

CASE REPORT

LEFT - SIDED APPENDICITIS

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BACKGROUND: While appendicitis is the most common abdominal disease requiring surgical intervention seen in the emergency room setting, intestinal malrotation is relatively uncommon. When patients with asymptomatic undiagnosed gastrointestinal malrotation clinically present with abdominal pain, accurate diagnosis and definitive therapy may be delayed, possibly increasing the risk of morbidity and mortality. We present a case where imaging was crucial diagnostically and helpful for pre-surgical planning in a patient presenting with an acute abdomen superimposed on congenital gastrointestinal malrotation.

CASE PRESENTATION: A 14 year-old male patient presented with a 2 day history of abdominal pain (around the umbilical region). On examination, the patient was haemodynamically stable with a low grade temperature of 37.5 degrees. He was tender in the left iliac fossa with guarding but no rigidity. His inflammatory markers were mildly elevated with a white cell count of 18,500 cells/cumm. Laboratory investigations were otherwise unremarkable.

With this clinical history and laboratory investigations the patient was sent for further radiological work up. Chest X-ray was normal with no evidence of perforation.

Plain film of abdomen demonstrated a paucity of bowel gas on the right side of the abdomen but was otherwise unremarkable with no evidence of obstruction or perforation (Fig- 1).

USG abdomen showed classical features of left sided appendicitis - dilated, aperistaltic, tubular structure with appendicolith (Fig- 2) and altered SMA/SMV axis was noted suggesting malrotation of gut.

CT abdomen and pelvis post oral and intravenous contrast was performed to confirm the diagnosis and exclude other complications. CT demonstrated imaging findings consistent with congenital malrotation of the colon with the large bowel occupying the left side of the abdomen. The caecum was positioned in the left flank. Other imaging features of malrotation included reversal of the SMV/SMA relationship (Fig- 3) and abnormal location of the duodenal -jejunal flexure to the right of the vertebral column.

The appendix was dilated with associated inflammatory changes in the mesentery and appendicolith. (Fig-4, 5) Imaging features were consistent with an acute appendicitis.

There was no evidence of diverticulitis, perforation or abscess formation.

The patient was admitted under the surgical services and proceeded to appendicectomy which confirmed the diagnosis. He made a full and uncomplicated clinical recovery.

DISCUSSION: Left sided appendicitis can occur in the context of two congenital bowel abnormalities, situs inversus and malrotation. The imaging findings locally around the appendix are similar to right sided appendicitis, with dilation of the appendix (>6mm) and inflammatory changes in the mesentery with or without the presence of an appendicolith, local abscess or perforation.

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Malrotation of the bowel is caused by arrest of gut rotation and fixation during embryological development when the developing bowel returns to the abdominal cavity. There is a spectrum of abnormalities including non-rotation (true malrotation), incomplete rotation and reversed rotation.

Most patients (75%) present during the first year of life with symptoms of obstruction or an acute abdomen. The presence of Ladd's bands and a short small bowel mesentery put these patients at high risk of volvulus which may occur at any age, but tends to occur earlier in life. The Ladd's bands may also cause obstruction.

Diagnostic clues of malrotation on plain film of abdomen include abnormal bowel gas distribution with small bowel occupying the right side of the abdomen and colon on the left. The diagnosis can be suggested in children by ultrasound demonstrating inversion of the normal SMV/SMA relationship. However this finding is not entirely sensitive or specific. The diagnosis can be confidently made by fluoroscopic barium studies demonstrating small bowel on the right and colon on the left of the abdomen. The duodenal -jejunal flexure lies low and immediately over or to the right of the vertebral column (normal position to the left)

There are a number of associated anomalies, including pancreatic aplasia or hypoplasia of the uncinate process of the pancreas most commonly (Fig. 5). There is an increased incidence of gut abnormalities including omphalocele, gastroschisis, duodenal stenosis and Hirschsprung's disease. Asplenia/polysplenia syndromes and inferior vena cava abnormalities are also seen more commonly

Final Diagnosis: Malrotation of colon with acute left sided appendicitis.

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Fig. 1: X-ray abdomen showing paucity of bowel gas on the right side.



Fig. 2: USG Showing dilated tubular, appendix with appendicolith in left iliac fossa.

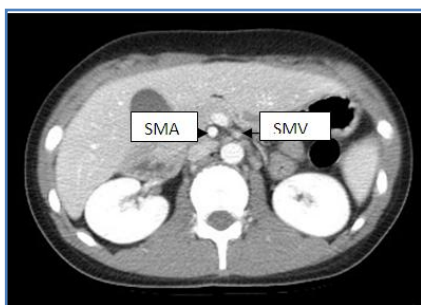


Fig. 3: CECT showing altered SMA/SMV axis



Fig. 4 & 5: CECT showing Dilated appendix with appendicolith

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