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Case Report

Multiple Jejunal Webs: A Rare Case of Pediatric Intestinal Atresia

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Abstract

The term intestinal web refers to partial or complete obstructions of the intestine by a mucosal membrane Intestinal web are a congenital anomaly of the gastrointestinal tract. The term intestinal web refers to partial or complete obstruction of the intestine by a mucosal membrane. Affected infants often present with bilious emesis and abdominal distention within the first few days of life depending on the degree of obstruction. Abdominal radiography and ultrasonography aid in diagnosis. Jejunal webs are a rare finding associated with intestinal atresia, with a prior cohort study suggesting they represent only 8% of congenital intestinal webs. The disease process is multifactorial, and it is believed that cystic fibrosis, intestinal hyperplasia, and exposure to vasoconstricting substances in utero can increase the risk of developing intestinal webs. A recent case report has also suggested a genetic component to the disease process. Typically, treatment includes excision of the web followed by jejunojejunostomy. Repair can be performed either laparoscopically or open; however, the minimally invasive laparoscopic approach may come at the expense of missing additional intestinal defects. We present a rare case of two jejunal webs in a neonate with duodenal atresia.

Keywords: Polyhydramnios; Jejunostomy; Atresia

Case Presentation

The patient was a premature male, born at 36 weeks gestational age to a G5P5A0 40-year-old otherwise healthy mother *via* vaginal delivery. The birth weight was 2180 gm. Prenatal ultrasound showed polyhydramnios. The neonatal X-ray showed a double-bubble sign (Figure 1). A diagnosis of duodenal atresia was suspected. He was admitted to NICU and was placed on TPN for nutritional support. After 2 weeks, he reached 2.46 kg in weight, at which time he was taken to the operating room for an exploratory laparotomy and repair of duodenal atresia.

At the time of the operation, the bowel was eviscerated after entering the abdomen and ran from the cecum to the ligament of Treitz. The duodenum was disconnected from the jejunum right at the junction of the fourth portion of duodenum and the first loop of Jejunum with an approximately 2 cm segment containing green meconium in the jejunal side. First, a jejunostomy was made over the proximal end of the jejunum at the point of disconnect from D4. A web was noted in this area which was excised. A small feeding tube was passed through the jejunum distally and saline was flushed distally to check the patency of distal bowel. This identified another point of obstruction in the jejunum approximately 2 cm distal to the original jejunostomy (Figure 2) where we found the second jejunal web. This web was also excised. The feeding tube was passed through the jejunum distally again and no other atretic segments were discovered. First, we created a side to side, duodenojejunostomy at the original point of obstruction. Then a Heineke-Mikulicz stricturoplasty was performed at the site of the second jejunostomy over the second jejunal web location.

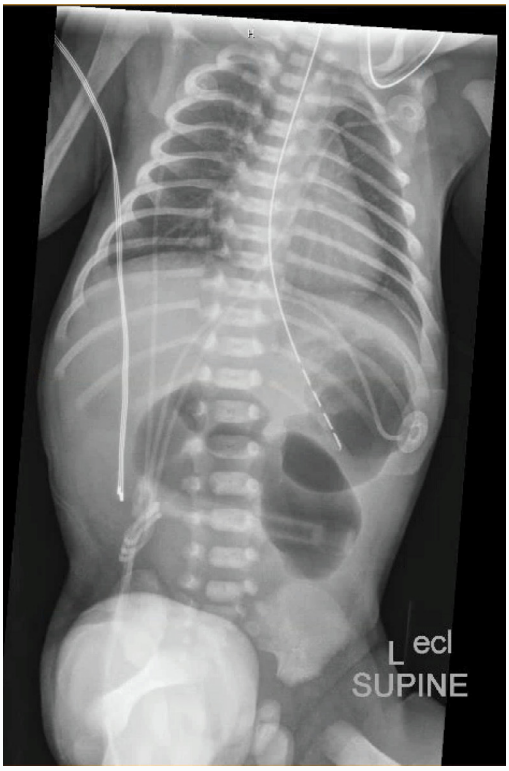

Figure 1: AP Torso babygram with double-bubble sign.

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The patient recovered well post-operatively in the NICU without any complications. He was able to tolerate oral feedings, demonstrated continued bowel function, and was discharged three weeks post-operatively.

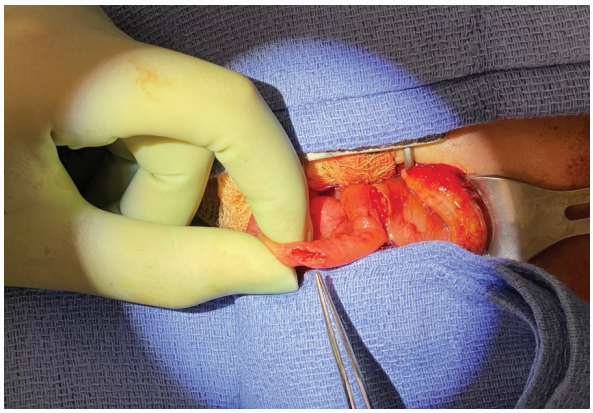

Figure 2: Atretic segment of jejunum with jejunal web.

Discussion

Intestinal atresia is a common cause of neonatal small bowel obstruction along with anorectal malformations and Hirschsprung disease [1-4]. Type I atresia with full mucosal webs tend to present very early with abdominal distension and lack of meconium passage, prompting swift work up and treatment along with temporizing parenteral nutritional support. In contrast, partial or fenestrated webs result in partial obstruction and delayed presentations that risk intestinal necrosis, severe malnutrition, and post-operative complications [5,6]. The most common type of atresia is duodenal followed by jejunal and then ileal.

We report an uncommon clinical finding of type I intestinal atresia at the distal duodenum and proximal jejunum that was associated with two jejunal webs. Single duodenal webs are frequently documented in literature [7] while reports of double webs are scant. There was one report of jejunal atresia associated with Windsock deformity [8] that also encountered two jejunal webs. The double webbing encountered in this case could therefore in addition to the duodenal Atresia be considered a type IV atresia that involves multiple sections of bowel. This attests to the critical step of ascertaining luminal patency of the distal bowel in discovery of the unexpected second web. Specific diagnostic imaging is generally limited in these patients, thus high suspicion for multiple gastrointestinal webs as a cause of intestinal obstruction is important in identifying a potentially missed pathology. Thorough inspection intra-operatively and early diagnosis both contributed to the patient's good outcome.

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