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Multimodal imaging in the diagnosis and evaluation of intestinal malrotations: a case report

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Midgut malrotation is a congenital anomaly referring to either lack of or incomplete rotation of the fetal intestines around the axis of the superior mesenteric artery during fetal development. Most patients present with bilious vomiting in the first month of life because of duodenal obstruction or a volvulus. It is rare for this condition to present in adulthood. The true incidence in adults is difficult to estimate because most patients are asymptomatic. Patients who are symptomatic often present either acutely with bowel obstruction and intestinal ischemia with a midgut or cecal volvulus or chronically with vague abdominal pain. Chronic symptoms can often make the diagnosis difficult. A solid understanding of embryology and anatomy is required to promptly diagnose and to appropriately treat intestinal malrotation. The diagnosis is usually performed with several modalities such as barium studies, computed tomography (CT) scans, angiography, and often emergent laparotomy. In the current study, we present a case of malrotation in an adult presenting with chronic abdominal pain.

A 38-year-old woman presented with cramping abdominal pain localized in the right iliac fossa. She reported a normal physiological anamnesis and had no history of relevant organ pathologies. Routine laboratory analysis revealed a persistent elevation of inflammatory markers and a modest syderopenic anemia. Inflammatory bowel disease and/or appendicitis were suspected. Upper gastrointestinal Rx contrast studies showed malrotation of the small bowel without evidence of duodenum crossing the lumbar spine, lack of duodenojejunal flexure, and the right colon was localized in the left abdominal side. The left colon showed a normal localization. The last loop of the small intestine converged in the ileocecal valve at the right colonic side. All small bowel was sequestered on the right abdominal side. Abdominal CT with contrast confirmed the diagnosis of intestinal malrotation. Because often intestinal malrotation occurs in association with other gastrointestinal abnormalities, such as jejunal and duodenal stenosis or atresia and annular pancreas, the patient underwent Wirsung magnetic resonance imaging which did not reveal the presence of annular pancreas. The Wirsung's duct was anterior of the intrapancreatic segment of the coledoc duct leading to a mild functional substenosis ab-estrinseco.

A multimodal imaging strategy proved to be useful for the diagnosis of intestinal malrotation in an adult afflicted by chronic vague abdominal pain.

Keywords: Intestinal malrotation, gut, multimodal imaging.

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