Spontaneous pseudoaneurysm rupture of gastroduodenal artery: A rare and life-threatening condition of back pain

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A 54-year-old man suffered from a sudden midline back soreness while watching television 20 minutes before presenting to our emergency department. He had a history of hypertension and peptic ulcer disease. His body temperature was 35.2°C, blood pressure was 179/108 mmHg, pulse rate was 58 beats/minute, and respiratory rate was 20 breaths/minute. He denied recent trauma, abdominal surgery, alcohol consumption, or vascular disease history. On physical examination, he had mild fullness in the epigastric region. There was no significant abdominal tenderness, no abdominal palpable mass, nor flank-knocking tenderness. An irregular hypoechoic mass located in the upper abdomen was detected by ultrasound examination at the bedside. There was no hydronephrosis, no significant amount of ascites, and no pericardial effusion. The complete blood count, prothrombin time, activated partial thromboplastin time, and biochemistry tests including amylase (49 U/L) and lipase (78 U/L) were unremarkable. Abdominal computed tomography (CT) showed a huge retroperitoneal hematoma with contrast medium extravasation (Fig. 1). Three-dimensional CT demonstrated a pseudoaneurysm of the gastroduodenal artery (GDA). Meanwhile, blood pressure dropped to 93/59 mmHg. Fluid resuscitation and blood transfusions with eight units of packed blood cells and eight units of fresh frozen plasma were given via a central venous catheter. Transcatheter arterial embolization was performed but failed to stop the bleeding. In spite of strong advice by the surgeon, the family refused permission for him to undergo the operation. He developed bradycardia and expired 15 hours after symptoms onset.

Rupture of a GDA pseudoaneurysm is an extremely rare and life-threatening condition. The diagnosis is challenging even for the most seasoned emergency physicians. Clinical presentations of GDA pseudoaneurysm vary widely, from massive gastrointestinal bleeding, obstructive jaundice, unexplained collapse, abdominal pain, and in our case, serious back soreness. Several conditions may lead to GDA pseudoaneurysm formation and subsequent rupture, such as complications after pancreaticoduodenectomy, chronic pancreatitis, trauma, tuberculosis, and septic emboli. However, there was no clinically significant acute or chronic pancreatitis history in our patient and the risk factors for chronic pancreatitis were absent. Although the standard diagnostic tool for a GDA pseudoaneurysm is angiography, CT angiography can nonetheless suggest the diagnosis and is more practical in the emergency department.
In conclusion, GDA pseudoaneurysm needs aggressive management. Early transcatheter arterial embolization and emergent operation are essential to avoid adverse results.

References