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Malrotation with Volvulus in a Full Term Baby - A Case Report

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ABSTRACT

9-day old full term well looking baby was presented with bilious vomiting. Prompt examination and relevant investigations confirmed diagnosis. Early surgical intervention prevented catastrophic complication like gangrene of the small intestine.

Key words: malrotation, volvulus of midgut.

INTRODUCTION

Malrotation and volulus in a newborn a life-threatening condition requires early diagnosis and treatment. Sudden onset of bilious vomiting in an infant who has passed some normal stools may indicate a volvulus of the malrotated bowel as the cause of intestinal obstruction. This is a surgical emergency because intestinal viability is at stake.1.

CASE REPORT

9-day old boy came to Emergency department with complains of vomiting for one day. Vomiting was initially yellowish in color and subsequently greenish in color. He was feeding but smaller quantities. He was passing scanty stools daily but for one day no stools.

He was delivered full-term by NSVD. There is no family history of any congenital anomalies.

On examination:

Baby pinkish with stable vital signs

T 37 hr 120 RR 40 SPO2 95 in room air CRT <2 seconds BP 70/50 Weight 2.84kg

Systemic examination

Abdomen upper abdomen distended, no tenderness, no guarding or rigidity, no mass palpable, hernia orifices normal, genitalia normal with both testes descended to scrotum, bowel sounds normal.

Other systemic examination was normal.

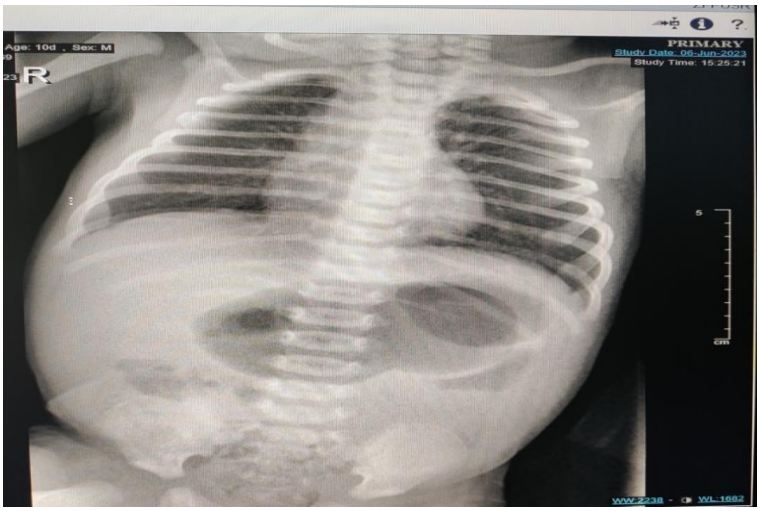
Plain X ray abdomen showed gaseous distention of bowel in upper abdomen with scanty gas shadows in lower abdomen

- Barium meal study showed
- Scout images was unremarkable.
- Patient was fed through NGT with about 55ml of contrast
- Stomach expanded well and of moderate capacity
- Immediate filling of the duodenum was observed up to the proximal portion of the 3rd part of the duodenum which showed some stenosis with very slow little pulsatile passage of contrast through this site.
- Contrast was retained in the proximal part of the duodenum.
- Only small portion of the proximal jejunum was opacified for clinical correlation

A diagnosis of malrotation was made and Baby was operated on the same day.

Investigations:

X ray chest and abdomen showing dilated bowel in upper abdomen and scanty gas shadows in lower abdomen



Barium meal study showing opacification of only small portion of proximal jejunum.

Diagnosis: malrotation with volvulus

Treatment and follow up:

Exploratory laparotomy revealed malrotation with Ladds bands obstructing duodenum with volvulus of midgut with dusky bowel and very short mesentery and abnormal mesenteric vessels.

Dense Ladds bands obstructing duodenum were released and volvulus of the midgut was untwisted and color of intestine improved with warm saline and untwisting. Caecum was high, all adhesions were were released, appendicectomy done as large bowel was placed was placed in left paracolic area and small bowel on right side. Peritoneum and abdomen were closed in layers.

Post operatively baby improved, wound healed well, started on OGT feeding on day 5 and oral feeding on day 7 and discharged on day 8 with OPD follow up.

DISCUSSION

Malrotation is incomplete rotation of the intestine during fetal development and involves the intestinal nonrotation or incomplete rotation around the superior mesenteric artery. The most common type of malrotation involves failure of the cecum

to move into the right lower quadrant. The usual location of the cecum is in the subhepatic area. Failure of the cecum to rotate properly is associated with failure to form the normal broad-based adherence to the posterior abdominal wall. The mesentery, including the superior mesenteric artery, is tethered by a narrow stalk, which can twist around itself and produce a midgut volvulus. Bands of tissue (Ladd bands) can extend from the cecum to the right upper quadrant, crossing,and possibly obstructing, the duodenum.2. The incidence of malrotation is relatively high, with the prevalence among infants aged under 1 year being 3.9 per 10,000 live births.3. Most newborns with midgut volvulus present within 7 days after birth, and up to 80% of patients with midgut volvulus present within the first month of life, Sudden onset of bilious vomiting strongly suggests the diagnosis of midgut volvulus.3. Bloody stools occur in 10-15% of patients with volvulus and portend a poorer prognosis as they are indicative of bowel ischemia.3.

The characteristic signs on abdominal radiography are dilatation from the stomach to the duodenum and displacement of intestinal gas to one side.4. However, as the signs depend on torsion severity and the location of the blockage at the time of imaging, and some cases may even appear normal, diagnosis based on abdominal radiography alone is difficult.4.

Upper GI study to be performed on any patient with radiographic evidence of high-grade duodenal obstruction. Although an upper GI study is the reference standard for the diagnosis of malrotation and midgut volvulus, ultrasound can be useful for excluding the diagnosis of malrotation that may cause volvulus.4.

The only treatment for midgut volvulus is surgery. As its severity ranges widely, from intestinal edema to shock, early suspicion of midgut volvulus with performance of appropriate investigations is important. If not treated expeditiously, volvulus can progress to ischemic gut necrosis, sepsis, and even death.5.

CONCLUSION

Early diagnosis and treatment remain the key to improving survival, including prompt workup of patients presenting with even the slightest hint of bilious (green) emesis, despite otherwise normal physical findings. Bilious emesis in the full term neonate should be considered midgut volvulus until proven otherwise. Urgent laparotomy should be strongly considered in the term infant with bilious emesis.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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