

# Morphological subtypes of the duodenal papilla and their relationship with post-ERCP complications

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Endoscopic retrograde cholangiopancreatography (ERCP) is associated with a high rate of adverse effects within the group of endoscopic digestive procedures. Acute pancreatitis post-ERCP is the most common complication, occurring between 3.5% and 9.7% of the cases and leading to a 0.1% and a 0.7% mortality range. Other complications include perforation, bleeding, cholecystitis, and cholangitis<sup>(1)</sup>. Biliary cannulation is the limiting factor step for a successful ERCP. The European Society of Gastrointestinal Endoscopy (ESGE) has defined difficult biliary cannulation as the presence of more than 5 contacts with the papilla while attempting to cannulate, more than 5 minutes spent attempting to cannulate, or more than 1 unintended passage or contrast injection into the pancreatic duct<sup>(2)</sup>. Difficult cannulation can compromise ERCP success and increase the risk of complications.

Several factors associated with an increased risk of complications during an ERCP have been described. For example, female gender, acute pancreatitis post-ERCP history, a sphincter of Oddi dysfunction suspicion, being 40 years or younger, normal serum bilirubin, difficult cannulation, a medium contrast injection into the pancreatic duct, a passage of pancreatic guide wire to the pancreatic duct, pancreatic sphincterotomy, the presence of coagulopathy, the use of anticoagulant or antiplatelet drugs, among others<sup>(1,3)</sup>. The effect of duodenal papilla morphology on biliary cannulation outcomes has been recently studied<sup>(4,6)</sup>, suggesting that some morphological subtypes of the papilla could be associated with difficulties in cannulation and an increased risk of post-ERCP complications.

In this issue of *Revista Colombiana de Gastroenterología*, the Hospital Nacional Guillermo Almenara Irigoyen group of Lima, Perú, describes a prospective and analytical study of 138 patients who were taken to ERCP, in which the relationship between the morphological type of the duodenal papilla and the risk of post-ERCP complications was determined. For this study, they used the Scandinavian study group classification of Haraldsson *et al*<sup>(6)</sup>, which divides the duodenal papilla into 4 types: type 1, a regular, usual, “normal” papilla with no distinctive characteristics; type 2, a small, flat papilla, with a 3 mm diameter or smaller; type 3, similar to a bulky, pendular, prominent papilla with the papillary orifice oriented caudally; and type 4, defined as a “creased, ridged, extended distally” papilla.

In this study, acute pancreatitis occurred globally in 2.9% of patients, bleeding in 1.45%, and perforation in 0.7%. Flat papillae (type 2) were associated with higher complication rates: perforation (9.09%) and pancreatitis (9.09%). Other authors have also

found a higher rate of post-ERCP pancreatitis in papillae type 2<sup>(6,7)</sup>. As additional data, type 1 papilla (regular) was associated with a shorter cannulation time. Precut papillotomy was the procedure more frequently performed in patients with type 3 and type 4 papillae. Type 4 papilla required a longer cannulation time.

Consequently, some of the questions arising include: what to do with this information? How can we use these data to improve ERCP success and decrease the percentage rate of complications? These questions are relevant since there is currently no way for endoscopists to determine in advance the type of papilla they will deal with –except during ERCP. Furthermore, endoscopists cannot establish a relationship between the morphological type of duodenal papilla and a specific cannulation technique associated

with a higher success rate or lower risk of complications. Some authors have suggested that in the presence of type 2 flat papilla, which entails a higher risk of complications, physicians with the least experience or personnel under ERCP training should refrain from continuing the procedure and let more experienced endoscopists perform it<sup>(8)</sup>. In addition, in the presence of a papilla susceptible to an increased risk of complications (such as acute pancreatitis), it is important to use all the prophylactic measures available to us to reduce the occurrence of such complications, for example, using diclofenac suppositories, pancreatic stents, and hydration with lactated Ringer's solution.

In the meantime, we continue working to find ways to reduce ERCP complications, which are the Achilles' heel of this procedure.

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