Metallic stent placement for malignant biliary stenosis through pancreatic duct in pancreatico-biliary maljunction

Pancreatico-biliary maljunction is a congenital anomaly defined as a connection of pancreatic and biliary ducts upstream of the sphincter of Oddi.

A 66-year-old Japanese woman was referred to our department for treatment of jaundice. She had a childhood history of pancreatitis, but was otherwise healthy. Enhanced computed tomography (CT) revealed a gallbladder cancer with multiple liver metastases. Magnetic resonance imaging (MRI) showed a hilar biliary obstruction with pancreatico-biliary maljunction (Fig. 1). Endoscopic retrograde cholangiopancreatography (ERCP) was performed for biliary drainage prior to chemotherapy. Several attempts at biliary cannulation from the major papilla were unsuccessful, but the dorsal pancreatic duct was easily contrasted using access through the minor papilla (Fig. 2). The X-ray image appeared to show the dorsal pancreatic duct directly connecting with the bile duct, resembling a letter “X.” Bile juice aspirated from the upper bile duct revealed high levels of pancreatic amylase (4750 U/L), while cytology of the bile aspirated from the dorsal pancreatic duct demonstrated adenocarcinoma. Despite full contrast injection, the ventral pancreatic duct was not visualized (Fig. 3). An uncovered metallic stent was easily placed at the hilar portion of the bile duct via the dorsal pancreatic duct (Fig. 4).

According to the Komi classification [1], our case was diagnosed as a type IIIc anomaly with an incomplete pancreas divisum, but additionally it was unique regarding the position of the pancreatico-biliary communication, located at the proximal side and extremely close to the dorsal pancreatic duct. The dorsal pancreatic duct was also abnormally situated posteriorly to the common bile duct, suggesting a developmental anomaly such as a rotational anomaly during gestation. These features allowed easy placement of the metallic stent via the dorsal pancreatic duct. Not only is this case a rare variant of pancreatico-biliary maljunction, a PubMed literature survey indicates it is the first in which treatment has been done by placement of a metallic stent via the minor papilla [2–3].

Endoscopy_UCTN_Code_TTT_1AR_2AZ

Competing interests: None
Toru Matsui\textsuperscript{1}, Hiroyuki Matsubayashi\textsuperscript{1}, Satoshi Hamauchi\textsuperscript{2}, Keiko Sasaki\textsuperscript{3}, Masaki Tanaka\textsuperscript{1}, Hiroyuki Ono\textsuperscript{1}

\textsuperscript{1} Division of Endoscopy, Shizuoka Cancer Center, Suntogun, Shizuoka, Japan
\textsuperscript{2} Division of Gastrointestinal Oncology, Shizuoka Cancer Center, Suntogun, Shizuoka, Japan
\textsuperscript{3} Division of Pathology, Shizuoka Cancer Center, Suntogun, Shizuoka, Japan

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DOI http://dx.doi.org/10.1055/s-0034-1391866
Endoscopy 2015; 47: E143–E144
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

Corresponding author
Hiroyuki Matsubayashi, MD, PhD
Division of Endoscopy, Shizuoka Cancer Center
1007 Shimonagakubo
Nagaizumi, Suntogun
Shizuoka 411-8777
Japan
Fax: +81-55-989-5222
h.matsubayashi@scchr.jp