

Jejunal Atresia

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Case Summary

An infant born at 35 weeks' gestational age was diagnosed prenatally with small bowel obstruction via ultrasonography and fetal magnetic resonance imaging (MRI). Given the bowel obstruction and significant output of bilious fluid, a nasogastric tube was placed shortly after birth. At day 2 of life, the infant underwent a fluoroscopic upper gastrointestinal (UGI) series with small-bowel follow through (SBFT). A genetic workup and a complete abdominal ultrasound were also performed to evaluate for other anomalies prior to surgical repair.

Imaging Findings

Fetal MRI performed at 28 weeks' gestational age demonstrated multiple fluid-filled and dilated loops of bowel in the left upper abdomen with some extension into the right abdomen (Figure 1). Residual distal loops of bowel and colon were

decompressed. Abdominal radiography performed shortly after birth revealed a gas-filled stomach and dilated duodenum and proximal jejunum with a suction catheter present (Figure 2).

Subsequent UGI with SBFT demonstrated a distended duodenum and proximal jejunum that abruptly ended in the right abdomen, with a complete paucity of bowel gas distally (Figure 3). Delayed (100-min) abdominal radiography demonstrated the lack of contrast progression (Figure 4). Abdominal ultrasound revealed a dilated, fluid-filled duodenum and dilated loops of proximal jejunum, with the remaining abdomen appearing unremarkable (Figures 5, 6).

Subsequent exploratory laparotomy revealed a proximal jejunal atresia with two additional distal atretic segments, plus an "apple peel" deformity. The first atresia was noted to be located 12 cm distal to the ligament of Treitz.

Diagnosis

Jejunal atresia

Discussion

Atresia, considered one of the most common causes of congenital bowel obstruction, is characterized as a congenital defect that results in complete obstruction of the lumen.¹ Jejunal and/or ileal atresia is present in 1 in 3,000-5,000 births and constitutes approximately 39% of all intestinal atresias.² Jejunoileal atresia results from an ischemic insult during pregnancy; the injury can be secondary to intussusception, perforation, volvulus, intestinal strangulation via hernia, or thromboembolism. Additional factors such as maternal smoking and cocaine use have also been associated with intestinal atresia.³

Newborns typically present with feeding difficulties, bilious vomiting, distended abdomen, and absence of bowel movements.⁴

Although ultrasound is the imaging modality of choice for screening and preliminary identification of fetal abnormalities, MRI evaluation of the fetal gastrointestinal tract is increasingly utilized.² Postnatally, fluoroscopic contrast studies can be helpful in assessing

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Figure 1. Coronal T2 HASTE image from the fetal MRI shows multiple fluid-filled and dilated loops of bowel predominantly in the left hemi-abdomen.

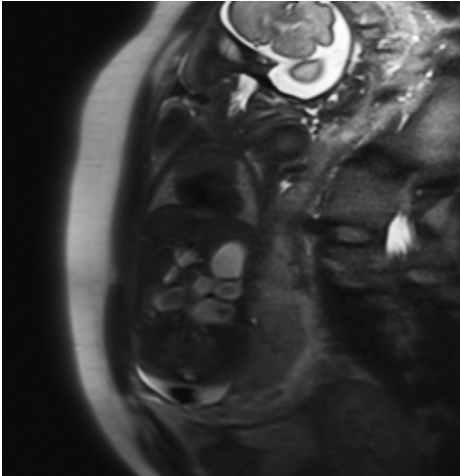


Figure 2. Anteroposterior supine abdominal radiograph reveals a prominently dilated loop of bowel within the central abdomen, likely in the jejunum, with the nasogastric tube terminating in the stomach.



Figure 3. Abdominal radiograph performed at the end of the UGI series demonstrates moderately distended, contrast-filled proximal jejunal loops.



Figure 4. Abdominal radiography 100-mins following upper GI demonstrates contrast remaining within a dilated jejunal loop of bowel. There is a lack of contrast progression into more distal bowel loops, consistent with jejunal atresia.



Figure 5. Transverse image obtained during the abdominal ultrasound shows a dilated duodenum

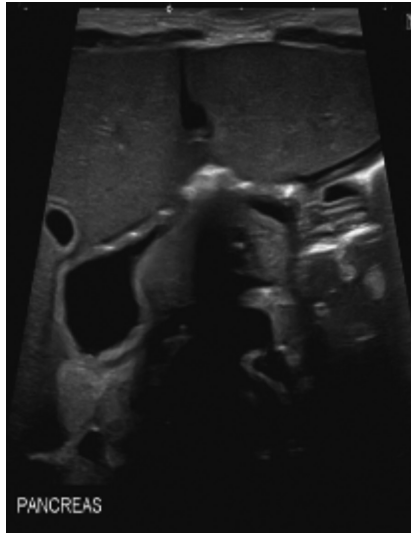
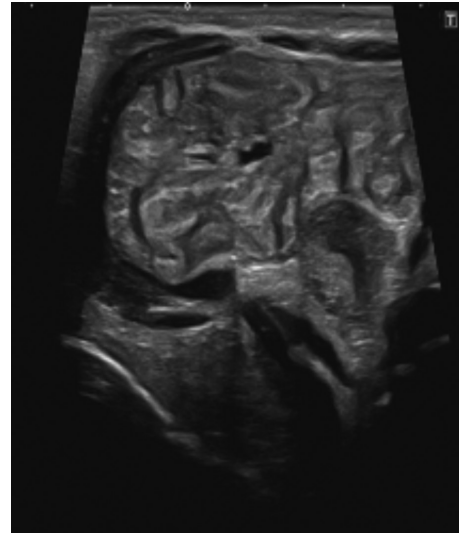


Figure 6. Transverse abdominal ultrasound image shows the remaining small bowel to be completely decompressed, compatible with small-bowel atresia.



the location and type of obstruction prior to surgery.

Conclusion

Atresia is a common form of bowel obstruction that appears as an abrupt, rounded end to a lumen. Early diagnosis and prompt surgical

intervention is key to avoiding bowel ischemia and restoring continuation of bowel.

References

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