INTRAPANCREATIC ACCESSORY SPLEEN IMITATING A PANCREATIC NEOPLASM

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Accessory spleens are present in 10% of population and are formed during embryonic development. Besides the splenic hilum, the next most frequent localization of accessory spleens is the pancreatic tail. Intrapancreatic accessory spleens are usually diagnosed occasionally and make diagnostic difficulty because they imitate a pancreatic neoplasm. We present the case of a 61-year old woman with a mass in the pancreatic tail, diagnosed by computed tomography. The patient was operated with suspicion of neuroendocrine tumor. Postoperative histopathological examination revealed the intrapancreatic accessory spleen. We present possibilities of differential diagnosis.

Key words: intrapancreatic accessory spleen, pancreatic mass, neuroendocrine neoplasm, differential diagnosis

Both the spleen and accessory spleens are formed at the end of first month of embryonic life from mesoderm. Autopsy demonstrates accessory spleens in 10% of cases. Their most common location is splenic hilum (80% of cases), pancreas, less commonly phrenocolicoidal ligament, adipose capsule of the kidney, wall of the ileum, mesentery, omentum major, adnexa and scrotum. Autopsy indicates that intrapancreatic location accounts for 17% of cases of accessory spleens (1). It causes diagnostic problems since an accessory spleen may imitate tumor malignancy. English literature reports several cases of partial pancreatic resection done in such mechanism (2-5). The most common preliminary diagnosis was hormonally inactive neuroendocrine tumor.

CASE REPORT

We present a case of a 61-year old woman T.R. in whom a pancreatic mass was found accidentally. Computed tomography imaging of the abdominal cavity, using a multi-slice device with 40 x 0.6 collimation, before and after administration of an intravenous contrast agent, using a hepatic protocol, demonstrated a well delineated mass in the pancreatic tail, 17 mm in diameter, that underwent intensive contrast enhancement (fig. 1, 2). Suggested radiological diagnosis was neuroendocrine pancreatic tumor. Levels of the following markers: CA 19-9, CEA, and AFP were normal. Chest X-ray and endoscopy of the upper and lower gastrointestinal tract was normal. Since the patient was diagnosed with a mass in the pancreatic tail, the patient was referred for surgical treatment. Exploratory laparotomy was done. The pancreatic mass was impalpable. Intraoperative US imaging demonstrated hypoechoicogenic mass in the pancreatic tail. Partial resection of the pancreatic tail with the mass was done. The patient was discharged home in good general condition on
Intrapancreatic accessory spleen imitating a pancreatic neoplasm

Fig. 1. CT, arterial phase following intravenous administration of a contrast agent (25s); well delineated mass in the tail of the pancreas, undergoing intensive contrast enhancement

Fig. 2. CT, portal phase following intravenous administration of a contrast agent (60s)

day 15 after the surgical procedure. A 4x3x2 cm tissue fragment, composed of pancreatic parenchyma with a central solid, brownish, well-delineated mass and reaching the surface of the pancreas, 2,2x1,5x1 cm in diameter, was sent for histological examination. Microscopy demonstrated capsulated mass composed of lymphoid tissue and trabeculae corresponding to splenic trabeculae as well as white and red pulp, surrounded by pancreatic parenchyma (fig. 3).

DISCUSSION

Differential diagnosis of masses located in the pancreatic tail should include an accessory spleen which is estimated to be present in as much as 2% of the population. This location is second most common location of an accessory spleen. It is usually diagnosed incidentally in asymptomatic patients. Imaging studies, such as computed tomography imaging, magnetic resonance imaging or ultrasound imaging, usually present an accessory spleen as a round or oval, well vascularized structure, well delineated from the pancreatic parenchyma. This image is not characteristic, in particular in case of small lesions, and may suggest predominantly a neuroendocrine pancreatic tumor, solid pseudopapillary tumor, well vascularized metastases (e.g. of the kidney cancer). Other diagnostic modalities, basing on functional imaging of splenic tissue, such as $^{99m}$Tc HDRBC scintigraphy, ultrasound imaging following intravenous administration of a contrast agent or magnetic resonance imaging following administration of a superparamagnetic contrast agent (SPIO-enhanced MRI), and specifically and non-invasively demonstrate ectopic splenic tissue, may be helpful here.

Heat-damaged red blood cell $^{99m}$Tc scintigraphy (HDRBC) allows good visualization of an accessory spleen since approximately 90% of own patient’s specially prepared blood cells,

Fig. 3. Tumor mass preparation. Capsulated splenic parenchyma (S) contains white and red pulp and thin splenic trabeculae. The capsule of the mass is surrounded by pancreatic glands (T). H&E staining, magnification 30x
used for the study, is trapped by the splenic tissue (6). However, sensitivity of the test is low due to low spatial resolution of the obtained image versus other imaging modalities (CT, MRI), in particular when the amount of functional splenic tissue is low (below 1 cm), as is the case with small accessory spleens (7). Ultrasound imaging with administration of an intravenous contrast agent is a helpful method of spleen detection. This contrast agent contains gas bubbles that in so called hepatosplenic phase exhibit prolonged accumulation predominantly in both these organs and allows specific enhancement of hepatic and splenic tissues among other organs. Visualization of vascular hilum of an accessory spleen is also helpful (7, 8).

Magnetic resonance imaging using superparamagnetic iron oxide as a negative contrast (SPIO-enhanced MRI) that exhibits affinity toward cells of the reticuloendothelial system, is another imaging modality (9, 10). Characteristic reduction of signal intensity of the lesion in T2- and T2*-weighted images, identical to that observed for the spleen, is the basis for diagnosis of an ectopic splenic tissue. US guided fine needle biopsy is reported as a tool of differential diagnosis, however may be difficult to use due to the lesion location (11). Despite availability of multiple diagnostic tools, differential diagnosis is difficult and often patients are referred for surgical treatment and final diagnosis in only made by a histopathologist examining a resected lesion.

REFERENCES


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