Case report

Acute abdomen - A Twist in the abdomen

Geetha M[1], Seshadri LN[1], Kaleem Ulla[1], Dr Kiran B[1]

Author's Affiliation:
1- Aga Khan University Hospital, Karachi, Pakistan..

Correspondence:
Prem Chand, Email: Prem.chand@aku.edu

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Introduction

Acute Abdominal pain is a common complaint in children attending the emergency department. The most common encountered cause of acute abdominal pain and leading cause of surgical emergency is Acute appendicitis. (1) There are many gastrointestinal and genitourinary pathologies that mimic acute abdomen in children. The absence of the typical right lower abdominal pain is not seen in acute appendicitis in children. (2)

We report a 12-year adolescent female child presenting with left sided lower abdominal pain.

Case report

A 12-year girl was brought to emergency department in the early morning hours with abdominal pain and vomiting for 3 days. She had no fever or urinary symptoms. There was no history of hematemesis or malena. There were no previous admissions or any similar complaints in the past. There was no history of surgeries in the past.

On examination, she was thin built, undernourished, sick looking, dehydrated with sunken eyes, tachycardiac, left iliac fossa tenderness with guarding. Clinically, the child had features of Acute Abdomen.

On evaluation, Ultrasonography showed aperistaltic blind ending non compressible tubular dilated structure in the left lumbar fossa measuring 7mm with multiple enlarged mesenteric lymph nodes with probe tenderness. There was a disruption of Superior mesenteric artery (SMA)- Superior mesenteric vein (SMV) relation and SMV was in the left of SMA with no swirling of vessels. Duodenum was not visualized. These features are all suggestive of malrotation. Liver, spleen, kidneys were normal and in normal situs. Uterus and adnexa were normal. The findings were suggestive of acute appendicitis with malrotation, which was further confirmed by contrast enhanced computed tomography. The reversal of SMA and SMV relationship, right sided small bowel loops, left sided ileocecal junction. Duodenojejunal flexure was noted in right side of midline. In addition, thick walled 9mm appendix with minimal peri appendiceal fat stranding was seen in left lumbar region. (Fig 1)

Blood investigations revealed high total leucocyte count wit neutrophils predominance. C reactive protein was high - 252mg/dl. Serum electrolytes were normal.

The diagnosis of Left sided Appendicitis was made. Pediatric surgical opinion was sought. After stabilizing the patient, basic investigations and obtaining consent, Appendectomy with Ladd's procedure was done. (Fig 2)

Post operative period was uneventful. She recovered without any complications and discharged after 5 days. Child remained on regular follow up and back to school without any issues.

Discussion

Acute appendicitis with intestinal malrotation is a rare incidence. Typical symptoms of acute appendicitis include vague epigastric abdominal pain radiating to typical right lower quadrant with fever accompanied by nausea and vomiting. On examination, patient usually has abdominal guarding and rigidity, right iliac fossa tenderness, rebound tenderness. But not more than 50% of children present with these classic features. (2) So, the chances of delayed diagnosis and wrong diagnosis are quite common. (2)

The incidence of left quadrant pain is even rare in acute appendicitis and rate of misdiagnosis is as high as 24%. The reason for left quadrant pain in appendicitis may be due to abnormally located appendix in left side or a long appendix extending to left side. (3) The left sided appendix may be because of two congenital anomalies - intestinal malrotation and situs inversus totalis. (4)

Some differential diagnosis of children presenting with left lower quadrant pain are colitis, inflammatory bowel disease, diverticulitis, intestinal obstruction, perforation, nephrolithiasis, pyelonephritis, atypical right-sided appendicitis, left-sided appendicitis, epididymitis or testicular torsion in boys. (5)

The basic embryological abnormality of Intestinal malrotation is due to nonrotation or incomplete rotation of the primitive intestinal loop around the SMA axis during the first 10 weeks of fetal life. (6) Its occurrence is one in every 500 live births, approximately 0.2% and it is a rare anomaly. (6) Almost 93% cases with intestinal malrotation symptomatic present with bilious vomiting within the first month of life. It is usually asymptomatic and uncommon in adults and rarely they may present with chronic abdominal pain in adults. (7)

Occurrence of acute appendicitis with intestinal malrotation is rare. The most common cause of the left-sided appendicitis is due to situs inversus totalis(more than two third) rather than intestinal malrotation. (7) It is very challenging to diagnose left-sided acute appendicitis clinically and radiologically. It can be differentiated from situs inversus totalis by clinically and radiologically. (7)

Ladd's procedure is a surgical procedure done for intestinal malrotation with volvulus or left sided acute appendicitis. It can be done open or laparoscopic approach. Laparoscopic appendectomy is the gold standard and most preferred treatment for left-sided appendicitis. (8)

Conclusions

Acute appendicitis with intestinal malrotation and left sided acute appendicitis is a rare incidence. Prompt diagnosis with timely intervention is necessary for increased survival and reducing the complications like perforation/abscess. Increased awareness is necessary for early detection and management.

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