefulness of PET scan in solid pseudopapillary tumors need to be further investigated, and thus this tumor remains a surgical enigma [9].

Surgery is an effective treatment method for SCPTP. Publication with largest series about SCPTP was published in 2005 by a Papavramidis et al. [1]. 210 articles were published for about 718 patients detected between 1933 and 2003 years. 497 patients had metastatic disease and 17 (3.4%) of these patients had splenic involvement. Other major study was published in 2010 by Yu et al. [3]. In the examination of 492 patients, 4 (0.8%) patients had splenic involvement. Our patient was presented as SCPTP with splenic involvement. In a retrospective review printed by Memorial Sloan Kettering Cancer Center [10], Gastric and mixed tumor service, from January 1985 to July 2000, 24 patients were diagnosed as having solid-pseudopapillary tumor of the pancreas (0.9%). Twenty females and four males were identified, with a median age of 39 years. The median size of the lesions was 8.0 cm (range, 1–20). At a median follow-up of 8 years, one recurrence occurred in 17 patients who underwent complete resection. Four patients presented with synchronous liver metastasis and underwent resection of the primary tumor and the liver metastasis. Conclusion was that complete resection is associated with long-term survival even in the presence of metastatic disease [10]. A multicenter analysis in Korea [11] studied prognostic factors that predict the malignant behavior of sold pancreatic tumors (SPTs). Among 351 patients, thirty-four patients (9.7%) were male, and 317 (90.3%) were female, with a mean age of 36.8 ± 12.4 years, a tumor size larger than 8 cm, microscopic malignant features, and stage IV were significant prognostic factors for tumor recurrence. Li et al. [12] studied 41 patients were diagnosed with SPN of the pancreas and underwent surgical resection. The most common location of SPN was the tail (43.9%). Mean diameters of SPN was 5.5 cm (range, 1.2–14.5 cm). Surgical treatment included distal pancreatectomy in 21, pancreaticoduodenectomy in 11, segmental resection of pancreas in 4, enucleation in 2, excision in 2 and surgical biopsy in 1. They arrived conclusion that patients diagnosed as SPN should receive surgical resection because of the excellent prognosis. Closed follow-up is recommended after surgery, even in patients without pathological malignant potential.

As a conclusion, in case of slow growing large pancreatic tumor with splenic involvement SCPTP should be considered in the diagnosis. SCPTP should receive surgical resection and complete resection is associated with long-term survival even in the presence of metastatic disease. Close follow-up is necessary after surgery.

Conflict of interest statement

We all confirm that there is no conflict of interest including employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding.

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Ethical approval

None.

Consent

We accept that written and signed consent to publish this case report from the patient prior to submission was obtained. Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author contributions

Yusuf Yagmur operated the patient and contributed (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

Other authors, Ebral Yigit, Serdar, Mehmet Babur, Mehmet Ali Can, also contributed (1) the conception and design of the study, or acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted.

Guarantor

We all accept there is no guarantor for this study.

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