ACG CASE REPORTS JOURNAL

IMAGE | PANCREAS

A Rare Case of the Splenic Artery Aneurysm Ruptured Into Pancreatic Mucinous Cystic Neoplasm

Takashi Akutagawa, MD, PhD[1,2], Yasuhisa Sakata, MD, PhD[2], Shiori Okii, MD[2], Furitsu Shimada, MD[2], Hironobu Takedomi, MD, PhD[2], Nanae Tsuruoka, MD, PhD[2], Ryo Shimoda, MD, PhD[1,2], and Motohiro Esaki, MD, PhD[1,2]

[1]*Department of Endoscopic Diagnostics and Therapeutics, Saga University Hospital, Saga, Japan*
[2]*Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine, Saga University, Saga, Japan*

CASE REPORT

A 70-year-old woman was admitted to our hospital because of acute onset abdominal pain and bloody stool. She had no history of pancreatitis; however, a small cyst was detected in her pancreatic tail by abdominal computed tomography 5 years ago. An enhanced abdominal computed tomography demonstrated the extravasation of the contrast medium into the pancreatic cyst, suggesting the rupture of splenic artery aneurysm (SAA) adjacent to the cyst (Figure 1). Interventional radiology was thus conducted, and angiography identified the dilation of distal splenic artery and aneurysmatic dilation. The hemostasis was successfully achieved by interventional radiology using transcatheter arterial embolization with coils (Figure 2).

The pancreatic cyst increased in size from 1 to 3.5 cm during 5 years. Magnetic resonance cholangiopancreatography and endoscopic retrograde cholangiopancreatography showed the lesion was located in the pancreatic tail and had communication with the main pancreatic duct. Based on the results of magnetic resonance cholangiopancreatography and endoscopic retrograde cholangiopancreatography, the cystic lesion was suggestive of branch-duct–type intraductal papillary mucinous neoplasms. We thus underwent distal pancreatectomy and splenectomy to achieve radical cure of both SAA and pancreatic cyst tumor.

Pathological examination revealed the wall of pancreatic cyst was consisted with ovarian-type stroma, and mucinous epithelial layer with papillary proliferation was lined up inside the lumen of the pancreatic cyst (Figure 3). Immunohistochemically, the ovarian-type

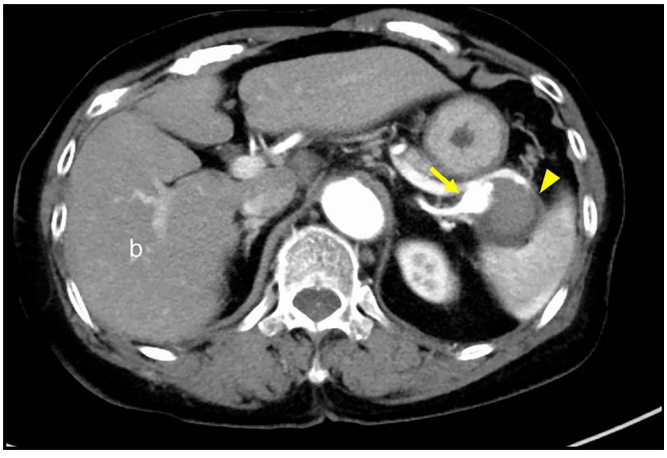

Figure 1. Enhanced computed tomography showed splenic arterial aneurysm raptured for pancreatic cyst. Splenic arterial aneurysm (arrow) and pancreatic cyst with hemorrhage (arrowhead).

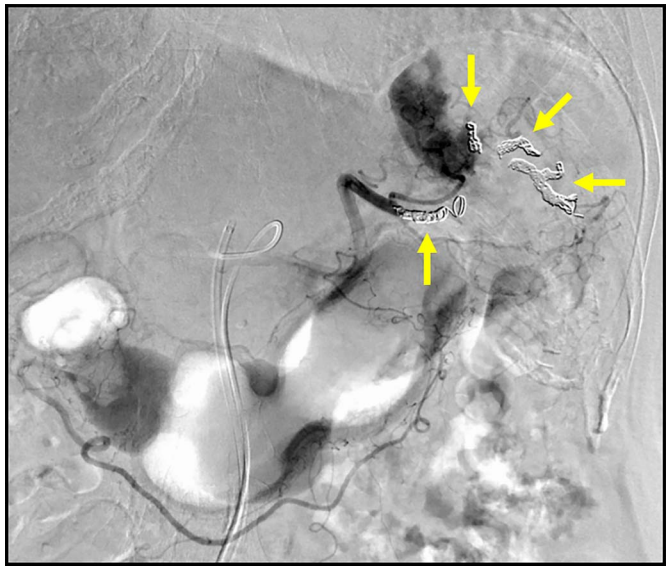

Figure 2. The image of angiography and interventional radiology. Splenic arterial aneurysm (arrow) and embolization with coil (arrowhead).

ACG Case Rep J 2020;7:e00506. doi:10.14309/crj.0000000000000506. Published online: December 21, 2020

Correspondence: Takashi Akutagawa, MD, PhD (sj6399@cc.saga-u.ac.jp).

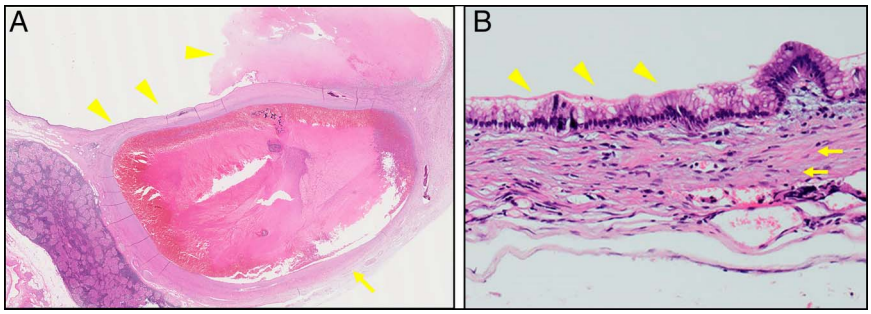

Figure 3. Pathological image showing (A) splenic arterial aneurysm (arrow) and pancreatic cyst with hemorrhage (arrowhead) at low power field and (B) pancreatic cyst is consisted with ovarian-type stroma (arrow), and mucinous epithelium layer with papillary proliferation is lined up inside the lumen of the cyst (arrowhead) at high power field.

Table 1. Laboratory date

Peripheral blood		**Blood chemistry**	
White blood cell	5,400/μL	Total protein	7.3 mg/dL
Red blood cell	448×10^4/μL	Albumin	4.3 mg/dL
Hemoglobin	10.0 mg/dL	Blood urea nitrogen	15.3 mg/dL
Mean corpuscular volume	80.4 fL	Creatinine	0.6 mg/dL
Platelet	10.3×10^4/μL	Aspartate aminotransferase	33 U/mL
		Alanine aminotransferase	22 U/mL
Coagulation test		Gamma-glutamyltransferase	14 U/mL
Prothrombin time (PT)	82.7%	Lactate dehydrogenase	239 U/mL
PT-international normalized ratio	1.08	Alkaline phosphatase	141 U/mL
Activated partial thromboplastin time	125%	Amylase	823 U/mL
C-reactive protein	0.32 U/mL		

stroma was positive for estrogen receptor and progesterone receptor, but negative for inhibin α. The pancreatic cystic tumor was pathologically determined as mucinous cystic neoplasm (MCN), and we finally diagnosed her condition as the rupture of SAA into pancreatic MCN.

SAA usually ruptures into peritoneal or retroperitoneal cavity; however, the rupture of SAA into the pancreatic MCN, as seen in our case, is rare.[1] MCN is a less common type of pancreatic cystic tumor compared with intraductal papillary mucinous neoplasms.[2] MCN predominantly occurs in the pancreatic body or tail in the middle-aged women, and the tumor lacks the communication with the pancreatic ductal systems.

In the present case, however, imaging modalities demonstrated communication with the main pancreatic duct, thus making it difficult to achieve correct diagnosis preoperatively. In this regard, we speculated that the unusual communication with the main pancreatic duct was caused by the elevated inner pressure of MCN by the bleeding from the ruptured aneurysm. Although the successful hemostasis was achieved, we performed additional surgical therapy considering the increase in size of pancreatic cystic tumor and confirmed the diagnosis (Table 1).

DISCLOSURES

Author contributions: T. Akutagwa and Y. Sakata wrote the manuscript. T. Akutagawa, S. Okii, F. Shimada, H. Takedomi, N. Tsuruoka, and R. Shimoda provided the images. M. Esaki approved the final manuscript. T. Akutagawa is the article guarantor.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received June 4, 2020; Accepted September 4, 2020

REFERENCES

1. Habbal YA, Christophi C, Muralidharan V. Aneurysms of the splenic artery: A review. *Surgeon* 2010;8:223–31.
2. Tanaka M, Fernández-del Castillo C, Adsay V, et al. International consensus guidelines 2012 for the management of IPMN and MCN of the pancreas. *Pancreatology* 2012;12:183–97.