Solid and cystic papillary epithelial neoplasm of the pancreas

Mohan H, Bal A, Punia RPS, Attri AK*

An 18-year-old male presented with history of pain in abdomen and a palpable mass in the left hypochondrium for the last 6 months. Ultrasonography revealed a well defined, partly cystic and partly solid mass measuring 5 x 4 cm in the tail of the pancreas. Clinical diagnosis of mucinous cystadenoma/mucinous cystadenocarcinoma was made. Distal pancreatectomy with splenectomy was done.

On Gross examination there was a well-circumscribed and encapsulated mass in the tail of the pancreas measuring 4.5 x 4 cm. It was predominantly cystic with some solid friable tumor tissue and areas of haemorrhage and necrosis [Figure 1]. Normal pancreatic tissue was identified at the periphery. The spleen weighed 170 gm and was gray brown/tan in appearance. Two lymph nodes were isolated from hilum of the spleen. Microscopically, the tumor had a thick fibrous capsule. Solid areas of the tumor were composed of cords of small uniform cells, which were forming pseudopapillae [Figure 2]. Tumor cells had round to oval nucleus with finely dispersed nuclear chromatin and moderate eosinophilic granular cytoplasm, mitoses were infrequent. Cystic areas showed hemorrhage and necrosis. There was evidence of capsular and perineural invasion. The tumor was infiltrating minimally into the surrounding normal pancreatic tissue. Proximal surgical resection limit was however free of tumor. Immuno-staining for insulin was negative. Spleen showed changes of chronic venous congestion. Lymph nodes were free of tumor deposits.

The patient is well after a follow up for the last one year.

Discussion

Solid and cystic papillary epithelial neoplasm of the pancreas, also known as solid and papillary epithelial neoplasm of the pancreas (SPENP) and solid and cystic tumor of the pancreas is a rare tumor with low malignant potential. The latest consensus designation for this tumor is solid-pseudopapillary tumor of pancreas (SPTP). It was first, described in 1959 by Frantz, since then approximately 452 cases have been reported in the world literature. They constitute 0.13-2.77% of all the pancreatic tumors and 70% of tumors occur in the first three decades of life. The tumor is rare in men, accounting for 7% of the cases with male: female ratio of 1:13. In the present case patient is a young male.

Figure 1: Gross specimen of the pancreas along with spleen showing well encapsulated partly cystic and partly solid tumor with areas of hemorrhage and necrosis

Figure 2: Photomicrograph showing papillary structures having delicate fibrovascular core and lined by bland round to oval tumor cells (H/E, 200x)
Clinically patient may be asymptomatic or present with vague abdominal discomfort. Tumor is localized in head, body and tail of the pancreas in the ratio of 4:2:4. Pre-operatively fine needle aspiration can be used for obtaining a cytologic diagnosis. Cytological smears in SPENP are highly cellular and show monotonous population of small cells arranged in aggregates and papillae with fibrovascular cores. Cells have bland nuclear chromatin and may show grooving.[1]

Grossly it is usually a well circumscribed tumor ranging in size from 2-25 cm diameter. It has a variegated appearance with solid, cystic and papillary areas with foci of necrosis and hemorrhages. These degenerative changes are probably related to vascular ischemia. The clinical differential diagnosis includes all the cystic and solid lesions of the pancreas, like inflammatory pseudocyst, mucinous cystic tumors, microcystic adenoma and mucinous cystadenocarcinoma. However the histologic features of this tumor are characteristic and diagnostic. The only morphologic differential diagnosis is the islet cell tumor, from which it can be differentiated by immunohistochemistry.

Histological parameters predicting the tumor’s aggressive behavior include: capsule thickness of more than 2 mm, high nuclear grade, prominent necrobiotic nests, capsular invasion into the surrounding normal pancreatic tissue and other tissues, vascular invasion and metastasis.[4]

The origin of this tumor remains an enigma. Immunophenotype is not specific: it displays positivity for vimentin, alpha-1-antitrypsin and neuron specific enolase. This diversity of immuno-staining emphasizes its exocrine and endocrine differentiation.[5] Complete surgical resection is the treatment of choice. Surgical resection with adjuvant chemotherapy is reserved for tumors with aggressive histological features.

References


