

CASE REPORT

A Rare Case of Congenital Bowel Atresia: An Ultrasonographic Sign of Unsure Prognosis

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ABSTRACT

Intestinal atresia refers to complete or partial obstruction of the intestinal lumen. Prevalence is 1/4000 to 5000 births without gender variance. In partial obstruction, the signs, such as vomiting, abdominal distension, and constipation delayed after birth or delayed in other manner. Intestinal atresia is less severe as compared to stenosis which may cause considerable difficulties. Obstructive syndrome must be ruled out in infant congenital intestinal stenosis. We report on a newborn female infant with clinical symptoms of persistent vomiting, constipation, abdominal distension, which was managed surgically. Surgical finding was a congenital stricture of the ileum. The patient died from complications. Obstructive syndrome in infant intestinal atresia is a rare entity, which is usually unsuspected, but it should be ruled out as a study protocol for intestinal obstruction. On ultrasound, gastrointestinal anomalies are usually detected in 2nd trimester (22–24 weeks). So it is very difficult to convince parent about late diagnosis of anomaly and can lead to legal headache to radiologist.

Keywords: Intestinal atresia, Intestinal obstruction, Intestinal stenosis.

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INTRODUCTION

The term “atresia” is developed from “a” (no or without) and “tresis” (hole or orifice) refers to obstruction with complete occlusion of lumen. Congenital intestinal atresia accounts for 1 in 4000 to 5000 live births.¹ Vascular compromise in early gestation may be responsible for congenital bowel atresia in jejunum, ileum, and colon. Acquired atresia in preterm infant is due to cicatricial hemorrhage of intestine by ischemia. Colonic atresia is an uncommon cause of neonatal obstruction, accounting for 1.5 to 15% of all gastrointestinal (GI) atresia.²

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Fetal bowel obstruction is characterized by fluid-filled bowel loops which measures at least 15 mm in length or 7 mm in diameter.³ Ultrasonographic image of dilated fetal bowel is sign of intestinal mechanical or functional obstruction. Usually, obstruction may not be seen in first and mid-second trimester (12–20 weeks) which affects postnatal prognosis and legal implications.⁴

CASE REPORT

A 23-year-old healthy woman of second gravid was come for antenatal care (ANC) USG at 26th week of pregnancy. Ultrasound (USG) showed single fetus with normal weight with lower GI tract dilation. At 36th week, physical examination showed no abdominal distention, masses, or other malformation. Ultrasound showed increase in dilated bowel diameter as compared to 26th week's USG report (Figs 1 and 2). Fetus was delivered at private hospital and was presented with consistent vomiting, so was referred to pediatric surgeon. He performed exploratory laprotomy on the 2nd day of life, and his findings were proximal dilated ileum loop followed by atresic “apple peel” portion. But in spite of his genuine efforts, the poor infant died on the 15th day.

DISCUSSION

Bowel atresia is a common surgical cause of neonatal surgical obstruction. Jejunum and ileum are commonly affected intestinal segments, with incidences ranging from 1 in 1,500 to 12,000 births. Duodenal atresia occurs



Fig. 1: Ultrasonographic image of dilated fetal bowel loops

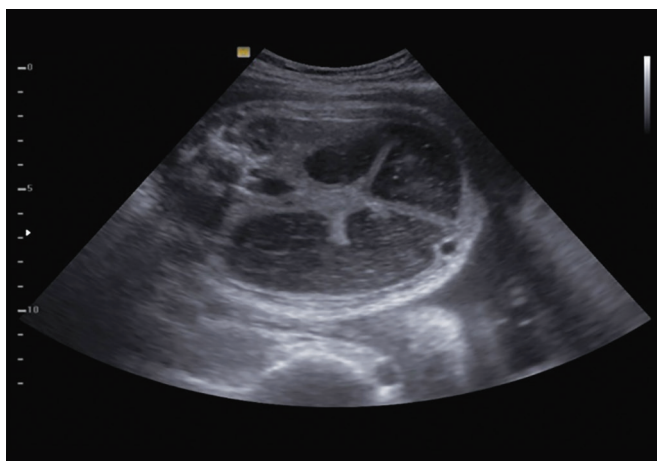


Fig. 2: Ultrasonographic image of dilated fetal bowel loops

in 1 in 10,000 to 40,000, followed by the colon, with an incidence of approximately 1 in 40,000 live births.^{5,6} Jejunal and ileal atresia (JIA) has been classified into four types based upon their anatomic characteristics.⁵ Type IIIB is also known as “apple peel.” The maternal use of vasoconstrictive medications and drugs, inherited thrombophilias, and fetal malformations, which lead to vascular blood disruption to intestine, are causes of atresia.⁷

A prenatal ultrasound finding of intestinal obstruction consists of dilated bowel loops on ultrasound, and this finding was reported at 26th week in the presented case. The anomaly scan report at 20th week was normal. The ability to diagnose GI atresia prenatally is influenced by gestational age, the site of obstruction, and presence of associated anomalies. Before 24 weeks of gestation, bowel loops are difficult to visualize because there is no efficient gastric peristalsis. After 25 weeks the bowel becomes ecogenic, similar to ecogenesity to adjacent liver.⁸ The bowel dilatation only becomes evident in 3rd trimester. Ultrasonographic destination between small and large bowel is difficult, and there are some signs that may lead to a more proximal or distal obstruction.⁸ The “double bubble” sign which includes a dilated fluid-filled stomach adjacent to dilated proximal intestinal segments indicates a contiguous obstruction, such as duodenal atresia.⁹

The presence of enlarged stomach and polyhydramnios is consistent with jejunal rather than ileal atresia. Finally, when the colon is obstructed, there is no bowel dilatation generally, because amniotic fluid is resorbed in the upper segment of small bowel and colonic loops. The prenatal management of suspected small bowel distal atresia includes the fetal evaluation for associated disorders, and in duodenal atresia and colonic obstructive disorders, aneuploidy and extra intestinal malformations are rare. In our case, amniotic index was normal. The presence of polyhydramnios is consistent

with jejunal rather than ileal atresia. Follow-up ultrasound examination was performed. Bowel appearance and associated complications, like perforation ascites, meconium peritonitis, were absent. The postnatal investigation showed a distal small bowel obstruction due to “apple peel” atresia.¹⁰

CONCLUSION

This case highlights medicolegal issue. As discussed above, anomaly scan was normal at 20th week, so the patient was happy. Present anomaly was diagnosed at 26th week, and the mother was shocked and depressed. It was very difficult to convince mother that USG can diagnose GI anomaly only after 24 weeks. According to MPT ACT 1971, MTP can be performed up to 20 weeks only. Now government is thinking about increasing the MTP duration up to 24 weeks. Despite low rates of sensitivity and specificity, ultrasound plays an important role in management and diagnosis in fetal bowel dilatation. It offers an opportunity for parental counseling and choosing patients who need transfer to a specialized center which is of utmost importance as it allows prompt treatment and reduces the risk complications.

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