CASE REPORT

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Post-pubertal mucinous cystadenoma of the pancreas

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Abstract A 14-year-old patient with a mucinous cystadenoma of the pancreas (MCAP) is presented. She presented with a palpable left-sided abdominal mass and underwent a left hemipancreatectomy. MCAP occurs mostly in middle-aged women, and no post-pubertal cases have been reported to date in the English literature.

Keywords Mucinous cystadenoma · Pancreas · Pediatric

Introduction

Cystic neoplasms of the pancreas are rare, accounting for about 10% of all cystic lesions of the pancreas and less than 1% of all pancreatic neoplasms [4]. Mucinous cystic tumors (MCT) are the most frequently-encountered cystic neoplasms, comprising mucinous cystadenoma (MCA) and mucinous cystadenocarcinoma (MCAC). MCTs of the pancreas need to be distinguished from other pancreatic cysts because of their malignant potential. We report a postpubertal case of a MCA and discuss the differential diagnosis.

Case report

A 14-year-old female presented with a left-upper-quadrant mass. Her previous history included no episodes of abdominal trauma or steroid treatment, but precocious puberty began at the age of 9 years. Clinical examination showed no abnormality except for a mobile, elastic-hard, nonpainful mass. Ultrasonography (US) and computed tomography (CT) revealed a 10-cm cystic mass at or near the tail of the pancreas with evident seption. Calcification of the tumor wall and septa was not demonstrated. A T1-weighted image using magnetic resonance imaging revealed a low-intensity, multiloculated mass. In contrast, T2-imaging showed a high-intensity mass. Endoscopic retrograde pancreatography demonstrated extrinsic compression of the main pancreatic duct. Extravasation of contrast material into the cyst was not observed. Preoperative fine-needle aspiration was not performed. Laboratory investigations including amylase, liver function tests, peripheral blood count, and tumor markers showed no abnormality.

At laparotomy, the tumor was located in the lesser sac and protruded from the ventral surface of the pancreatic body. No other abnormalities were noted in the peritoneal cavity. The patient underwent a left hemipancreatectomy with preservation of the spleen. Six months after surgery, she was healthy and free of recurrence.

The surgical specimen measured 10 × 4.5 × 11 cm, weighed 320g, and shared the peritoneum in common with the pancreas (Fig. 1a). The cut surface showed a predominantly unilocular cyst with a few small locules that was filled with mucus and surrounded by a fibrous capsule. The cyst-fluid amylase level was 179 IU/l, carcinoembryonic antigen (CEA) 9.772 ng/ml, CA19–9 450.4 KU/ml, and elastase 12,700 ng/dl. Microscopically, the cyst was lined by a single layer of columnar cells with basally-situated nuclei and abundant intracellular mucin (Fig. 1b). There were short papillary projections, and the underlying stroma consisted of loose fibrous tissue with some Langerhans’ islets. The epithelium showed no cytologic atypia and did not infiltrate into the stroma. The pancreas adjacent to the cyst showed a mild degree of atrophy. Using the WHO classification, this was categorized as an MCA.

Immunohistochemical staining using anti-human estrogen receptor (ER) antibody 1D5 (Immunotech, France) was performed on formalin-fixed, paraffin-embedded sections by the avidin-biotin complex (ABC, Vector, Burlingame, CA) method. After blocking of endogenous peroxidase activity, autoclave heating was applied for retrieving the antigenicity of the ER. The tumor showed nuclear staining in the stromal cells (Fig. 1c and Id).

Discussion

MCTs are the most frequently encountered cystic neoplasms of the pancreas, comprising MCA and MCAC. They typically arise from the pancreatic tail or body and manifest as large, multiloculated, cystic masses in middle-aged women. The present case is consistent with
Fig. 1a–d Mucinous cystadenoma of pancreas. a Gross view with pancreatic body and tail. Arrowheads represent resection surface of pancreatic body. b Microphotograph showing cyst wall lined by single layer of columnar mucinous epithelium (H&E, ×40). c Stromal area of cyst wall (H&E, ×50). d Stromal-cell nuclei stain positively for estrogen receptors (arrow) (Immunoperoxidase, ×50)