Use of combined methylene blue chromoendoscopy and intravenous secretin for endoscopic therapy in pancreas divisum

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A 40-year-old woman was seen because of several episodes of acute idiopathic pancreatitis that had started at least 2 years before presentation. Prior workup at an outside hospital included an EUS, which had findings concerning for pancreas divisum. Owing to repeated episodes of pancreatitis, secretin-enhanced MRCP was performed and confirmed complete divisum, which is characterized by a separate dorsal pancreatic duct at the minor papilla and a short ventral duct merging with the common bile duct at the major papilla (Fig. 1).[1] An ERCP was initially attempted at an outside hospital but was unsuccessful because the minor papilla could not be identified despite the use of methylene blue. She was referred to our institution for a repeated attempt at endoscopic therapy (Video 1, available online at www.VideoGIE.org).

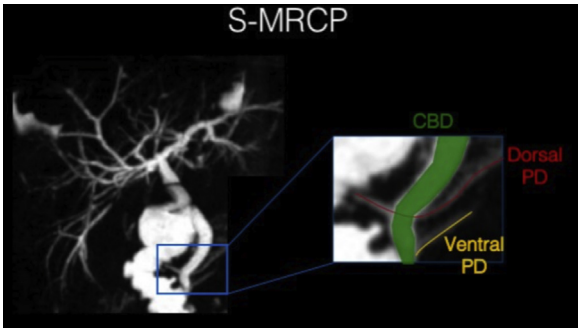

Figure 1. Secretin-enhanced MRCP (S-MRCP) demonstrating complete pancreas divisum with a separate dorsal pancreatic duct (PD) headed toward the minor papilla, and a short ventral PD merging with the common bile duct toward the major papilla. Reproduced with permission from: Fogel EL, Sherman S. Pancreas divisum: Clinical manifestations and diagnosis. In: UpToDate, Post TW (Ed), UpToDate, Waltham, MA. (Accessed on July 1, 2018.) Copyright 2018 UpToDate, Inc. For more information visit wwwuptodate.com.

During ERCP, attempts were initially unsuccessful in identifying the minor papilla, focusing on the area 2 to 3 centimeters proximal and anterior to the major papilla. A diluted solution of methylene blue was sprayed in the duodenum to aid in identification of the minor papilla, but it still could not be identified. Secretin was injected intravenously (0.2 μg/kg administered over 1 minute), and a washout of the methylene blue could be seen at the site of the minor papilla, confirmed on repeated dye spraying. Wire-guided cannulation of the minor papilla was performed with the endoscope in the long position, which is often more favorable for minor papilla access. A 3.9F sphincterotome was passed through the minor papilla with some difficulty, and a limited pancreatogram confirmed complete divisum (Fig. 2). A small minor papillotomy was performed, followed by placement of a 5F straight plastic pancreatic duct stent.

The patient experienced postprocedural abdominal pain, with a normal serum lipase, which resolved after a

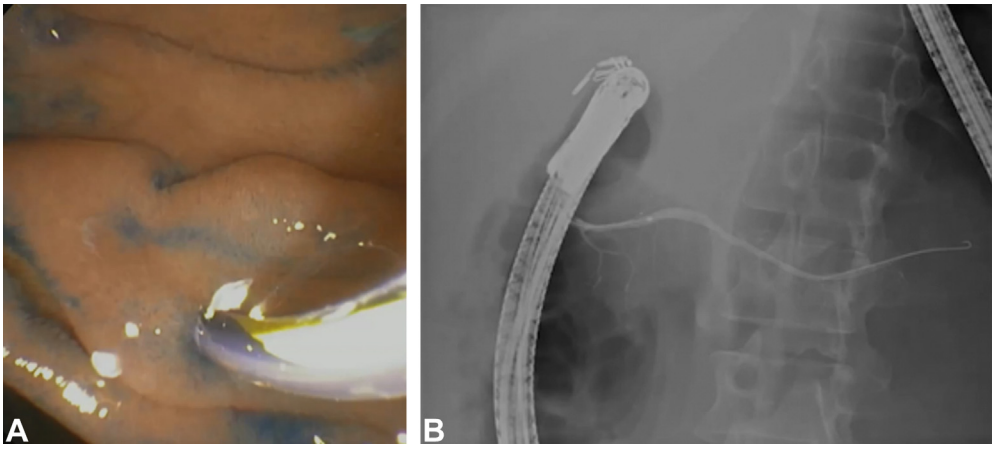

Figure 2. (**A**) A 3.9F sphincterotome at the minor papilla. (**B**) Limited pancreatogram confirming complete pancreas divisum.

24-hour hospital stay for observation. A repeated ERCP was performed 4 weeks later with upsizing of the pancreatic stent to 7F, complicated by post-ERCP pancreatitis requiring a short admission. An EGD was performed 4 weeks later with removal of the pancreatic duct stent. The patient has been pain free since her last procedure.

The prevalence of pancreas divisum in the Western population is about 8%.[2,3] Patients with pancreas divisum can experience acute recurrent pancreatitis as a result of ductal obstruction, minor papillary stenosis, or both.[3] Endoscopic treatment with minor papillary sphincterotomy with or without dorsal duct stent placement are options for patients with divisum and recurrent pancreatitis.[3-5] Methylene blue in combination with secretin has been described as a technique to identify the minor papilla in cases where identification is difficult.[6,7] Secretin stimulates the pancreatic juices and causes the minor papillary orifice to open. The combined use of methylene blue and intravenous secretin is a useful tool when there is difficulty identifying the minor papilla, as visually illustrated in this case.

DISCLOSURE

All authors disclosed no financial relationships relevant to this publication.

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