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CASE REPORT

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Solid-pseudopapillary tumor of the pancreas in a 13-year-old girl-case report

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Summary

Background: The solid-pseudopapillary tumor (SPT) of the pancreas is a rare type of exocrine pancreatic neoplasm. SPT predominantly affects young women and female children, and is usually discovered incidentally. This tumor is generally benign with a low incidence of malignancy.

Case Report: A 13-year-old girl was admitted to the hospital with a few weeks' history of mild abdominal pain and jaundice. On physical examination, there was no palpable mass. The laboratory tests showed increased SR, CRP, high bilirubin, amylase and lipase serum levels. Ultrasound imaging revealed a solid lesion in the region of the pancreatic head. On MRI, precise tumor localization in the head of the pancreas with pancreatic duct dilatation and compression of the common bile duct were visualized. Pancreaticoduodenectomy and cholecystectomy was performed with good clinical outcome. Microscopic and immunhistochemical studies indicated that tumor cells were typical of SPT without any signs of malignancy. After surgical treatment, the patient in good condition was discharged from the hospital.

Conclusions: Magnetic resonance imaging is an excellent and safe modality for detection and characterization of SPT.

Key words: solid- pseudopapillary tumor (SPT)of the pancreas • MRI • Whipple procedure

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Background

Solid pseudopapillary tumors of the pancreas (SPT) belong to rare hyperplastic lesions of the exocrine portuion of the pancreas. This tumor type was first described in 1959 by VK. Frantz, an American pathologists, therefore SPT is sometimes referred to as Frantz's tumor. Such lesions are primarily benign, with low malignancy potential and develop predominantly in females. The paper presents a case of SPT in a 13-year-old girl, diagnosed on the basis of MR.

Case Report

A 13-year-old girl was admitted to the hospital surgery department for treatment of a symptomatic tumor of the pancreas with history of mild abdominal pain and jaundice of a few days duration. On physical examination, there was no palpable mass. The laboratory tests showed significantly increased SR, CRP, high bilirubin, amylase and lipase serum levels. Ultrasound imaging revealed a solid lesion of the pancreas. Taking into consideration the patient's young age and persistent jaundice, MRI with cholangiography (MRCP) was ordered. The examination revealed the presence of a tumor in the head of the pancreas with pancreatic duct dilatation and compression of the common bile duct (Figures 1–3). The patient was qualified for surgical treatment. Pancreaticoduodenectomy and cholecystectomy was performed by Whipple procedure with good clinical outcome. Microscopic and immunhistochemical studies indicated a benign tumor with low malignancy potential containing cells typical of SPT without any signs of metastases to the nearest lymph nodes. The postoperative treatment was uneventful except for fluid retention at the surgery site and after 30-day hospitalization the patient in good condition was discharged home. Because of benign tumor character and radical resection, no adjuvant treatment was instituted.

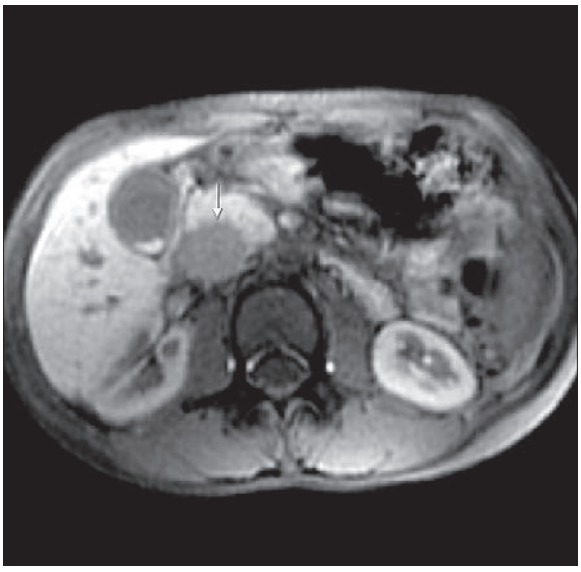

Figure 1. Abdominal MR. Axial T1-weighted fat-suppressed image. Round, hypointense, 3 cm tumor in the head of the pancreas (arrow).

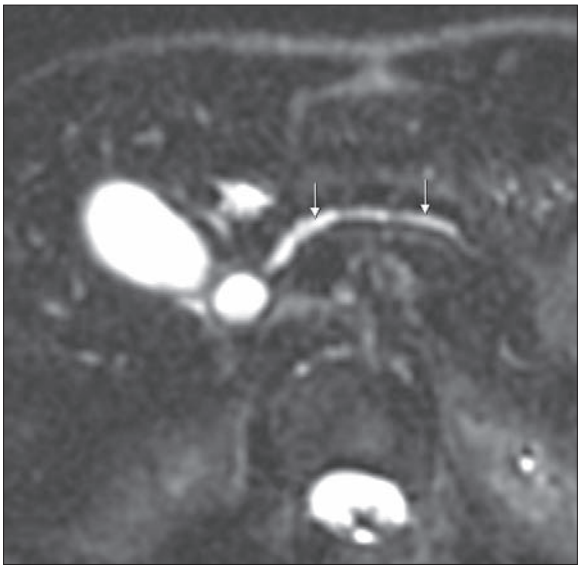

Figure 2. MRCP. Axial heavily T2-weighted ("thin slab" technique) image. Pancreatic duct dilatation visualized (arrows).

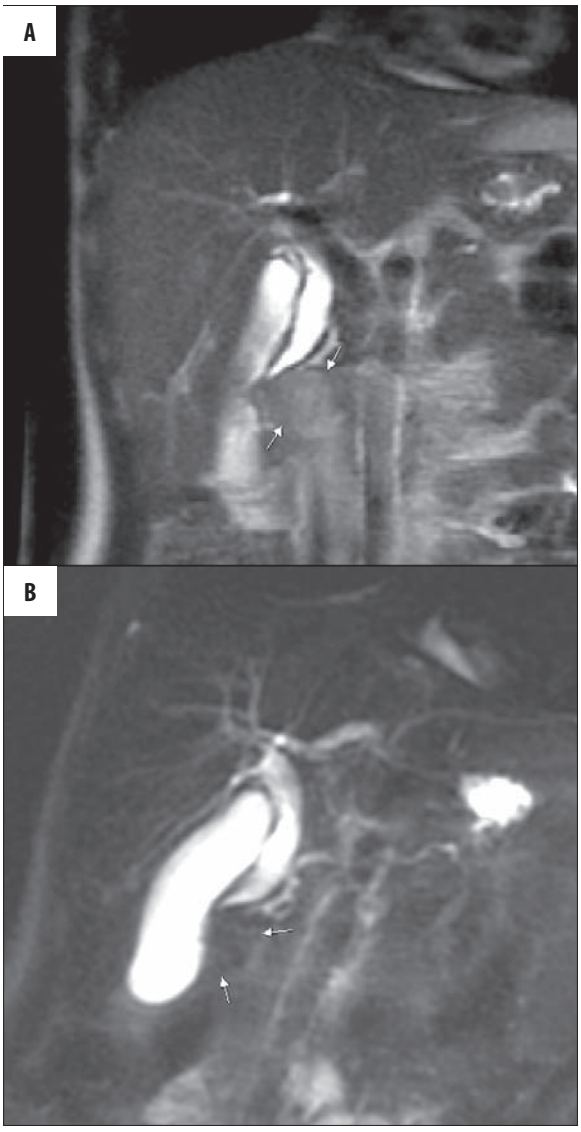

Figure 3. MRCP. (**A**) coronal T2-weighted ("thin slab" technique) image, (**B**) coronal-oblique T2-weighted ("thick slab" technique) image. Compression by pancreatic tumor of distal parts of the common bile duct and the pancreatic duct (arrows).

Discussion

Solid-pseudopapillary tumors of the pancreas are most frequently diagnosed in young women aged ca.20–30 years. Approximately 20% of the tumor cases described in the literature were diagnosed in children, predominantly girls between 8 and 16 years of age [1,2]. SPT are single-focus lesions which can develop in any part of the pancreas, characterized by slow growth, and at the moment of diagnosis, usually incidental, may demonstrate a large size. Laboratory parameters, including tumor marker levels (Ca 19.9, CEA i AFP) are usually normal.

The imaging diagnostics of SPT is based on USG and CT, but MR plays a crucial role in determination of the tumor type [2–4]. It is a modality not stressful for the patient, safe and non-invasive, which is especially important in pediatric cases. The size of SPT in children may range from 3 cm to even 20 cm [1,2,3,5]. W In the reported case, the tumor was relatively small (ca. 3 cm). Despite that fact, becausse of its localization, it caused compression of the bile ducts, which led to mechanical jaundice (Figure 1). The examination, utilizing the MRCP protocol, demonstrated compression of the common bile duct and dilatation of the Wirsung duct (Figures 2,3). On that basis, the surgery was planned.

Radical resection of the tumor is the treatment of choice in SPT cases, which leads to complete cure in over 95% of patients [1,2,5]. In case of disseminated forms of SPT, surgical treatment also results in long-term survival as the growth rate of the tumor is very slow. In children, SPT relapses and distant metastases within 5 years after the surgery are very rare, although single cases of metastases to the liver, lungs

and lymph nodes have been described in the literature [1,5]. However, long-term prognosis for children treated for SPT with Whipple procedure is good [1,2,5]. In the reported case, the girl did not require any additional therapy.

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