

Pancreas rotation anomaly with intestinal malrotation

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To the Editor,

The pancreas evolves from two origins, called the dorsal and ventral buds. While the posterior part of the pancreatic head and uncinete process develop from the ventral bud, the dorsal bud forms the anterior head, body and tail (1). Incomplete maturation of the pancreas during embryogenesis results in variations and anomalies. Meanwhile, the intestines are positioned by various rotations in the abdomen. If these rotations are also disrupted, pancreatic and intestinal malrotation can occur together (2).

With widespread use of imaging methods, incidental adult intestinal and pancreas malrotation are found much more than previously known. The most common congenital pancreatic ductal anatomic variant is the pancreas divisum that arises from failure of the dorsal and ventral pancreatic ducts (3,4). Another commonly seen rotation anomaly is annular pancreas in which a part of the pancreatic tissue surrounds the descending duodenum and continues with the head of the pancreas (4).

We have encountered an uncommon type of this combined rotational anomaly in the case of a 68-year-old woman admitted to our gastroenterology outpatient clinic with recurrent nausea and vague abdominal pain unresponsive to non-opioid analgesics. On intravenous contrast enhanced computed tomography, the ileal and jejunal intestines were located on the right side and the caecum and ascending colon were located on the left side of the abdomen, compatible with midgut malrotation. The jejunum occupied the upper right quadrant of the abdomen (Fig. 1A). The pancreas had an elongated appearance with a lateral replacement of the head. Absence of the uncinete process accompanied the other findings (Fig. 1B). The second part of the duodenum was located more laterally than the normal position owing to the occupation of its normal anatomic position by the pancreatic head (Fig. 1B). Magnetic resonance cholangiopancreatography (MRCP) is a superior method for delineating ductal variations. Normally, the major pancreatic duct is thinner than the common bile duct (CBD) and joins the CBD to form the ampulla of Vateri. Variations in this structure may precipitate functional disturbances, as in our case where the major pancreatic duct was elongated, mildly dilated and joined the common bile duct right next to the sphincter of Oddi (Fig. 1C).

Intestinal malrotation and pancreatic anomaly commonly induce serious clinical problems. Therefore, it is important to recognize these variations and anomalies with the help of imaging methods before clinical findings emerge.

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Fig. 1A. — Lateral settled duodenum (short arrow) and pancreatic head (asterix) are seen on an IV contrast enhanced axial computed tomography image (a). Mildly dilated major pancreatic duct (long arrow) is visualized.

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Fig. 1B. — The ileal and jejunal intestines are located on the right side (arrowhead) whereas the caecum (long arrow) and ascending colon (short arrow) are located on the left side on coronal reformat images, confirming the diagnosis of malrotation (b).



Fig. 1C. — The major pancreatic duct, which is mildly dilated (long arrow), and the common bile duct (short arrow) are combined distally at the level of the ampulla on the 3D MRCP image.