Incidental pancreatic lipomas: CT imaging findings with emphasis to diagnostic challenges

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Purpose

Lipomas are very uncommon in the pancreas, and its true incidence is unknown. Pancreatic lipomas (PLs) are usually incidental lesions, although they may rarely be symptomatic. The symptoms are usually related to obstruction of pancreatic or biliary duct, or compression on the surrounding vessels. We describe nine cases of asymptomatic PLs which were all incidentally detected on CT examinations with unrelated reasons.

Methods and Materials

Between March 2006 and February 2009, 9 patients with PL that were diagnosed by CT were reviewed in the present study. Clinical data and CT features of these 9 cases were retrospectively analysed. Patient population included 5 men and 4 women aged 42-81 years (mean age 65.8). CT scans of two patients were performed on a single slice spiral CT scanner (Somatom AR SP, Siemens, Erlangen), and the others were performed with a double-detector helical CT (HisPEED NXi, GE Medical Systems, Milwaukee, Wis) and a 16-slice MDCT scanner (Sensation 16, Siemens Medical Solutions). The patients were followed up for at least 2 years with control CT scans.

Results

In all of 9 cases, a well-bordered nodular fat density lesion was incidentally detected in the pancreas. Four of the lesions had lobulated contour and two of them had septations. Two of the lipomas were located in the head, three in the neck, three in the corpus and one in the tail (on page 3 Figures 1-3). The size of the lesions in axial plan were consecutively 0.8 x 1 cm, 1 x 1 cm, 2 x 2 cm, 2.5 x 2 cm, 1.5 x 1.3 cm, 2.2 x 1.8 cm, 0.4 x 0.3 cm, 0.8 x 1 cm and 1.1 x 1 cm. The CT densitometric values were ranged between -90 HU and -120 HU with a mean value of -106 HU. No pancreatic or biliary dilatation or no compression to the adjacent structures was seen. All the cases had control CT scans and the Lipomas remained unchanged during the follow-up period. Histopathologic confirmation of the diagnosis was not planned for the cases.

Images for this section:
**Fig. 1:** Incidental lipomas (a-d) of the pancreatic body demonstrated with transverse CT images (arrows).
Fig. 2: Incidental lipoma of the pancreatic tail in a 75 year-old man. Transverse contrast-enhanced CT image demonstrates a small, 0.8 x 1 cm, well-marginated, round, fatty (-90 HU) nonenhancing mass circumscribed by normal parenchyma.

Fig. 3: Incidental lipomas (a,b) of the pancreatic head demonstrated with transverse CT images (arrows).
Conclusion

Lipomas are common benign mesenchymal neoplasms and may be found anywhere in the body. However, PLs are uncommon benign mesenchymal neoplasms. To our knowledge, only 26 cases and a study have reported previously. Only eight cases have been confirmed histopathologically after surgery or US guided fine needle aspiration. The others were assumed to represent lipomas based on their stability and characteristic appearances without histopathologic verification as in the presented report. In our study, pancreatic lipomas were identified incidentally in elder men and women during the CT examination obtained from a variety of indications. The PLs ranged in size from 0.8 x 0.9 cm to 1.9 x 2.5 cm, and had attenuation measurements representing adipose tissue. They were commonly located in the pancreatic head rather than uncinate process, body, tail or neck of the pancreas consistent with the literature.

Lipomas are solid, well circumscribed homogeneous fat density mass lesions on CT imaging and completely surrounded by a thin collagen capsule that may contain fibroreticular septa and scattered vessels. They are histologically composed of mature fat cells. The size of them may range from a few milimeters to several centimeters. The shape of the lipomas may be ovoid, round or semicircular. They are independent of the surrounding parenchyma without any direct contact with the peripancreatic fat tissues.

The CT densitometric evaluation of the lipomas is diagnostic. The density of lipomas ranges from -80 to -120 HU with homogeneous appearance. Lipomas do not enhance with contrast media on imaging studies, indicating a benign fatty structure.

The sonographic appearance of lipomas is generally hyperechoic with some instance of hypoechogenicity. Posterior acoustic attenuation and well-defined margins primarily suggest the diagnosis.

On MRI, lipomas are isointense compared with intraabdominal and subcutaneous fat tissues on both T1- and T2-weighted images, and demonstrate homogeneous and global fat suppression on frequency selected fat-suppression images.

The differential diagnosis of the PLs includes focal fatty infiltration (also known as fatty replacement, adipose atrophy or lipomatosis), lipomatous pseudohypertrophy, teratoma, fibrolipoma, lipoblastoma, and liposarcoma.

As conclusion, lipomas are rarely encountered in pancreas. They are often diagnosed coincidentally as small, well-circumscribed, encapsulated, homogeneous mature adipose masses on imaging studies. Imaging follow-up strategy or histopathologic confirmation is not necessary in asymptomatic patients.
References


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