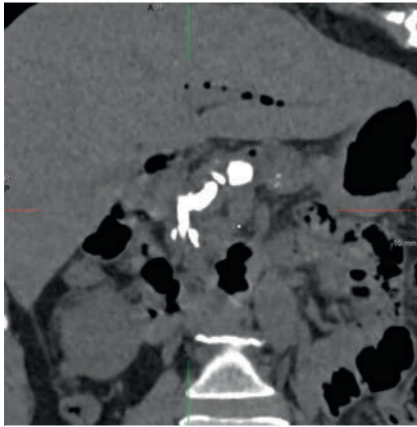
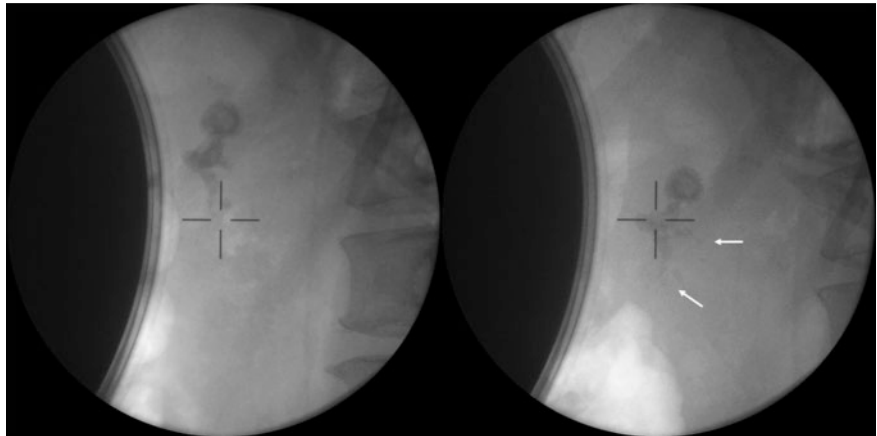


Multiple pancreaticobiliary fistulas combined with acute necrotizing pancreatitis: a rare complication of pancreatic extracorporeal shock wave lithotripsy

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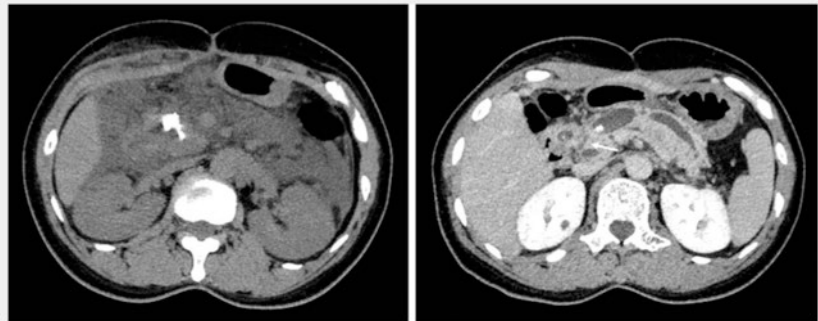


► **Fig. 1** Computed tomography showed chronic pancreatitis with large calcifications, upstream main pancreatic duct dilation, and pneumatosis in the biliary and pancreatic ducts.



► **Fig. 2** X-ray showed that stone fragments (arrows) were expelled after extracorporeal shock wave lithotripsy.

A 54-year-old woman with a history of chronic pancreatitis and cholecystectomy 4 years prior presented with intermittent abdominal pain. Computed tomography (CT) revealed large pancreatic calcifications, main pancreatic duct (MPD) dilation, and pneumatosis in the bile and pancreatic ducts (► **Fig. 1**). She underwent pancreatic extracorporeal shock wave lithotripsy (ESWL) first, during which small stone fragments were expelled (► **Fig. 2**). However, her abdominal pain worsened, with low grade fever post-procedure. Laboratory tests and CT revealed acute necrotizing pancreatitis, extensive exudation and peripancreatic fluid collection, and impacted stones in the pancreatic head (► **Fig. 3**). Abdominal pain control proved difficult without analgesics. Enhanced CT suspected a connection between the MPD and the common bile duct (CBD) (► **Fig. 3**, arrow). Further endoscopic retrograde cholangiopancreatography found two fistula openings near the major papilla, which proved to be bile and pancreatic duodenal fistulas. Pancreatography confirmed the presence of a pancreaticobiliary fistula, linking the distal CBD to the MPD

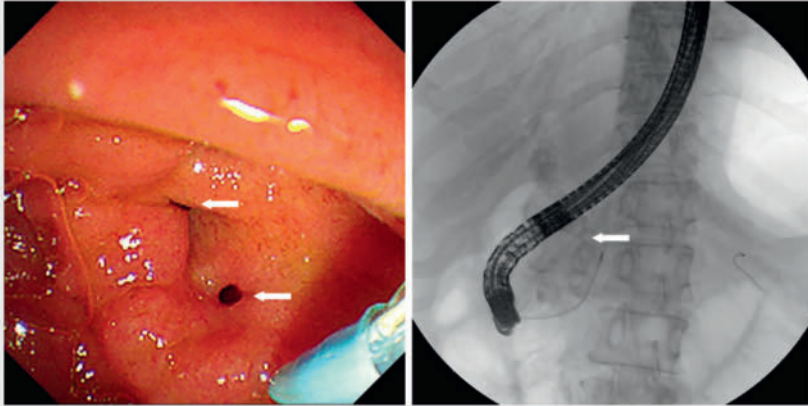


► **Fig. 3** Computed tomography (CT) showed extensive exudation and peripancreatic fluid collection, and impacted stones in the pancreatic head (left). Enhanced CT revealed a suspected connection (arrow) between the common bile duct and the main pancreatic duct (right).

(► **Fig. 4**, ► **Video 1**). After clearing fragments, a 7-Fr×9-cm single-pigtail plastic stent was placed and significantly improved her symptoms. Remarkably, the pancreaticobiliary fistula had healed 2 months later. Pancreatography revealed stenosis with no stones remaining in the MPD (► **Fig. 5**,). However, as CT showed one stone remaining in the pancreatic parenchyma or branch duct, we placed two single-pigtail stents (7-Fr×9-cm and 7-Fr×8-cm) for better drainage.

In the context of pancreatic ESWL, a minority of patients may experience acute pancreatitis with unknown etiology [1]. Multiple pancreaticobiliary fistulas as well as poor drainage is a rare etiology leading to post-ESWL pancreatitis, analogous to pancreaticobiliary maljunction [2]. More attention should be paid to pancreatic ESWL fistulas.

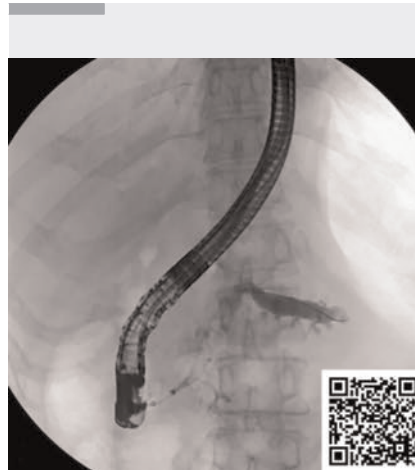
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► **Fig. 4** Endoscopic retrograde cholangiopancreatography showed two bile and pancreatic duodenal fistula openings (arrows) near the major papilla, and confirmed the presence of pancreaticobiliary fistulas.



► **Fig. 5** Endoscopic retrograde cholangiopancreatography showed that the pancreaticobiliary fistula had healed, with no stones remaining in the main pancreatic duct, but with stenosis and common bile duct dilation.



► **Video 1** Multiple pancreaticobiliary fistulas leading to pancreatitis after extracorporeal shock wave lithotripsy, and healing with endoscopic pancreatic stent drainage.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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Bibliography

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