

# An innovative method for the management of complicated chronic pancreatitis

Mateusz Jagielski, Łukasz Bereziak, Jacek Piątkowski, Marek Jackowski

Department of General, Gastroenterological and Oncological Surgery, Collegium Medicum Nicolaus Copernicus University, Toruń, Poland

A 43-year-old man with sepsis caused by empyema of the left pleural cavity was transferred to our department from another medical center for treatment of pancreaticopleural fistula (PPF) secondary to chronic pancreatitis after an unsuccessful transpapillary drainage of the fistula during endoscopic retrograde cholangiopancreatography (ERCP).

On admission, after additional tests, multiple organ dysfunction as a response to infection was diagnosed. The patient showed signs of respiratory, hepatic, and renal failure (SOFA score, 4 points). Broad-spectrum empirical antibiotic therapy (piperacillin with tazobactam 4.5 g every 6 h) was administered intravenously. During the hospitalization, the left pleural cavity was drained (mean daily discharge from the pleural drain was 1200 ml of purulent content; the activity of amylase in the drain was over 130 000 U/l). Additional parenteral and enteral (with a nasojejunal tube) nutrition was used. Based on the clinical presentation and results of additional tests/imaging (FIGURE 1A and 1B), the patient was qualified for endotherapy.

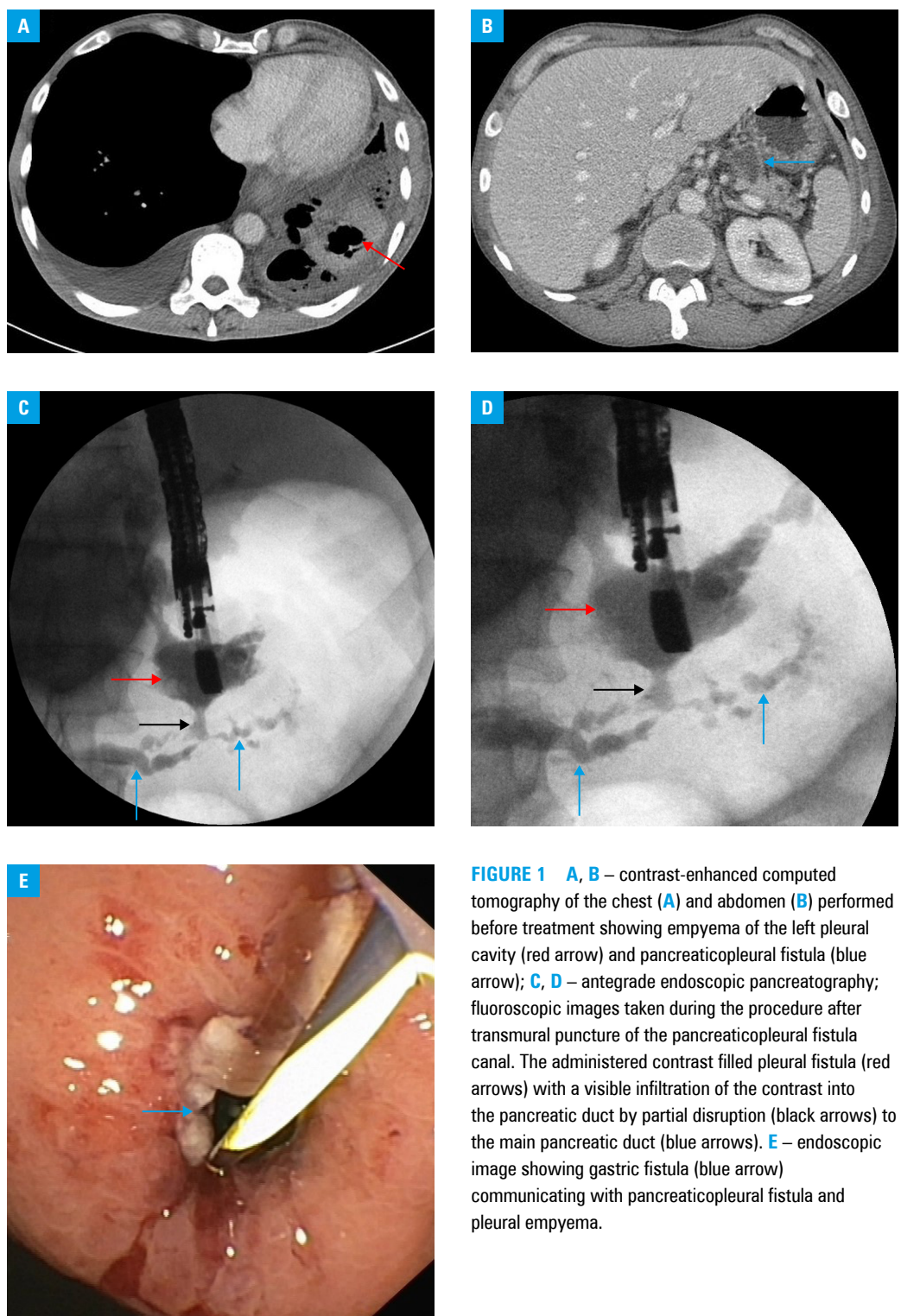
On the third day of hospitalization, during ERCP, access was not obtained via the transpapillary route due to deformation of the duodenum caused by the compression of the pancreatic necrotic collection in the pancreatic head against the duodenal wall, making it impossible to identify the major duodenal papilla. Due to unsuccessful attempts to perform ERCP, the patient was qualified for transmural/transgastric drainage of the PPF during the same endoscopic procedure. Endoscopic ultrasound revealed a channel of PPF with a diameter of approximately 20 mm located near the fundus region of the stomach. A 19-gauge needle under endoscopic ultrasound control was used to puncture the fistula canal, aspiring for purulent content. The specified contrast filled the PPF canal with visible leakage to the empyema of the left pleural cavity and toward the main pancreatic duct (MPD), which was filled

along its entire length due to partial disruption of MPD near the pancreatic tail (FIGURE 1C and 1D). The 10F cystostome was used to widen the gastric puncture canal, the 7F nasal drainage was inserted transmurally, and the 7F 9-cm plastic “double pigtail” endoprosthesis (FIGURE 1E) was introduced for active endoscopic drainage of the PPF, which was continued during hospitalization since no discharge into the pleural drain was observed.

Blood cultures, pleural fluid, and purulent content aspirated from the PPF were positive for *Escherichia coli*, *Klebsiella pneumoniae*, and *Enterococcus fecalis*. The antimicrobial therapy (piperacillin with tazobactam) was continued as targeted antibiotic therapy. The total duration of antibiotic therapy was 14 days. Control contrast-enhanced computed tomography of the chest, abdomen, and pelvis was performed, and the lesions regressed. Due to lack of discharge into the pleural drain and the regression of lesions, drainage of the left pleural cavity was terminated. After 7 days of active transmural drainage, during the next endoscopic procedure, closure of the PPF was confirmed and active transmural/transgastric drainage was completed. After the observation period, the patient was generally in good condition without complaints. He was discharged home after his general condition improved, symptoms subsided, and the parameters in blood laboratory tests were normal. During the 6-month follow-up, there was no recurrence of symptoms and the patient returned to full activity.

Pancreaticopleural fistula is a rare complication of chronic pancreatitis resulting from a disruption to the MPD and leakage of pancreatic juice into the pleural cavity.<sup>1,2</sup> In the presented case, the primary source of infection was pancreatic necrosis complicating chronic pancreatitis and leading to MPD disruption, which resulted in PPF and pleural empyema. To the best of our knowledge, this is the first case report of an effective transmural drainage of PPF with drainage of

Correspondence to:  
Mateusz Jagielski, MD, PhD,  
Department of General,  
Gastroenterological and Oncological  
Surgery, Collegium Medicum  
Nicolaus Copernicus University,  
ul. Św. Józefa 53–59, 87-100 Toruń,  
Poland, phone: +48 56 679 31 99,  
email: matjagiel@gmail.com  
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**FIGURE 1** A, B – contrast-enhanced computed tomography of the chest (A) and abdomen (B) performed before treatment showing empyema of the left pleural cavity (red arrow) and pancreaticopleural fistula (blue arrow); C, D – antegrade endoscopic pancreatography; fluoroscopic images taken during the procedure after transmural puncture of the pancreaticopleural fistula canal. The administered contrast filled pleural fistula (red arrows) with a visible infiltration of the contrast into the pancreatic duct by partial disruption (black arrows) to the main pancreatic duct (blue arrows). E – endoscopic image showing gastric fistula (blue arrow) communicating with pancreaticopleural fistula and pleural empyema.

empyema of the left pleural cavity into the stomach lumen, thanks to which extensive surgical treatments such as thoracotomy and laparotomy were avoided.

#### ARTICLE INFORMATION

**CONFLICT OF INTEREST** None declared.

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#### REFERENCES

- 1 Tay CM, Chang SKY. Diagnosis and management of pancreaticopleural fistula. *Singap-Med J.* 2013; 54: 190-194. [↗](#)
- 2 Ramahi A, Aburayyan KM, Said Ahmed TS, et al. Pancreaticopleural fistula: a rare presentation and a rare complication. *Cureus.* 2019; 11: e4984. [↗](#)