CLINICAL VIGNETTE

Cardiac tamponade as a complication of pancreaticopericardial fistula

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A 52-year old man presented to our hospital with a 1-week history of worsening dyspnea and palpitations. His past medical history included excessive alcohol consumption, episodes of acute pancreatitis, and left pleural drainage due to pyothorax.

Physical examination was remarkable for cachexia, irregular tachycardia (due to atrial flutter) (FIGURE 1A), hypotension, and pulmonary congestion. Laboratory tests showed anemia and high levels of inflammatory markers. Chest X-ray demonstrated cardiomegaly, bilateral pleural effusion, and congestion (FIGURE 1B).

Due to echocardiographic evidence of tamponade (FIGURE 1C), fluoroscopy-guided pericardiocentesis with drain placement was performed. An intermittent removal of 2 l of hemorrhagic fluid and restoration of the sinus rhythm resulted in the hemodynamic stabilization of the patient.

Pericardial fluid testing showed its exudative nature and an extremely high level of amylase (38 045 IU/l). Fluid cultures were positive for *Streptococcus pneumoniae* and *Staphylococcus epidermidis*. Of note, in previous cases of pancreatic or biliary fistulas complicated by cardiac tamponade, fluid cultures showed the growth of aerobic and Gram-negative rather than Gram-positive pathogens.[1,2] However, a case report of pericardial empyema due to multiple anaerobic bacteria in the course of periodontitis illustrated pathogen diversity in pericardial effusion concomitant with digestive diseases.[3]

Targeted antibiotic treatment was started. Despite an apparently effective drainage, serial echocardiography showed ongoing fluid accumulation, and loculated pericardial fluid could not be excluded (FIGURE 1D). Subsequent fluid cultures yielded negative results. As we did not suspect either the inflammatory involvement of the myocardium or cardiac neoplasm, better assessed by magnetic resonance imaging,[4] and the diagnosis of pericardial tuberculosis or concomitant lung cancer was considered in this patient, we initially decided to perform computed tomography (CT). Neither pericardial calcifications nor intrapulmonary masses were detected. However, abdominal CT revealed a giant pseudocyst (100 × 50 × 130 mm in size) in the retroperitoneal space between the left atrium and the pancreas, which was suggestive of pancreaticopericardial fistula (FIGURE 1E).

The formation of pancreatic fistulas and pseudocysts is preceded by pancreatitis with subsequent pancreatic duct disruption. Pseudocysts expanding into the mediastinum are extremely rare.[5]

Magnetic resonance imaging, performed in our patient later in the surgery department, showed a fistulous connection between the pancreas and a pseudocyst adjacent to the heart (FIGURE 1F). Endoscopic retrograde cholangiopancreatography revealed a stone in the common bile duct and dilation of the pancreatic duct. Moreover, a fistulous tract from the left hepatic duct to the left hemidiaphragm area was identified.

The patient underwent sphincterotomy with stone removal and had 2 stents inserted into the main pancreatic duct and the left hepatic duct.

The subsequent exacerbation of pancreatitis was primarily treated with CT-guided transhepatic drainage of retroperitoneal fluid. Follow-up echocardiography showed only small, loculated pericardial effusions. The patient reached a self-sufficient functional state at discharge. Evaluation of stent patency and pancreatic surgery

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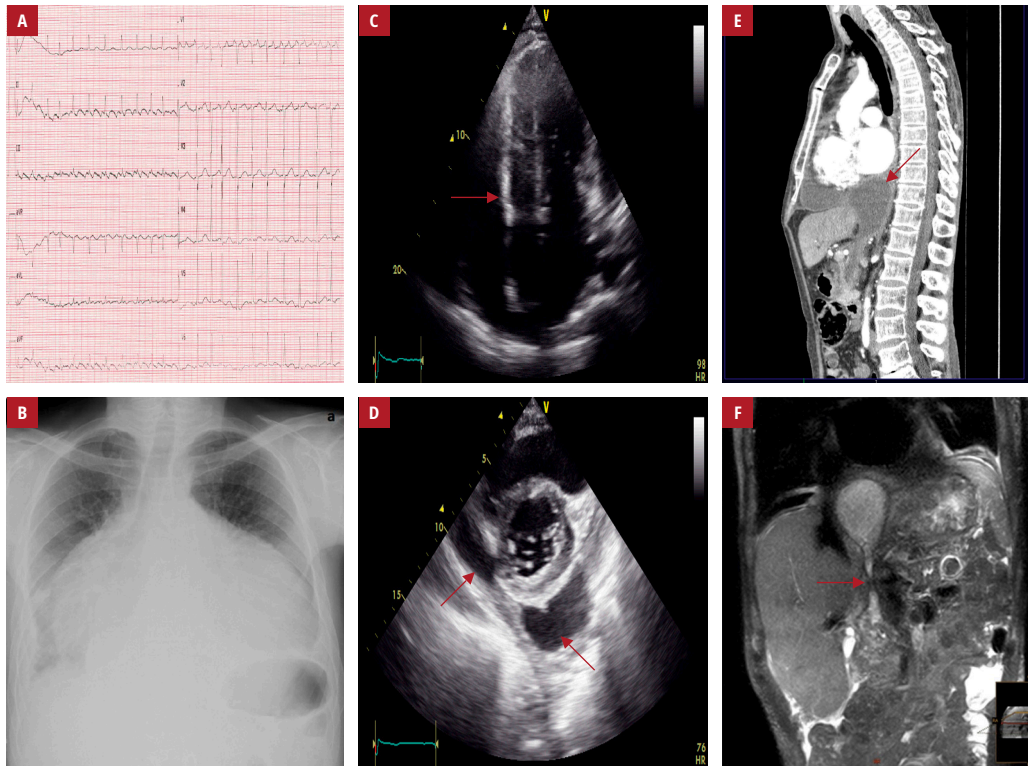

FIGURE 1 **A** – an electrocardiogram showing atrial flutter at a heart rate of 160 bpm; **B** – chest X-ray showing cardiomegaly, bilateral pleural effusion, and congestion; **C**, **D** – echocardiography demonstrating large pericardial effusion with systolic right atrial and diastolic right ventricular collapse (**C**, arrow), as well as loculated pericardial fluid (**D**, arrow); **E** – computed tomography showing a fistulous tract originating in the pancreatic head, extending into the retroperitoneal space, and resulting in mediastinal fluid collection (arrow); **F** – magnetic resonance imaging demonstrating a fistulous tract in the region of the pancreatic head (arrow)

were planned, but the patient refused to undergo further treatment.

There are multiple causes of pericardial effusion, with pancreatic fistula being one of them. Here, we documented the usefulness of various imaging techniques in both diagnostic work-up and therapeutic interventions.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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REFERENCES

1 Sommer CA, Wilcox CM. Pancreatico-pericardial fistula as a complication of chronic pancreatitis. F1000Res. 2014; 3: 31.

2 von Riedenauer WB, Cutsinger RW, Jing XL, et al. Postraumatic pericardiobiliary fistula causing acute bilious pericardial tamponade. J Trauma. 2010; 68: E8-E10.

3 Reisinger A, Matzkies L-M, Eller P, et al. Pericardial empyema due to *Actinomyces israelii*, *Aggregatibacter actinomycetemcomitans*, and *Fusobacterium nucleatum*. Pol Arch Intern Med. 2019; 129: 714-715.

4 Kowalczuk-Wieteska A, Filipiak K, Miszalski-Jamka K, et al. Primary pericardial mesothelioma in a 48-year-old patient. Pol Arch Intern Med. 2017; 127: 792-793.

5 Gupta R, Munoz JC, Garg P, et al. Mediastinal pancreatic pseudocyst – a case report and review of the literature. MedGenMed. 2007; 9: 8.