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Pancreatic Lipomas – Prevalence in Patients Undergoing Abdominal CT

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Summary

Background:

Pancreatic lipomas are reported to be rare but their prevalence is unknown. This study examined the prevalence of pancreatic lipomas in a sample of patients undergoing abdominal computed tomography.

Material/Methods:

Retrospective review of 100 abdominal computed tomographic scans.

Results:

In 6 patients small pancreatic lipomas were found. There was no predominance in location or gender. The lipomas measured between 4 and 12 mm. All lipomas were incidental findings unrelated to patients' symptoms.

Conclusions:

Pancreatic lipomas seem to be quite a common finding and can be found in 6% of patients undergoing abdominal CT. Radiologists should be aware of this finding to establish proper differential diagnosis.

MeSH Keywords:

Lipoma • Pancreas • Tomography, Spiral Computed

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Background

Pancreatic lipomas are reported to be a rare occurrence. As reviewed by Stadnik et al. until now only 50 cases have been reported [1]. They presented one of the largest case series so far, including 13 cases. Those cases were collected during a 6-year period and the authors speculated that this entity may be more common than previously thought. In a 6-month period Dwivedi et al. found 4 pancreatic lipomas in patients undergoing abdominal CT at their department and they concluded that pancreatic lipomas seem not to be a rare tumour [2]. However, until now, to the best of our knowledge, there has been no systematic study examining the prevalence of lipomas, which is thus unknown. Therefore the prevalence in a sample of patients undergoing computed tomography (CT) of the abdomen was studied.

Material and Methods

This retrospective study was performed in accordance with a statute of the ethics committee of the affiliated University of Göttingen. Out of all abdominal CT scans

performed at our department during a 3-month period in 2014, a sample of 100 consecutive abdominal CT scans was selected and retrospectively examined. The patients were scanned for a wide range of indications (inflammation, malignancy, trauma, intestinal obstruction). CT scans with marked motion artefacts as well as scans with severe pancreatic pathologies (especially advanced stages of pancreatic cancer, severe acute or chronic pancreatitis) were not considered for inclusion. All patients had a scan in a portal venous phase after administration of 120 mL of intravenous contrast (Imeron[®] 350, Bracco Imaging, Konstanz, Germany). The use of the contrast media was mandatory not to overlook small enhancing nodules/septa inside the lipomas. The sample consisted of 54 male and 46 female patients with a mean age of 65.7 years (range 19–92 years). All patients were scanned with a 16-slice CT scanner (Activion, Toshiba Medical Systems, Tokyo, Japan) using a spiral CT scan with a slice thickness of 1 mm. The primary axial slices were examined in standard soft tissue window settings on a medical workstation using the departmental PACS (SynedraView 3, Synedra Information Technology, Innsbruck, Austria). The diagnosis of a pancreatic lipoma was made on the basis of the following imaging

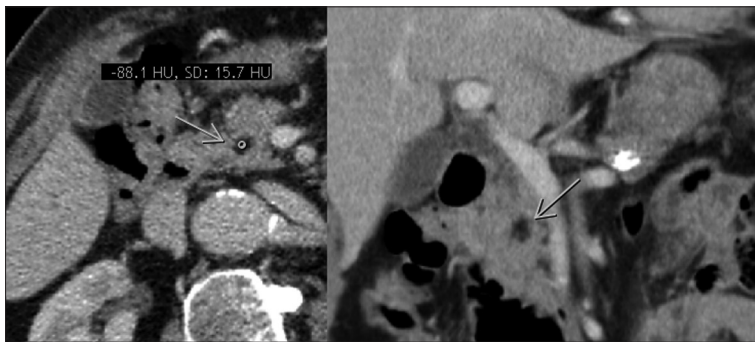


Figure 1. Typical pancreatic lipoma on abdominal computed tomography in a 72-year-old man undergoing staging for a recurrent lung cancer. There is a well-circumscribed fatty mass (-88.1 HU) located in the pancreatic head (arrows).

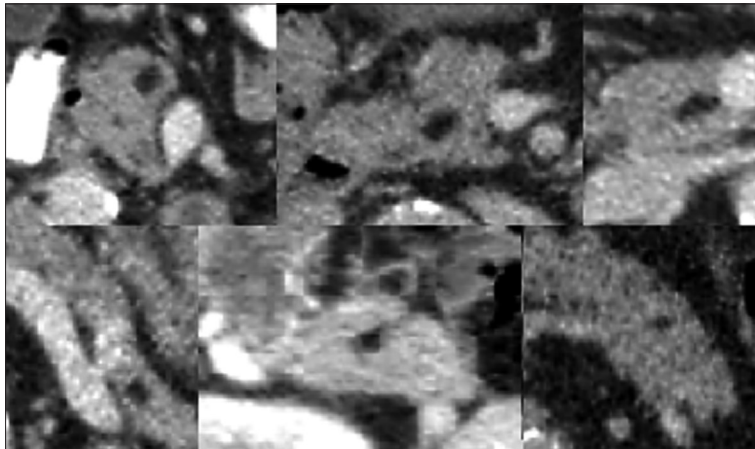


Figure 2. Computed tomographic imaging features of the found 6 pancreatic lipomas.

findings: a well-circumscribed mass located inside the pancreatic parenchyma or with fat density of less than -30 Hounsfield Units (HU) (Figure 1). Descriptive statistics were performed.

Results

In this series, 6 patients showed the presence of a pancreatic lipoma (6%). The lipomas measured between 4 and 12 mm. Of those 6 lipomas, 3 were located in the pancreatic head, 1 in the pancreatic body and the remaining 2 in the pancreatic tail (Figure 2). All patients with lipomas were over 67 years of age. There was no gender preference (3 lipomas were found in women, 3 in men). All pancreatic lipomas were incidental findings unrelated to patients' symptoms. Only 50% of the lipomas were initially noted in the radiologists' reports (3 out of 6).

Discussion

The established high prevalence of pancreatic lipomas is in accordance with the observations of Stadnik et al. and Dwivedi et al., who suggested that pancreatic lipomas may be more common than reported before [1,2]. However, that high prevalence is in clear contrast to the relatively small number of case reports in the literature, and this discrepancy needs to be explained. One explanation is the fact that reporting radiologists interpret lipomas as focal areas of elevated fat content connected with progressive atrophy or lipomatosis of the organ. Sometimes, marked lipomatosis or atrophy of the pancreas may be accompanied by small fatty areas inside the pancreas, communicating with the surrounding fat. Another explanation is that the fatty nature

of these small lesions is assessed as a benign finding not worth further comment. Small lipomas may also be hard to recognize on thick slices (5 mm are thicker) due to volume averaging effects. As there is only sparse literature on this topic, the radiologists may simply not be aware of the entity of pancreatic lipomas, i.e. they do not include them in their differential diagnosis. Interestingly, in our sample, only 50% of the lipomas were initially reported. The same discrepancy between quite a common occurrence and the disregard in the literature has been shown also for small intracranial lipomas on brain CTs [3].

Lipomas are small mesenchymal tumours containing mature fatty tissue which are lined by a capsule. The fatty nature of the lesion can be confirmed using measurement of fat-isodense HU on CT and with in-phase and out-of-phase magnetic resonance imaging [1]. Finding a well-circumscribed purely fatty mass on imaging is diagnostic and histological confirmation is usually not needed [4,5]. Pancreatic liposarcoma is a very rare occurrence and only a few cases have been reported in the literature [1,4]. The presence of a large fatty pancreatic mass (>5 cm) with irregular borders, signs of infiltration of adjacent structures and areas of soft tissue attenuation should raise the suspicion of pancreatic liposarcoma and further evaluation is indicated in this case. With aging, obesity and diabetes, fatty infiltrations may appear, which may be focal or generalized [5]. Lipomatous pseudohypertrophy of the pancreas is characterized by replacement of pancreatic tissue by fat and enlargement of the parenchyma, clinically accompanied by exocrine pancreas insufficiency [6]. Like in our case series, most pancreatic lipomas are incidentally found during abdominal cross-sectional imaging [1,2,7].

Symptomatic pancreatic lipomas due to obstruction of the biliary tracts have been reported and may require surgery [5].

There are several limitations of this study. There was no histological confirmation of the found pancreatic lipomas, but as discussed above, imaging features seemed to be diagnostic of a lipoma. Another limitation is the relatively small sample of hospitalized European patients, i.e. more data from different patient samples is needed until the findings of this study can be generalized.

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Conclusions

Pancreatic lipomas are quite a common finding and can be found in 6% of patients undergoing abdominal CT. They seem to be incidental findings lacking clinical relevance in most patients. Radiologists should be aware of this finding to establish a proper differential diagnosis.

Conflict of interest

There is no conflict of interest to declare.