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CT Finding of Pancreatic Lipoma: A Case Report

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ABSTRACT

The pancreas is a very important mixed gland in the alveolar structure that secretes both internally and externally. While the pancreas secretes glucagon, insulin and somatostatin hormones (endocrine) into the blood, it secretes amylase, lipase and trypsin enzymes (exocrine) to the second part of the duodenum. It has 4 sections of head of the pancreas, neck of pancreas, body of pancreas, and tail of pancreas. Pancreatic lipomas are rare lesions that are usually detected incidentally on imaging methods. It has been reported in the literature that if the lesion is uncompressed and not large, it is usually asymptomatic. In our article, in the axial abdominal computed tomography examination obtained following intravenous (IV) and oral contrast agent administration in a patient who was followed up for breast cancer; A nodular lesion with a fat density of approximately 4 centimeters localized at the level of the uncinate process of pancreas was detected. It is thought that this lesion is a pancreatic lipoma. Our study described the computed tomography imaging features of pancreatic lipoma, its differential diagnosis, and a brief review of the relevant literature. In addition, we think that our study may be useful for radiologists and surgeons in the diagnosis and follow-up of the lesion.

Pankreas Lipomu: BT Bulgusu

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ÖZ

Pankreas, hem iç hem de dış salgı yapan alveoler yapıda çok önemli miks bir bezdir. Pankreas glukagon, insülin ve somatostatin hormonlarını (endokrin) kana salgılarken, amilaz, lipaz ve tripsin enzimlerini (ekzokrin) ise duodenum'un ikinci bölümüne salgılar. Pankreas'ın, caput, collum, corpus ve cauda olmak üzere 4 bölümü vardır. Pankreatik lipomlar nadir görülen ve genellikle görüntüleme yöntemlerinde rastlantısal olarak tespit edilen lezyonlardır. Literatürde eğer lezyon bası yapmıyorsa ve büyük değilse, genellikle asemptomatik olduğu bildirilmiştir. Makalemizde meme kanseri nedeniyle takipli olan hastada rutin onkolojik tarama amaçlı çekilen intravenöz (IV) ve oral kontrast madde uygulamasını takiben elde olunan axiel batın bilgisayarlı tomografi incelemesinde; pankreas'ın processus uncinatus'u düzeyinde lokalize yaklaşık 4 santimetre çapında yağ dansitesinde nodüler lezyon tespit edildi. Bu lezyonun pankreas lipomu olduğu kanısına varılmıştır. Çalışmamız pankreas lipomunun bilgisayarlı tomografi görüntüleme özelliklerini, ayırıcı tanısını ve konu ile ilgili literatürün kısa bir incelemesini kapsamaktadır. Ayrıca çalışmamızın, lezyonun tanınması ve takibinde radyolog ve cerrahlar açısından faydalı olabileceğini düşünmekteyiz.

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INTRODUCTION

The pancreas is a very important mixed gland in the alveolar structure that makes both internal and external secretion. While the pancreas secretes glucagon, insulin and somatostatin hormones (endocrine) into the blood, it secretes amylase, lipase and trypsin enzymes (exocrine) to the second part of the duodenum. In addition, the pancreas is a soft, gray-pink organ located between the duodenum and the spleen. It has 4 sections of head of the pancreas, neck of pancreas, body of pancreas, and tail of pancreas. A protrusion extending towards the midline in the lower part of the head of the pancreas is called uncinate process of pancreas. A notch which is called pancreatic notch and located between the uncinate process of pancreas and the pancreatic body. Superior mesenteric artery and superior mesenteric vein pass through this notch. The proximity of the head of the pancreas with bile duct and some vascular structures is important (Cumhur, 2001; Arıncı & Elhan, 2006).

Although the majority of benign or malignant benign pancreatic neoplasms arise from pancreatic epithelial cells, mesenchymal tumors rarely derive from the connective, lymphatic, vascular, and neuronal tissues of the pancreas. Mesenchymal tumors constitute 1-2% of all pancreatic tumors and are classified according to their histological origin (Kawahata et al., 2017; Klöppel & Maillet, 1989). Various mesenchymal tumors have been reported, including lipoma, teratoma, schwannoma, neurofibroma, lymphoma, and sarcoma. Pancreatic lipomas are usually detected incidentally on imaging methods. Pancreatic lipomas are rare benign mesenchymal neoplasms with stable size and morphology (Stadnik et al., 2012). There are no need an intervention and a treatment for pancreatic lipomas which are smaller than 3 cm. In addition to this, when pancreatic lipomas do not compress on ductus pancreaticus and ductus choledochus, it is known as an asymptomatic (Secil et al., 2001; Stadnik et al., 2012). Walker et al. (2021) reported that the majority of pancreatic lipomas are asymptomatic and can be treated without surgical intervention. However, they stated that if pancreatic lipomas are large, they can show symptomatic symptoms (abdominal pain and obstructive symptoms) and these symptoms can be treated with pancreatic resection.

CASE REPORT

A contrast-enhanced whole abdomen computed tomography (CT) image of a 59-year-old female patient was examined in the archive of Necmettin Erbakan University Meram Faculty of Medicine Department of Radiology in 2020. Informed consent was obtained from the patient for the study.

As seen in Figure 1, a nodular lesion with a diameter of about 4 centimeters, localized at the level of the uncinate process of pancreas of the pancreas of the patient, who was referred to radiology for follow-up imaging, was detected. Due to the small size and homogeneous density of the lesion, and the CT density value was equal to the adipose tissue, it was diagnosed as a pancreatic lipoma and was followed up. There was superior mesenteric vein in the anterior neighborhood of the lesion and normal pancreatic parenchyma in the posterior neighborhood. Superior mesenteric artery was located in the medial neighborhood of the lesion, while the distance between the lesion and the artery was determined as approximately 4 milimeters. In our asymptomatic case, bile duct, pancreatic duct, and neighboring vascular structures were not compressed.

DISCUSSION

Bigard et al. (1989) first described pancreatic lipoma in a 63-year-old female patient (Bigard et al., 1989). When diagnosing pancreatic lipoma, it is necessary to distinguish the lipoma from other lesions containing adipose tissue (focal fatty infiltration of the pancreas, teratoma, liposarcoma). Fatty tissues and pancreatic lipomas in other parts of the body are observed in a similar structure on computed tomography and magnetic resonance imaging. Usually, the differential diagnosis of focal fatty infiltration and lipoma is not clinically important unless they cause pressure. In the differential diagnosis of liposarcoma from a lipoma, if the lesion is large (> 5 cm), heterogeneous and less frequently, it suggests liposarcoma (Bülbül et al., 2013; Stadnik et al., 2012).

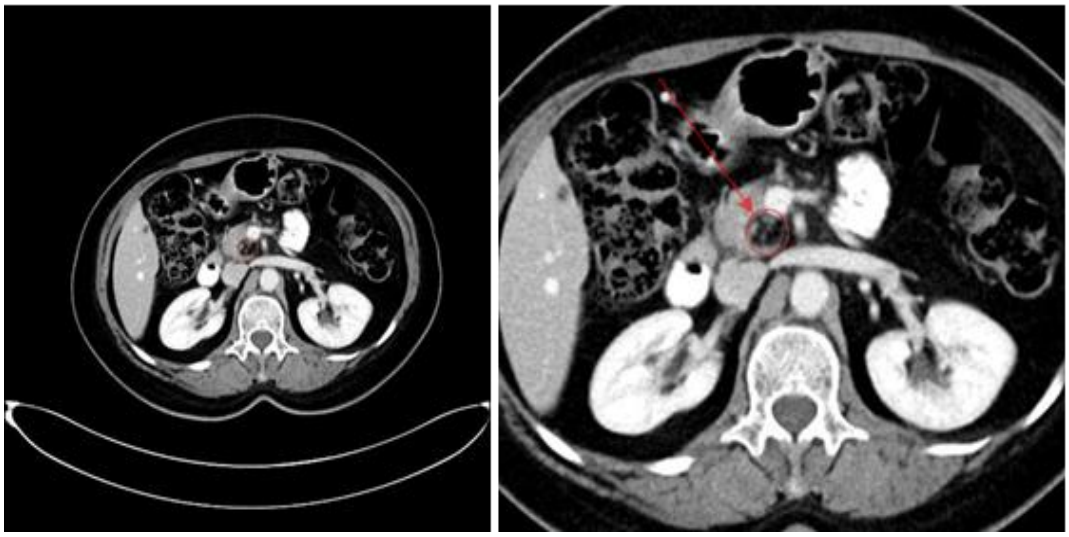

Figure 1. *Axial IV and oral contrast-enhanced abdominal CT image shows a fat density lesion (red arrow and circle) in the head of the pancreas.*

Hois et al. (2006) analyzed 6000 CT scans and identified 5 of them as a pancreatic lipomas (0,083%). They stated that the lipoma dimensions were 1.7 x 1.9 cm, 2.5 x 1.7 cm, 0.9 x 0.9 cm, 1.2 x 1.2 cm, 0.4 x 1.5 cm. Dwivedi et al. (2011) found 4 pancreatic lipomas as a result of 6-month screening. They reported that the lipoma dimensions were 0.4 x 0.8 x 1.1 cm, 1.1 x 1.7 x 1.8 cm, 0.6 x 0.8 x 0.7 cm, 1.1 x 1.2 x 1.3 cm. Also, Gossner et al. (2014) detected 6 pancreatic lipomas (6%) as a result of 100 retrospective abdominal CT scans. They stated that they measure lipomas between 4-12 mm (Dwivedi et al., 2011; Gossner, 2014; Hois et al., 2006). Hois et al. (2006) suggest that the incidence of lipoma may not be as low as previously thought, but may have overlooked or not reported by researchers or clinicians. (Hois et al., 2006). As a result of the increasing use of CT imaging methods, incidental detection of pancreatic lipomas and other pancreatic masses has become more common. The true incidence of pancreatic lipomas is not known exactly. However, as a result of retrospective studies, the rate of pancreatic lipomas in asymptomatic patients was reported as between 0.08-0.012% (Butler et al., 2016; Hois et al., 2006, Walker et al., 2021).

Ultrasonography is not the gold standard imaging method for detecting pancreatic lipomas, because pancreatic lipomas can be difficult to detect as they may be hypococcal, isoechoic, or hyperechoic on ultrasonography. CT examination is the most effective imaging method for the diagnosis of pancreatic lipomas. Generally, a pancreatic lipoma is a homogeneous hypodense mass with density values ranging from -30 to -120 Hounsfield units (Aithal Sitharama et al., 2016). Butler et al., (2016) stated that low-risk pancreatic lipomas should be followed up with imaging methods for evaluating changes on size and heterogeneity of pancreatic lipomas at certain intervals. They also reported that endoscopic ultrasound provides less benefit than CT imaging in these low-risk lesions and should be used more carefully for patients with low-risk pancreatic lipomas.

In most of the cases reported in the literature, lesions are located at the head of the pancreas (Aithal Sitharama et al., 2016; Ferrozzi et al., 2000; Gossner, 2014; Hois et al., 2006; Katz et al., 1998; Monte et al., 2006; Stadnik et al., 2012; Walker et al., 2021). In only some cases it was found on different places such as the neck of the pancreas (Kawahata et al., 2017), the tail (Gossner, 2014; Katz et al., 1998; Secil et al., 2001), the body (Gossner, 2014), and body-tail junction (Bülbül et al., 2013; Hois et al., 2006). In our case, it was found that the lipoma was on the head of the pancreas.

Aithal Sitharama et al. (2016) stated that the detection of most pancreatic lipomas with imaging methods is sufficient and histopathological confirmation is not needed. They reported that histopathological examination is required in cases with larger tumors in which the differentiation of lipoma from malignant and lipid-containing tumors is difficult.

Pancreatic lipomas are rare and usually asymptomatic lesions. In the presence of malignancy, when it reaches very large dimensions and/or cholestasis due to obstruction in the bile flow, they may become symptomatic and surgical treatment may be required. Therefore, it is very important to use radiological imaging methods such as CT and MRI for the detection, differential diagnosis and follow-up of small pancreatic lipomas. We think that our study may be useful for radiologists and surgeons in the diagnosis, and follow-up of the lesion.

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Conflict of Interest

No conflict of interest.

Author Contributions

Design: A.K., M.T.Y.; Data collection or processing: C.K.; Analysis or interpretation: M.T.Y., C.K.; Literature search: A.K.; Writing: A.K.

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