Transverse colon volvulus due to Ladd's band

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Section: Abdominal imaging
Technique: Digital radiography

Case Type: Clinical Cases
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Patient: 29 years, male

Clinical History:

3 days history of dull abdominal pain abdominal distension and vomiting.

Imaging Findings:

The patient was admitted with 3 days history of dull abdominal pain, abdominal distension and vomiting. On examination he was dehydrated, abdomen was distended with no signs of peritonism. Blood showed raised CRP of 38.

Chest radiograph showed bilateral elevation of diaphragm and distended loops of large bowel (figure 1). Abdominal radiograph (figure 2) showed dilated small and large bowel loops, water-soluble enema (figure 3,4) showed obstruction at distal transverse colon. Findings at laparotomy were distended small bowel, caecum and ascending colon, Meckel's diverticulum (wide base) near terminal ileum, transverse colon hepatic flexure volvulus and non-rotation of duodenum with ladds band.

Right hemicolon and part of ileum with Meckel's diverticulum were resected with a primary side to side anastomosis ileum-transverse colon performed.

Discussion:

Intestinal rotation and fixation occur late in the first trimester of fetal life. Duodenal bands arise from the posterior abdominal peritoneum and extend from the liver to the colon, passing anterior to the duodenum. Usually the distal descending or the third and fourth parts of the duodenum are obstructed. These bands are usually referred to as Ladd's bands (a peritoneal band which stretches from the caecum to the subhepatic region). Growth and rotation of the small bowel involves a complex series of steps that may be interfered with at any point. Volvulus around Ladd's bands is a cause of intestinal obstruction in cases of small intestinal malrotation and arrested caecal descent.

Intestinal malrotation is rare in older children and adults. In infancy, anomalies of intestinal rotation may cause intestinal obstruction. The first sign of obstruction is biliary vomiting.

There are three types of midgut malrotation.

Type I malrotation occurs before 6 weeks of gestational age. The duodenum and the large bowel stop rotating after their first 90 degrees counter-clockwise rotation. These are not clinically significant because good fixation prevents volvulus.

Type II malrotation occurs between six and ten weeks of gestational age. It primarily affects the duodenum because this is the only portion of the bowel rotating at this time.

Type III malrotation occurs after ten weeks of gestational age. The duodenum has only 90 degrees of rotation left to complete and the large bowel 180 degrees.

Type III A, there is either a complete obstruction from Ladd's bands or volvulus. This is the most dangerous type of
malrotation. Volvulus, gangrene and death are common.
Type III B is incomplete fixation of the hepatic flexure.
Type III C is incomplete fixation of the cecum and mesoceleum.
Type III D is an internal hernia at the ligament of Treitz.

**Differential Diagnosis List:** Transverse colon volvulus due to Ladd's band

**Final Diagnosis:** Transverse colon volvulus due to Ladd's band

**References:**

Description: Chest Xray showing bilateral elevation of diaphragm and distended loops of large bowel.
Origin:
Figure 2

Description: Abdominal Xray showing dilated loops of small and large bowel. Origin:
Description: Water-soluble enema showing obstruction at distal transverse colon. Origin:
**Description**: Water-soluble enema showing obstruction at distal transverse colon. **Origin**: 