Superior mesenteric artery syndrome as a cause of acute pancreatitis

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DESCRIPTION

A 76-year-old man with no history of alcohol abuse was brought to the emergency department with disturbance of consciousness after repeated vomiting. On arrival, he was drowsy and in shock with a systolic blood pressure of ~60 mm Hg and heart rate of 150 bpm. On physical examination, he was cachectic (body mass index, 15.6 kg/m²) with a distended abdomen. Plain CT showed gastric and duodenal distension with abrupt narrowing at the third portion of the duodenum, with the superior mesenteric artery (SMA) crossing anterior to the transition point (figure 1A). Laboratory examination revealed elevated serum amylase of 4132 U/L and C reactive protein of 10.74 mg/dL, with moderately elevated liver enzymes. Contrast CT performed after gastric decompression via nasogastric tube demonstrated swelling of the pancreatic head and surrounding fluid collection (figure 1B). Ultrasonography did not show biliary stone. Reconstructed CT revealed a reduced aortomesenteric angle of 18° (figure 2).

Although idiopathic case could not be denied, the patient was diagnosed with acute pancreatitis with hypovolemic shock resulting from increased intraduodenal pressure due to SMA syndrome (SMAS) and gas bloat.¹ He was treated conservatively for acute pancreatitis with nasogastric drainage for SMAS, and recovered from shock in 24 hours. Enteral alimentation resulted in gradual improvement of his nutritional status, and he was transferred to another hospital for subsequent management after 6 weeks, without recurrence of acute pancreatitis.

The association of SMAS with acute pancreatitis is rarely reported.^{1–3} Secondary occlusive postpapillary syndrome due to SMAS may produce a

Figure 2 Sagittal multiplanar reconstruction contrast-enhanced CT showing the SMA arising from the aorta, forming a narrow aortomesenteric angle (red lines) of 18° (normal, 45–60°). SMA, superior mesenteric artery.

retrograde reflux of bile into the pancreatic duct, which activates the inflammatory phenomena responsible for pancreatitis.² It is important to consider SMAS as a cause of pancreatitis, especially in patients with cachexia with gastric distension accompanying acute pancreatitis of unknown aetiology.

Figure 1 (A) CT axial section demonstrating compression of the third part of the duodenum between the SMA and abdominal aorta (red arrow), with proximal duodenal and gastric dilation. SMA, superior mesenteric artery; Du, duodenum; St, stomach. (B) Contrast-enhanced CT showing swelling of the pancreatic head with poor contrast-enhanced area (*) and surrounding fluid collection extending to the inferior area of the right kidney, suggesting acute pancreatitis. Stones were not detected in the gall bladder or common bile duct. Du, duodenum; St, stomach.

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Learning points

- ▶ A history suggestive of upper gastrointestinal obstruction, such as epigastric pain and repeated vomiting, in a patient with cachexia should raise the clinical suspicion of superior mesenteric artery syndrome (SMAS).
- ▶ SMAS is diagnosed primarily based on CT findings, include a dilated stomach and proximal duodenum and reduced aortomesenteric angle on sagittal multiplanar reconstruction CT.
- ▶ SMAS occasionally accompanies acute pancreatitis.

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