

CASE REPORT

The endoscopic ultrasound-assisted Rendez-Vous technique for treatment of recurrent pancreatitis due to pancreas *divisum* and *ansa pancreatica*

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ABSTRACT

Endoscopic treatment of pancreatic ductal malformations causing recurrent acute pancreatitis, such as pancreas *divisum* or *ansa pancreatica*, is mainly based on the sphincterotomy of the minor papilla. However, the technical complexity of conventional endoscopic retrograde cholangiopancreatography (ERCP) is increased in patients presenting anatomical variants like these and it may be unsuccessful. We report the case of a pancreas *divisum* combined with *ansa pancreatica* and describe the cannulation and sphincterotomy of the minor papilla using an ultrasound-assisted Rendez-Vous technique.

Key words: Pancreatitis. Rendez-Vous. Treatment. Endoscopic ultrasound.

INTRODUCTION

The cornerstone for treatment of symptomatic *pancreas divisum* is the decompression of minor duodenal papilla by sphincterotomy (1), which has also served for the treatment of other less frequent ductal malformations of the pancreas such as *ansa pancreatica* (2). The latter consists of an additional arcuate branch that connects the dorsal and ventral ducts that is associated with a proximal obstruction of the accessory pancreatic duct (Fig. 1). Endoscopic access to minor papilla in patients presenting anatomical variants such as these increases the technical difficulty and probability of failure, even more so if combined. As conventional endoscopic treatment by endoscopic retrograde cholangiopancreatography (ERCP) may be unsuccessful in these and other situations of a similar nature, an endoscopic ultrasonography-guided access could be attempted in order to achieve the cannulation and sphincterotomy of the minor papilla by the Rendez-Vous technique (3).

CASE REPORT

We report the case of a 72-year-old man with a well-documented history of recurrent acute pancreatitis due to a pancreas *divisum* combined with *ansa pancreatica* (Fig. 1D). This anatomical abnormality was diagnosed by abdominal magnetic resonance imaging (MRI) and confirmed by endoscopic ultrasonography (EUS). The patient was referred to our center for endoscopic treatment (minor papilla sphincterotomy) after two failed attempts using conventional ERCP.

The pancreatic gland was initially examined using an echoendoscope. The accessory duct ran in a curved manner (*ansa*) from the minor papilla to the main pancreatic duct, which in turn had a retrograde dilation of 5 mm. As the initial cannulation attempt of the papilla minor was unsuccessful, insertion using a Rendez-Vous technique was attempted. The procedure began with a transgastric ultrasound-assisted puncture into the *ansa* with a 19G needle (Figs. 1D and 2A) and the known anomaly was confirmed by a pancreatogram (Fig. 2B). Subsequently, a 0.021 inch guidewire was introduced and advanced toward the minor papilla through the *ansa*. When the duodenal lumen was reached, the echoendoscope was removed and a duodenoscope inserted parallel to the guidewire. Biopsy forceps were introduced using a Rendez-Vous technique through the instrumental channel of the duodenoscope in order to pull the guidewire out from the duodenum and finally achieve a guidewire-assisted cannulation of the minor papilla (Fig. 2C). The guidewire was then removed until it reached the tip of the sphincterotome DASH-21-480 (Cook®) and moved again toward the pancreas tail (Figs. 3 A and B). At this point, a sphincterotomy of the *minor* papilla was performed and a pancreatic stent (a 5 Fr, 5 cm straight plastic stent with side flaps) was inserted endoscopically

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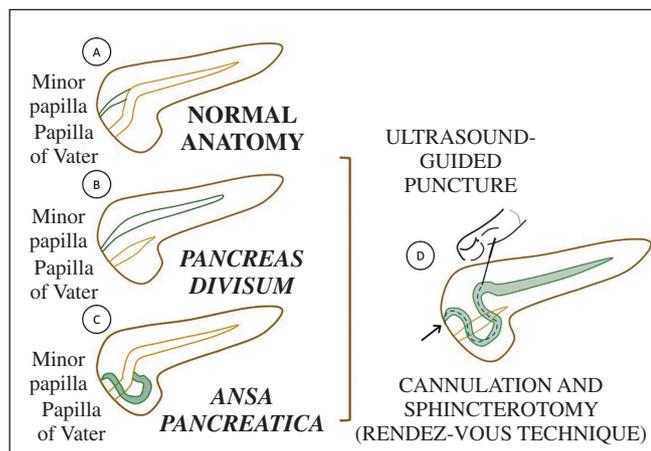


Fig. 1.

in order to ensure pancreatic drainage and prevent acute pancreatitis.

DISCUSSION

Pancreas divisum is the most common congenital variant of the pancreatic duct system and is present in up to 10% of the population according to some studies (4). Nevertheless, it is mostly asymptomatic. This entity occurs due to the lack of fusion of the ventral and dorsal pancreatic ducts during embryological development. Therefore, the dorsal duct must drain the majority of the pancreas into the minor papilla (5).

Ansa pancreatica malformation is considered as another congenital variant in the anatomy of the pancreatic duct system. It is called *ansa* (in Latin this means “handle”) because of its curved morphology. It consists of an aberrant branch that arises from the main pancreatic duct and disembogues into the minor papilla, forming a loop with caudal convexity. (6) (Fig. 1C).

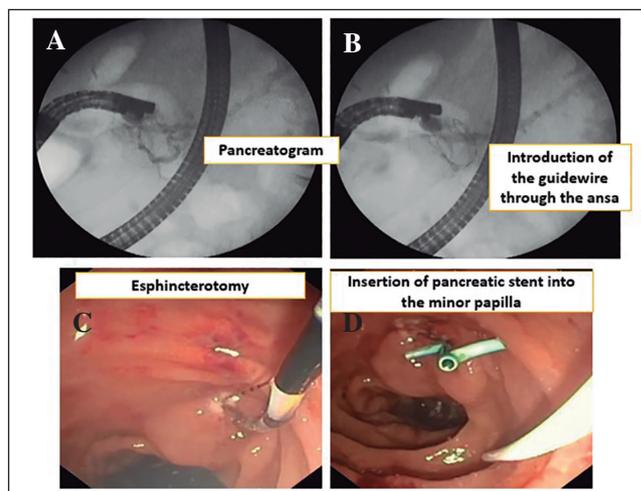


Fig. 3.

The duct of Santorini (accessory pancreatic duct) produces a decompressive effect on the duct of Wirsung (main pancreatic duct) in a normal pancreatic duct system. However, patients with *pancreas divisum* and/or *ansa pancreatica* would hypothetically have an inadequate drainage of the pancreatic duct system and consequently have a relative increase of intraductal pressure into the main pancreatic duct. This has been suggested as a causative factor of pancreatitis (6,7).

Due to the aforementioned, endoscopic treatment of *pancreas divisum* (or more rarely treatment of *ansa pancreatica* [2]) is based on minor papilla decompression, mainly by sphincterotomy. This therapeutic option has been shown to be more effective in patients with acute recurrent pancreatitis than in other clinical settings (9,10).

Isolated endoscopic cannulation of the minor papilla may be technically challenging. As presented above, any combination of different types of ductal abnormalities further increases this complexity. Therefore, the introduction and movement of the guidewires into the duct system may become a great challenge (Fig. 1D). In this report,

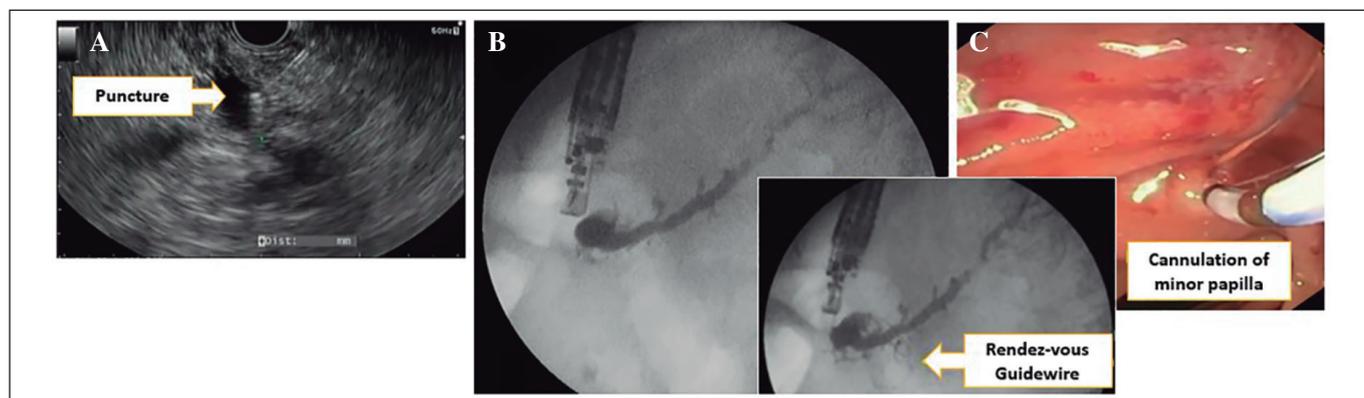


Fig. 2.

we describe for the first time an endoscopic approach for the cannulation of the minor papilla via the *ansa*, using an ultrasound-assisted Rendez-Vous technique. However, this is actually considered as a “typical” indication for this kind of procedure, specifically, pancreatic drainage abnormalities with clinical impact and previous failed ERCP attempts (3,10). Even though this is not the most common indication in clinical practice, it is important to keep it in mind as a therapeutic option in complicated cases.

In conclusion, when performed by expert endoscopists, therapeutic endoscopic ultrasonography is an effective and safe pancreatic drainage option in complex cases where conventional endoscopic procedures have failed.

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