Imaging Findings of Acute Pancreatitis Secondary to Pancreatic Tumors

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Learning objectives

Evaluate the characteristic radiologic findings of the **pancreatic tumors** that are presented with **acute pancreatitis** as initial clinical manifestations.

Background

Pancreatic tumors are difficult to be early detected because of the related symptoms are often non-specific, subtle or even absent. If they are manifested in **acute pancreatitis** without history of alcohol abuse or biliary stone, we can find those tumors more easily.

Imaging findings

From 2006 to 2017, 1506 cases of **acute pancreatitis** by any causes are reviewed for this study. Among them alcohol pancreatitis, gallstone pancreatitis, hyperhypercalcemia, hyperlipidemia, infection, trauma, medication induced pancreatitis were excluded. Only 19 cases (13 men, 6 women) with acute pancreatitis 2ndary to pancreatic tumor without history of alcohol abuse and biliary stone are enrolled in this study. The analysis of image findings included, location of the pancreatic tumor, tumor size, pancreatic duct dilatation, parenchymal swelling adjacent to tumor, peripancreatic fluid collection, regional or distant metastatic lymphadenopathies, vascular invasion/encasement, and venous thrombosis.

Result

Types of pancreatic tumor that were presented **acute pancreatitis** in this retrospective study.

Types of pancreatic tumor	Value
IPMN (intraductal papillary mucinous neoplasm)	12 (61%)
- Benign	10
- Malignant	2
Metastatic pancreatic tumor	5 (28%)
- From lung cancer	4
- From rectal cancer	1
Mucinous cystadenoma	1 (5.5%)
Pancreatic adenocarcinoma	1 (5.5%)

Analyzed image findings in acute pancreatitis due to pancreatic tumors

Image findings		Data
Mean size (cm)		2.4 (1.1-5.8)
Distribution	Head	11 (55%)
	Body	3 (17%)
	Tail	5 (28%)
<u>Localized ductal dilatation</u> (cm)		0.4-0.9
<u>Parenchymal swelling</u>	CT grade C	10 (55%)
	CT grade D	8 (45%)
Venous Thrombosis		1 (6%)
LAP & Vascular invasion		0 (0)

Key image findings in acute pancreatitis secondary to pancreatic tumor

- Localized **upstream duct dilatation at tumor site**
- Parenchymal swelling without** peripancreatic fluid collection

1) Acute pancreatitis by malignant IPMN (52/M)

(a), (b) Abdomen CT shows diffuse pancreatic swelling, peripancreatic infiltration, fluid collection, dilated P-duct, multi-loculated cystic lesion in pancreatic body. (c), (d) EUS, MRCP depicts well defined multilocular cystic mass

2) Acute pancreatitis by malignant IPMN (76/F)

(a, b) CT, (c) EUS, (d)MRCP show Cystic lesion with internal polypoid solid component in pancreatic head. (e) Gross features of IPMN with associated invasion

3) Acute pancreatitis by metastatic pancreatic cancer (57/M)

(a), (b) Known primary lung cancer with brain metastasis. (c) Abdomen CT shows diffuse pancreatic swelling, peripancreatic fluid collection, hypodense lesion in the pancreatic body and right adrenal mass. (d) Multifocal high FDG uptake in PET/ CT indicate metastatic masses of pancreas & Rt. adrenal gland. (e) Histologic feature of metastatic carcinoma from the lung

Conclusion

Acute pancreatitis w/o cholelithiasis or history of alcohol consumption can be the only one clue in early detection of pancreatic tumor. IPMN is most common tumor that can manifest acute pancreatitis in this study. Characteristic image findings in acute pancreatitis secondary to pancreatic tumor are accompanied upstream P-duct dilatation at tumor site & pancreatic swelling without peripancreatic fluid collection.