

Correlation of CT and Histopathological findings of solid Pseudopapillary Neoplasm of Pancreas in young age female

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ABSTRACT

Solid-pseudopapillary neoplasm (SPPN) of the pancreas is a distinctivetumor of low malignant potential with a predilection for female patients in the secondand third decades of life. Here we present a case of 19 year old female.

Key words: SPPN, CT findings, pathology.

Introduction

Solid pseudopapillary neoplasm (SPPN) is an uncommon exocrine pancreatic neoplasm, with low malignant potential, first described in 1959 by Frantz. These tumors predilection in young women, usually follow a benign course, and are curable with excision. These tumor are diagnostically challenging both clinically and radiologically due to their vague clinical presentation and varying degree of cystic degeneration, hemorrhage, and necrosis mimicking malignancy or even pseudocyst.[1]. Here we report a case of 19 year old female with Computed tomography (CT) scan & histopathological findings.

Case Report

A 19-year-old woman was referred to our Institute because of vague abdominal discomfort and dyspepsia which had persisted for 2 and half years. UltraSound showed a solid mass of the pancreatic head, 4 cm in diameter, not well defined and without an evident capsule, mimicking a ductal adenocarcinoma. A contrast-enhanced CT scan confirmed the ultrasound

findings and revealed a nonhomogeneous mass of uneven soft-tissue density with central necrosis [Figure 1(a) and 1(b)].Preoperatively, a diagnosis of ductal adenocarcinoma or serous cystic tumor of the pancreatic head was suggested. At laparotomy, a solid mass of the pancreatic head was found. There was no metastatic spread to the liver, peritoneum or lymph nodes nor was involvement of the adjacent organs or tissues detected. Whipples procedure was performed. The definitive diagnosis was of borderline SPPN with capsule infiltration and involvement of the surrounding pancreatic parenchyma.

Gross findings

Specimen of Whipples was received comprising of part of stomach, part of duodenum and that of pancreas. Part of pancreas measuring 6×3cm head of the pancreas showing lesion (growth) measuring 4×2 cm cut surface of growth is partially solid and partially cystic.

Microscopic Findings

The presence of pseudopapillae covered by several layers of epithelial cells. The nuclei are ovoid and folded, with indistinct nucleoli and few mitoses. Hyaline globules and collections of foamy cells may be present. The thick fibrovascular core often shows prominent mucinous changes, a feature of diagnostic importance. Tumor clear cells are prominent.[figure 2(a) and 2(b)]

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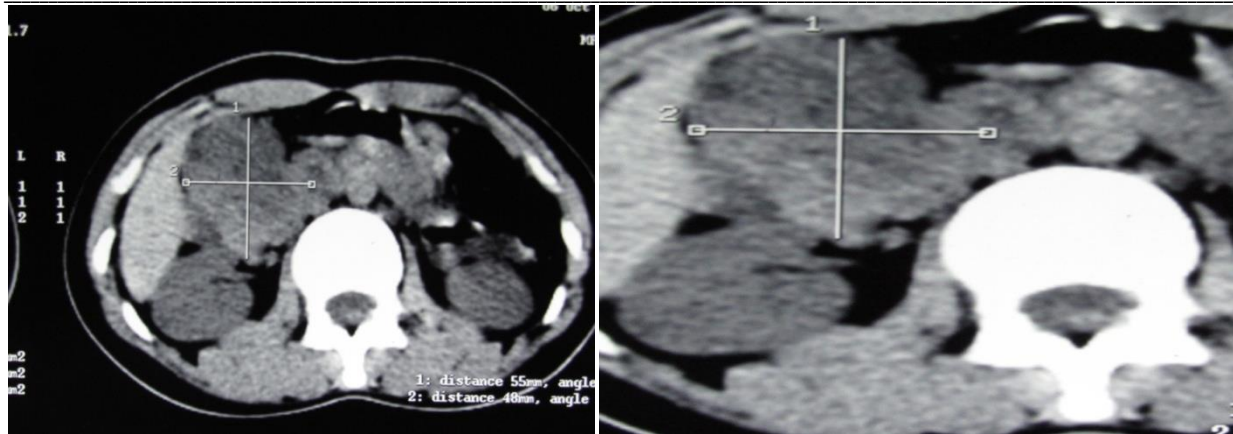


Fig 1(a) &(b): A contrast-enhanced CT scan confirmed the ultrasound findings and revealed a nonhomogeneous mass of uneven soft-tissue density with central necrosis

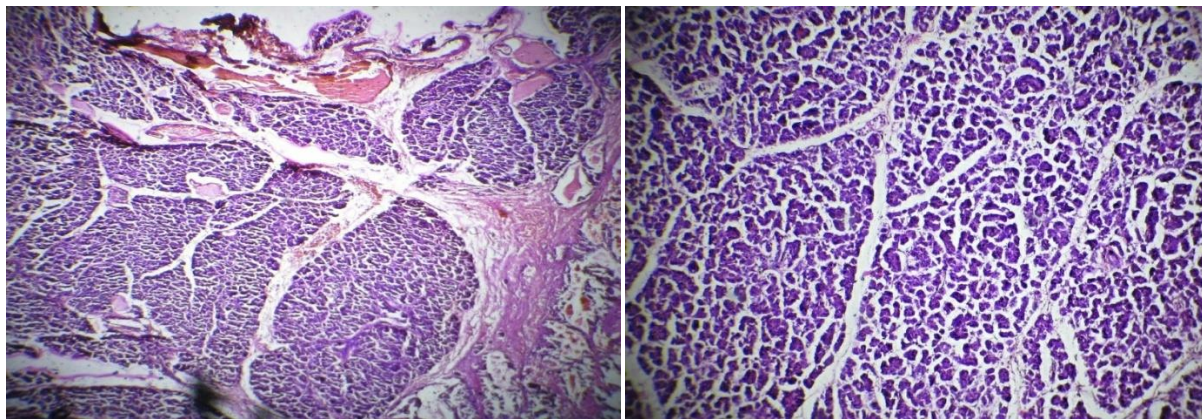


Fig 2(a) and (b): The thick fibrovascular core often shows prominent mucinous changes, a feature of diagnostic importance. Tumor clear cells are prominent

Discussion

Frantz's tumors, or SPPN, are uncommon pancreatic tumors. The male: female ratio was 1:8.4, and the mean age was 27 years. On CT imaging Large SPPNs are usually typical with the following features: ovoid shape, mixed solid and cystic components, smooth borders with a sharp margin and frequent encapsulation. Two-thirds of the cases have calcifications (peripheral rim), and the enhancement patterns during the pancreatic phase are heterogeneous. Additionally, pancreatic duct dilatation is uncommon. In some cases, the aspect is atypical with the following features: purely solid, irregular border, no clear encapsulation, homogeneous enhancement and, sometimes, dilatation of the pancreatic duct. Small SPPNs are very frequently atypical with the following features: round, purely solid, margin frequently indistinct,

homogeneous enhancement pattern during the pancreatic phase and dilatation of the Wirsung duct[2].Grossly, a variable combination of solid and cystic areas with much hemorrhage and secondary degenerative changes are seen, which can be extensive leading to an entirely cystic hemorrhagic or infarcted tumor. Histologically, one could find scanty viable foci and tell-tale pseudopapillae at the periphery, hence, the importance of extensive tissue sampling.the tumor cells were present in loosely cohesive sheets or pseudopapillae, many with hyalinized cores. Distinction of SPT pseudopapilla from true papillae can be made by looking at the surface of papillae where the cells appear to be falling off. Individual tumor cells appear fairly uniform, cuboidal to polygonal or epithelioid, with moderate to abundant pale

eosinophilic cytoplasm, round to oval sometimes grooved nuclei, dispersed granular chromatin and inconspicuous nucleoli. Mitoses are inconspicuous to absent [1]. Based on high rates of positivity for markers of various pancreatic cells (NSE, alpha 1-antitrypsin, vimentin, antichymotrypsin, pancreatic polypeptide, somatostatin, glucagon, insulin) it has been suggested that the tumor originates from pancreatic pluripotential stem cells [3]. In general, SPPN has an excellent prognosis with a low malignant potential. Malignant appearance is observed in about 10-15% cases [4]. This kind of tumors can show local aggressiveness. Histologically aggressiveness is generally associated with cellular atypia, mitotic activity, and invasion of vascular spaces, perineural interstitium or neighboring organ. Metastases were seen in regional lymph nodes, liver, and omentum. Ozguven et al (2015) in their study found that one of their patients had vascular and perineural invasion, and she was well after 2 years following operation [3]. Conservative resection with safe margins is the treatment of choice if feasible [5]. In most cases, distal pancreatectomy would be sufficient. Total pancreatectomy with or without splenectomy would be warranted in some cases. The presence of metastasis does not exclude surgical resection because of the clinical benefits associated with tumor resection [6]. Tumor related death is uncommon. By virtue of its biologic behavior, SPPN of the pancreas is a highly curable tumor, unlike the more common adenocarcinoma [3].

Source of Support: Nil

Conflict of Interest: None

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