

## Gallstones Within the Pancreatic Duct: An Underlying Pancreaticobiliary Maljunction

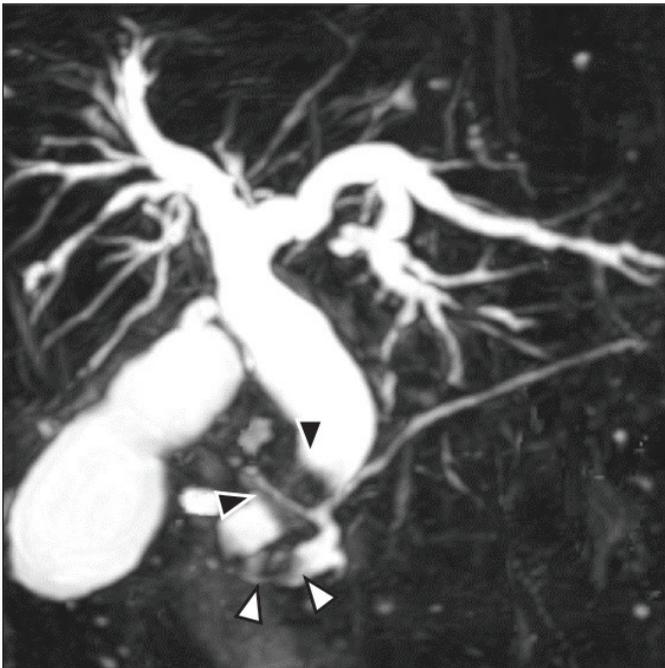
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### Case Report

A 77-year-old woman presented with back pain of several years' duration. She did not consume alcohol, and had no family history of pancreatic disease. Her liver function tests were mildly elevated, but serum amylase and lipase were within normal limits. A subsequent magnetic resonance cholangiopancreatography (MRCP) showed choledocholithiasis without visible cholecystolithiasis, and pancreatolithiasis without any signs of chronic pancreatitis (Figure 1). Endoscopic cholangiopancreatography (ERCP) with endoscopic removal of the stones reveals that the stones removed from the pancreatic duct also appeared to be gallstones (Figure 2 and Figure 3). Although there was no evidence of pancreaticobiliary maljunction (PBM) on the MRCP images, ERCP showed PBM with a small-caliber duct (Figure 4). Finally, the stones removed from the pancreatic duct were identified as calcium bilirubinate gallstones by composition analysis.

PBM is a congenital malformation in which the pancreatic and bile ducts join anatomically outside the duodenal wall.<sup>1</sup> MRCP is a useful and noninvasive modality to diagnose PBM; however, compared with ERCP, MRCP may be of limited value in visualizing a small-caliber duct.<sup>2,3</sup> The new Komi's classification is widely accepted as classification of PBM, and accord-



**Figure 1.** MRCP image showing choledocholithiasis (black arrowheads) and pancreatolithiasis (white arrowheads) with no sign of pancreaticobiliary maljunction.



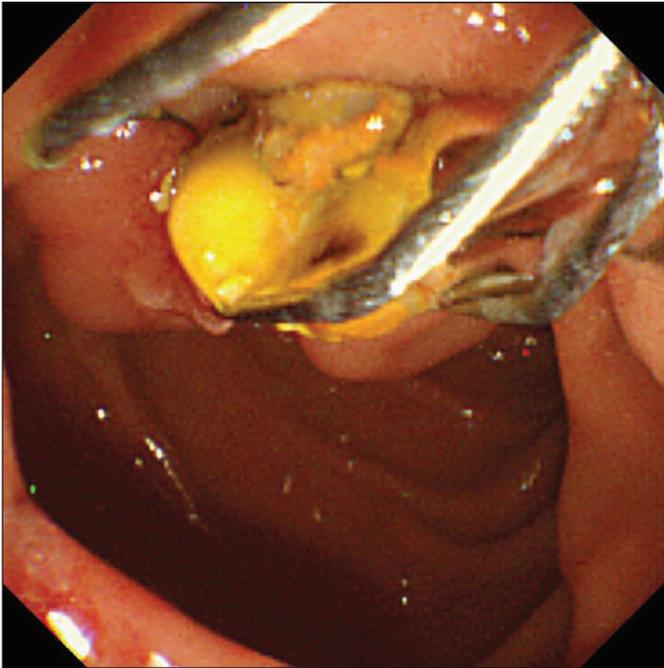
**Figure 2.** ERCP image showing stones within the pancreatic duct.

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**Figure 3.** Endoscopic view of the removed gallstone from the pancreatic duct.



**Figure 4.** ERCP image visualizing pancreaticobiliary maljunction with a small-caliber duct (arrow).

ing to this classification, our case is consistent with the type IIIc3, which rarely been reported.<sup>4,5</sup> Pancreatolithiasis is only rarely encountered in PBM; however, the type IIIc3 of PBM has been reported to be associated with pancreatolithiasis due to the formation of protein plug in the dilated pancreatic duct.<sup>4,6</sup> The pancreatic stones in our case were calcium bilirubinate gallstones presumably formed in the bile duct. We suggest that clinicians consider PBM when diagnosing or treating pancreatic stones in the presence of choledocholithiasis and/or absence of other features of chronic pancreatitis.

## Disclosures

Author contributions: S. Kitagawa wrote the manuscript and is the article guarantor. H. Miyakawa edited the final manuscript.

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