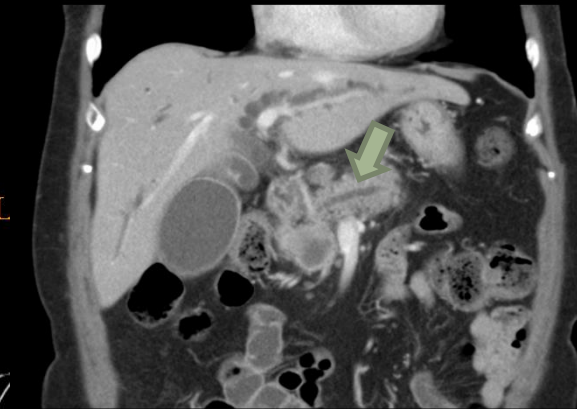
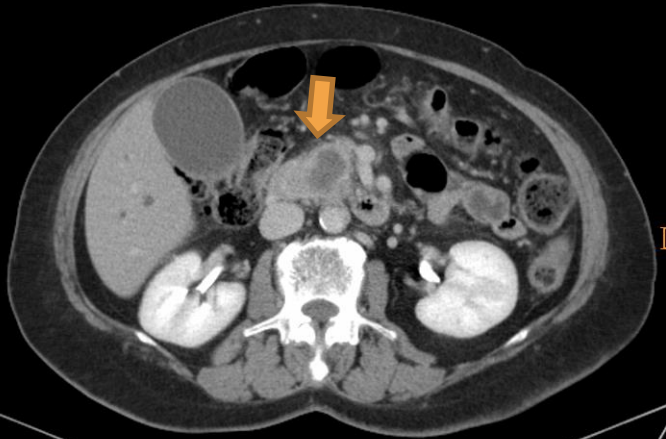
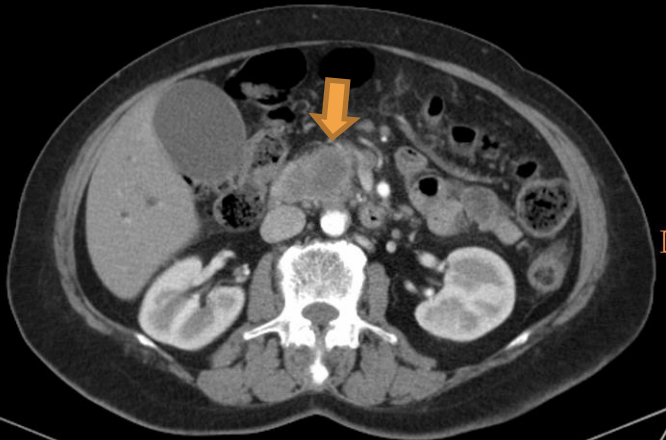
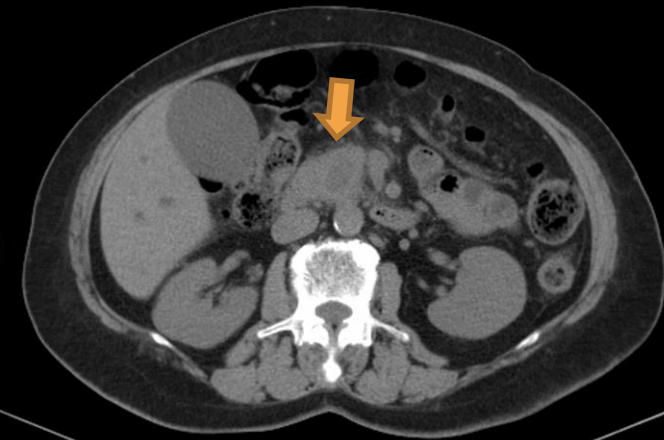


CASE 3

Case 3

- 78F
- No underlying disease
- S: tea-colored urine and poor appetite for 2 months
- O: icteric sclera, jaundice, epigastric tenderness
- 2021-01-18 CT

2020-11-30 CT



DDx

- Pancreatic ductal adenocarcinoma/adenosquamous carcinoma
- Neuroendocrine tumor of pancreas
- Serous cystadenoma of pancreas

Diagnosis

- Pancreatic adenosquamous carcinoma

病理診斷：Pancreas, head, Whipple operation, adenosquamous carcinoma, poorly differentiated

Common hepatic duct, Whipple operation, no carcinoma involvement

Common bile duct, Whipple operation, negative for carcinoma involvement

Intestine, small, duodenum, Whipple operation, carcinoma involvement with free section margin

Lymph node, regional, Whipple operation, carcinoma, metastatic (1/39)

Gallbladder, cholecystectomy, chronic cholecystitis

Lymph node, labelled as 8, lymphadenectomy, no metastasis (0/1)

Lymph node, labelled as 11, lymphadenectomy, no metastasis (0/1)

組織報告：GROSS DESCRIPTION

The specimen submitted consists of one bag labeled as pancreas and two bottles labeled as (1) LN 8 and (2) LN 11, respectively, in fresh state.

The bag consists of one tissue fragment, including the pancreatic head, measuring 6.6 x 5.4 x 4.1 cm in size, distal portion of common hepatic duct (CHD) and common bile duct (CBD), measuring 2.4 cm in length and up to 1.2 cm in diameter, one segment of duodenum and proximal jejunum, measuring 16.4 cm in total length, and gallbladder, measuring 8 x 3.7 x 1.3 cm in size, respectively. Grossly, there is an ill-defined, whitish, and firm tumor, measuring 4.4 x 3.4 x 3.2 cm in size, in the pancreatic head. On cut, the tumor has invaded the ampulla of Vater, sphincter of Oddi, duodenal wall, and peripancreatic soft tissue. The tumor is away from the nearest pancreatic resection margin, CBD margin, and retroperitoneal margin by 0.2 cm, 2.4 cm, and 0.3 cm in distance, respectively. The remote pancreatic parenchyma is not remarkable. The duodenum and jejunum are unremarkable with smooth mucosa. The serosa of gallbladder is smooth and congested. The gallbladder has not been opened. On opening, the mucosa of gallbladder is smooth and stained. The wall measures up to 0.2 cm in thickness. No ulceration is noted in mucosa. Totally, twenty-three regional lymph nodes, measuring up to 2.1 x 1.5 x 1.1 cm in size, are dissected out. The superior, inferior, anterior, and posterior section margins of the pancreas are inked green, blue, red, and black, respectively. The margin of the pancreatic cut section is inked yellow. The margin of common hepatic duct is inked orange.

Pancreatic adenosquamous carcinoma

- Invasive ductal adenocarcinoma of pancreas (IDAC) accounts for the majority of pancreatic malignant neoplasms and has a poor prognosis.
- Adenosquamous carcinoma of pancreas (ASqC) is a rare subtype (1%–4%)
- **Poorer prognosis** (median survival 12 months) than that those with IDAC (median survival 16 months)



Adenosquamous carcinoma of pancreas: CT and MR imaging features in eight patients, with pathologic correlations and comparison with adenocarcinoma of pancreas

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Table 2. Radiological findings of all ASqC patients

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7	Case 8
Location	Tail	Tail	Tail	Body	Head	Head	Head	Head
Maximal diameter (mm)	35	30	40	55	45	17	40	40
Shape	Lobulated	Lobulated	Round	Lobulated	Round	Round	Lobulated	Round
Peak enhancement on dynamic CT	DP	PVP	DP	PAP	PAP	PVP	PVP	DP
Degeneration								
Central necrosis	Predominantly	Predominantly	Predominantly	Predominantly	Predominantly	Partially	Predominantly	Partially
Calcification	No	No	No	No	No	No	No	No
Hemorrhage	No	No	No	No	No	No	No	No
MPD dilatation	No	No	No	Yes	Yes	No	Yes	Yes
Signal-intensity								
T1-weighted image	Hypo	Hypo	NA	Hypo	Hypo	NA	Hypo	Hypo
T2-weighted image	Hyper	Hyper	NA	Hyper	Hyper	NA	Hyper	Hyper
Peak enhancement on dynamic MR	Third phase	Third phase	NA	First phase	Third phase	NA	Third phase	Third phase
Tumor thrombus								
PV system	No	Yes	No	Yes	Yes	No	No	No
MPD	No	No	No	No	No	No	No	No

NA, not analyzed; MPD, main pancreatic duct; PV system, portal, splenic, or superior mesenteric vein; PAP, pancreatic arterial phase; PVP, portal venous phase; DP, delayed phase

The average attenuation value on non-enhanced CT, EAP, PAP, PVP, and DP images was 37, 67, 90, 92, and 90 HU, respectively.

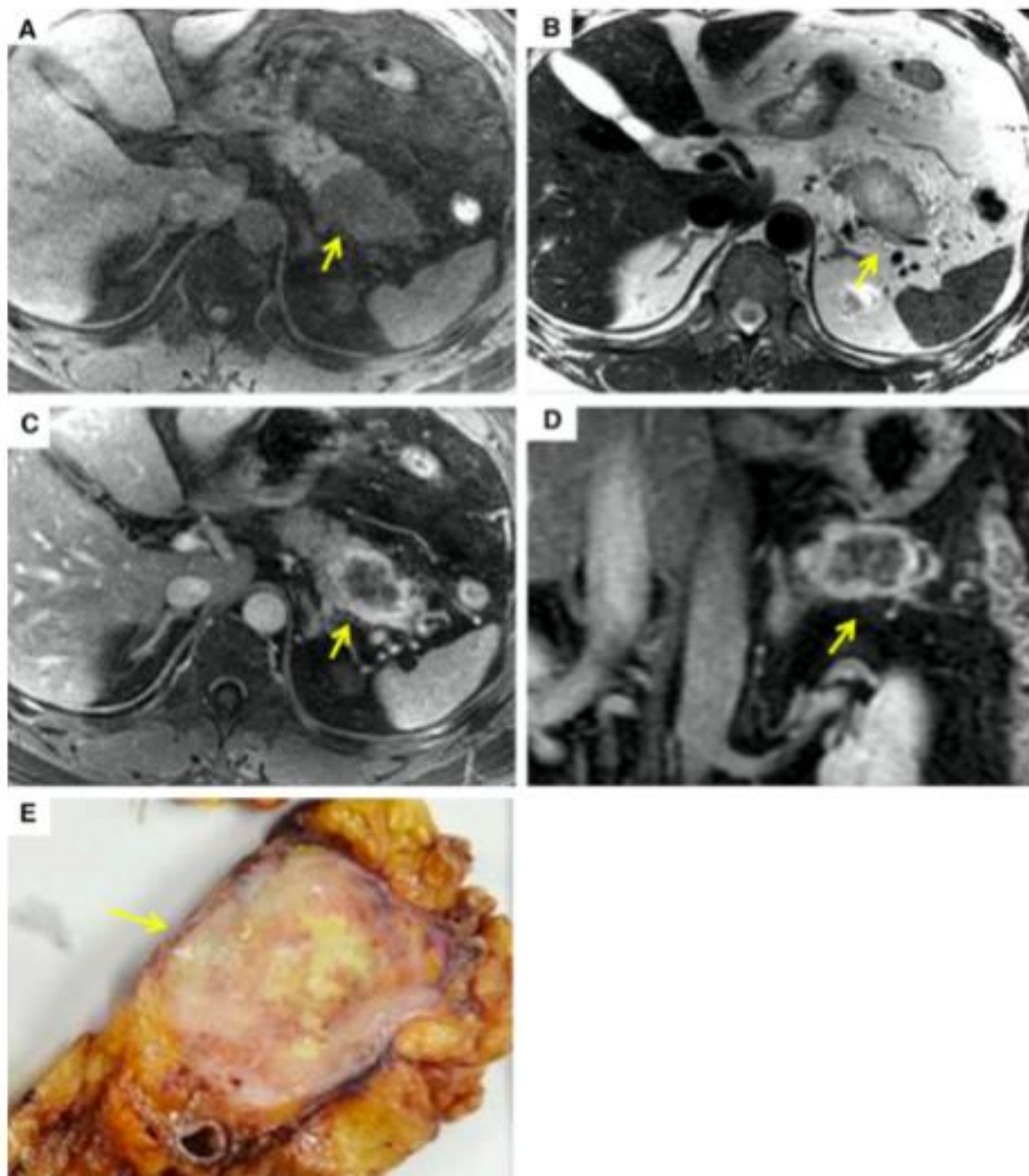


Fig. 2. Adenosquamous carcinoma (ASqC) in the pancreatic tail in a 44-year-old man (case 1). **A** Axial T1-weighted image shows a hypo intense lesion, which appeared as a lobulated mass (arrow). **B** Axial T2-weighted image shows a slightly hyper intense lesion with a central necrosis (arrow). **C, D** Dynamic-enhanced MR images (axial image on third phase and coronal image) show an enhanced lesion with central necrosis (arrow). **E** Microscopically, the lesion is a

nodular type. **F, G** The lesion contains both adenocarcinoma cells (arrow) and malignant squamous cells (arrowhead) on hematoxylin-eosin (H-E) stained slides. **H** H-E stained slide in peripheral zone of the tumor shows a relatively distinct border with the surrounding fat tissue. Additionally, the lesion is surrounded by fibrous tissue (arrow). **I** H-E stained slide in central zone of the tumor shows great amount of necrotic tissue.

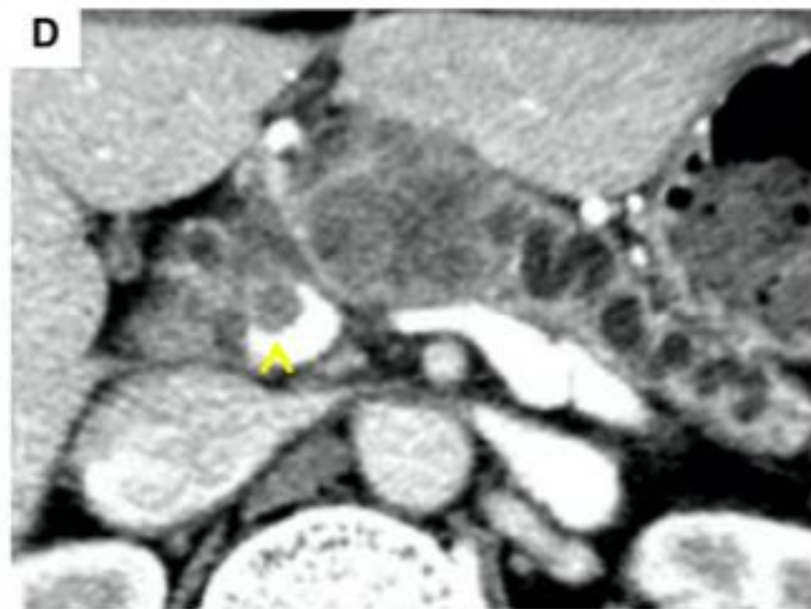
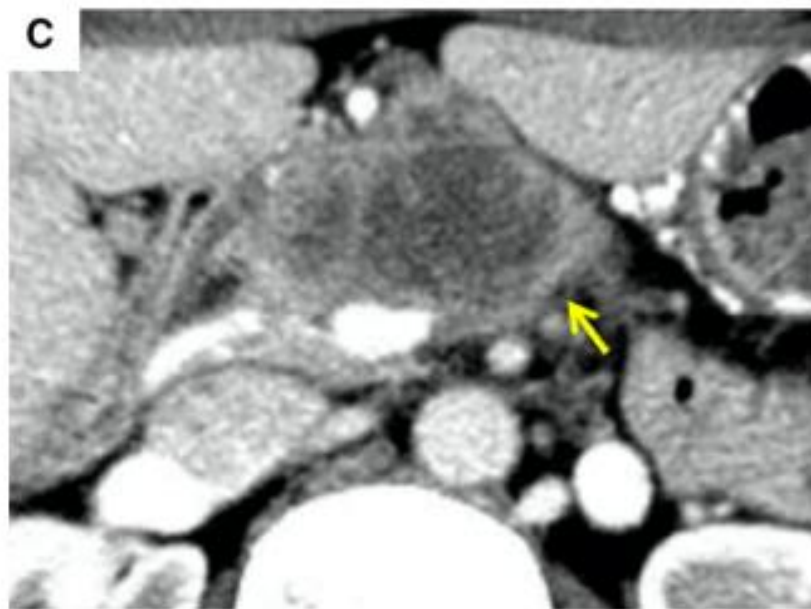
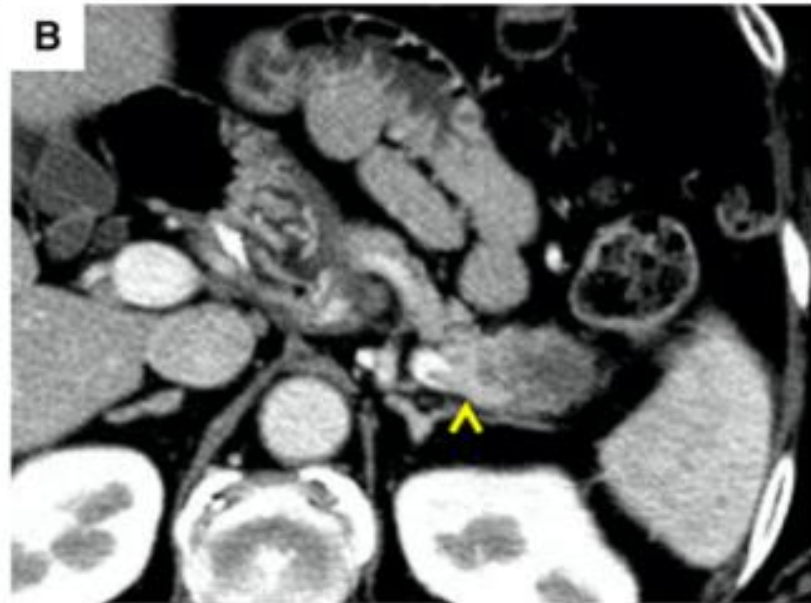


Fig. 5. A, B ASqC in the pancreatic tail in a 56-year-old woman (case 2). Axial portal venous phase CT images show a lobulated lesion with an expansive central necrosis (*arrow*). The lesion has a tumor thrombus in the splenic vein leading to the lesion (*arrow-*

head). **C, D** ASqC in the pancreatic body in a 56-year-old woman (case 4). **C** Axial pancreatic arterial phase image shows a lobulated lesion with central necrosis (*arrow*). **D** A tumor thrombus in the portal vein is shown in portal venous phase image (*arrowhead*).

Table 3. Comparison between ASqC and controlled adenocarcinoma groups in each imaging finding

		ASqC group	adenocarcinoma group	<i>p</i> value
Lesion diameter (mm)		38	31*	NS
Lesion shape	Round-lobulated	8 (100%)	19 (57.6%)	0.0353
	Irregular	0 (0%)	14 (42.4%)	
Peak enhancement on dynamic CT	PAP-PVP image	5 (62.5%)	4 (12.1%)	0.007
	DP image	3 (37.5%)	29 (87.9%)	
Central necrosis	(+)	8 (100%)	13 (39.4%)	0.0034
	(-)	0 (0%)	20 (60.6%)	
Calcification	(+)	0 (0%)	2 (6.1%)	NS
	(-)	8 (100%)	31 (93.9%)	
Hemorrhage	(+)	0 (0%)	2 (6.1%)	NS
	(-)	8 (100%)	31 (93.9%)	
MPD dilatation	(+)	4 (50%)	28 (84.8%)	NS
	(-)	4 (50%)	5 (15.2%)	
T1-weighted image	Hypo	6 (100%)	22 (91.7%)	NS
	Iso	0 (0%)	2 (8.3%)	
	Hyper	0 (0%)	0 (0%)	
T2-weighted image	Hypo	0 (0%)	0 (0%)	NS
	Iso	0 (0%)	3 (12.5%)	
	Hyper	6 (100%)	21 (87.5%)	
Peak enhancement on dynamic MR	First-second phase	1 (16.7%)	5 (20.8%)	NS
	Third phase	5 (83.3%)	19 (79.2%)	
Tumor thrombus in the PV system	(+)	3 (37.5%)	2 (6.1%)	0.0426
	(-)	5 (62.5%)	31 (93.9%)	

Data were number of lesions, with percentages in parentheses
MPD, main pancreatic duct; PV system, portal, splenic, or superior mesenteric vein; PAP, pancreatic arterial phase; PVP, portal venous phase; DP, delayed phase

* Data were shown as mean value

- Key points:

Compared with adenocarcinoma, ASqC tended to be round-lobulated shape, have necrotic portions, show peak enhancement on A phase and have tumor thrombus in the PV system.