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Pre-duodenal portal vein and its rare association with a Meckel's diverticulum in a pediatric patient

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A pre-duodenal portal vein (PDPV) is a congenital anomaly that is rare in both pediatric and adult patients. PDPV results from persistence of a primitive vitelline vein and rather than passing inferiorly and behind the pancreas, the portal vein crosses in front of the duodenum and pancreas. PDPV is usually found as an incidental finding during surgeries of the gastrointestinal tract but can cause an extrinsic compression of the duodenum leading to intestinal obstruction. PDPV association with such a complication is extremely rare. In fact, in a 25-year retrospective study in a single center; PDPV was found only in five neonates. In all of them, the PDPV was asymptomatic and the duodenal obstruction was due to associated malformations, such as malrotation, duodenal atresia, duodenal web or annular pancreas. Most of the cases of PDPV reported have been described in association with other congenital anomalies including heterotaxia, polysplenia syndrome, situs inversus, cardiac defects, malrotation, biliary or duodenal atresia and annular pancreas. To our knowledge, out of the 100 pediatric and adult cases reported, an association with a Meckel's diverticulum has never been described. We hereby, report a 14-month old male with a history of heterotaxy syndrome, left atrial isomerism, severe gastroesophageal reflux disease and failure to thrive with malrotation that was noted on an upper GI series. Surgical exploration revealed affixation of the midgut without volvulus without dilatation of the duodenum. A vascular structure crossing the duodenum anteriorly was noted and identified as a PDPV in association with a Meckel's diverticulum, which was removed. The PDPV was left in place, since no signs of duodenal obstruction or inflammation were noted. Although, an incidental finding, this anomaly is of great surgical importance as it can cause unexpected surgical complications from accidental injury to the portal vein. Therefore, knowledge of this anomaly is essential for avoiding injuries during laparotomy for surgical correction of gastrointestinal anomalies such as malrotation.

Biography

Amy Issa D O is currently a Pediatric Resident at the Children's Hospital Navicent Health affiliated with Mercer University School of Medicine. She has received her BS in Biology with a minor in Great Texts of the Western Tradition while in the Honors College at Baylor University. She went on to receive a Master of Science in Medical Science from the University of North Texas Health Science Center (UNTHSC) and received her Medical degree from Texas College of Osteopathic Medicine at UNTHSC.

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