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Case Report

Duodenal Web at Bizarre Location: A report of two cases

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Abstract

In newborn child, one of the most common sites for intestinal obstruction is duodenum. Duodenal atresia and web are the primary cause of intrinsic duodenal obstruction. Duodenal webs are rare, ranging from 1 in 10,000 to 1 in 40,000 live births as per reported incidence. Duodenal web or diaphragm obstruct the lumen in complete or incomplete manner and the age of diagnosis may also vary for this. Location of webs other than the second part of duodenum is rare with only a few cases reported in literature. We are reporting two cases of different age where we found duodenal web at duodenojejunal junction. 'Case 01' is a 14months male child presented with frequent bilious and non-bilious vomiting in irregular pattern. 'Case 02' is a 5days preterm low birth weight female neonate with bilious vomiting and failure to pass meconium. Both cases were diagnosed as intestinal obstruction and the diagnosis was confirmed after laparotomy and operated accordingly.

Key words: Duodenal web, Duodenal Diaphragm, Duodenojejunal junction, unusual location

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Introduction

Intestinal obstruction in newborn child most commonly occur at duodenum. Intrinsic duodenal obstruction (DO) may be caused by atresia, stenosis, diaphragm or web, a perforated diaphragm or a 'wind sock' web [1]. Obstruction due to duodenal web is rare occurring 1 in 10,000 to 1 in 40,000 live births [2]. Duodenal web is commonly found in second part of duodenum and other locations are infrequent [3]. Diagnosis mostly done in neonatal period and perforated web may indulge in diagnostic dilemma beyond infancy [4]. We have found two patients of different age with duodenal web at duodenojejunal (DJ) junction beyond the site of "embryological traffic jam".

Case 1: A 14 months boy presented to us with bilious vomiting for the last few days. He had episodes of non-bilious vomiting minutes after breast feeding since birth. Initially the vomitus contained curd like materials but later became offensive in smell,

contained food materials and bile stained. The episodes lasted for 3 to 4 days and were relived with medicines and oral fluids, only to recur in 1 to 2 weeks as same pattern in last 14 months. He was admitted at one and half month of age with vomiting, cough and cold at hospital and was treated accordingly. The child was solely breastfed up to 6 months. Then khichuri and noodles were added to his diet but poorly tolerated by the child. The child was delivered at full term by normal vaginal delivery at home. On admission the child weighted 7.8kg which was below 5th percentile according to weight for age. On examination the child was stable with mild dehydration and epigastric distention. All the vitals were within normal limit and no other abnormality was found. Investigations showed hemoglobin 10.9gm/dl, Total leucocyte count (TLC) 7660/mm³. Abdominal X-ray showed dilated stomach and Ultrasonography suggested distended fluid filled stomach. An upper gastrointestinal contrast study demonstrated distended stomach and markedly dilated duodenum up to duodenojejunal (DJ) junction with normal distal bowel pattern suggestive of incomplete intestinal obstruction. Obstruction due to Congenital malrotation or web was suspected with high index of suspicion for windsock anomaly. The child received replacement of fluid and electrolytes. The abdomen was explored 2 weeks after admission by upper abdominal transverse incision. The stomach and duodenum were found distended in continuity up to DJ junction. An enterotomy was performed by longitudinal incision on antimesenteric border at DJ junction which revealed a mucosal web with a central hole. Circumferential excision of the web was performed and enterotomy was closed transversely. Oral liquid feeding started on 6th post-operative day (POD) and discharged on 12th POD. Patient was healthy without any symptom of obstruction at 1 month follow up.

Case 2: A 5days aged preterm female neonate weighting 1.6kg, 1st in birth order was born by vaginal delivery at home. At first, she was treated as a case of physiological jaundice with early onset of neonatal sepsis and after 4 more days presented to us with bilious vomiting and failure to pass meconium with fever. On examination the child was severely dehydrated, non-icteric and mildly anemic. Abdominal examination revealed mild epigastric distention, soft on palpation and absent bowel sound. Nasogastric aspirate was bilious and no meconium came out even after rectal wash. Laboratory investigations showed hemoglobin 15.4gm/dl, TLC 25300/mm3. Abdominal X-ray showed gasless abdomen except two radiolucent shadows. Ultrasonography was not conclusive except distended stomach. After fluid and electrolyte replacement laparotomy was planned keeping intestinal atresia with congenital malrotation as preoperative diagnosis. Laparotomy revealed dilated stomach and duodenum till DJ junction and fibrotic ring at DJ junction. Enterotomy done by longitudinal incision at DJ junction and complete mucosal web found. Then circumferential excision of web done and enterotomy closed transversely. Unfortunately, the patient died on 5th POD from septicemia.

Discussion

Main presenting symptom is the bilious vomiting and plain radiograph (showing double bubble appearance) is the most valuable diagnostic tool in all cases of duodenal atresia (DA) except those with partial or incomplete obstruction and also in patients with web at unusual location (additional bubble/gas shadow is seen) as seen in both of our cases [2,5,6,7,8]. Incomplete obstruction may mimic gastroesophageal reflux disease (GERD) on presentation, making the diagnosis difficult and delayed for months as seen in case 1[8,9]. So, suspicion for incomplete obstruction should keep in mind in a child presenting with repeated episodes of vomiting since birth. Screening with ultrasonography is of great importance. An upper gastro-intestinal (UGI) contrast study is indicated to demonstrate the site and nature of the obstruction in case of incomplete obstruction, which also help in surgical planning.Commonly, all types of DA are limited to the second (post-ampullary) followed by first part of the duodenum. The second part of the duodenum is also the most common site of web (85%); involvement other than second part of duodenum is rare. Incomplete obstruction may be caused by a web with a central or eccentric opening as seen in case 1. Ganguly et al (1995), reported a case of duodenal web at DJ junction as both of our cases.Kaddah et al (2006) reported patients with type-I DA; the mucosal diaphragmatic web was present at the second part of the duodenum, except three patients with webs at unusual location. Our both cases are of web at unusual location.Gupta et al (2016), reported 3 cases of more distal duodenal web of which in 2 cases at DJ junction as both of our cases.Gupta et al (2016) proposed that, failure of recanalization shifted from the site of “embryological traffic jam” to unusual locations (third part of the duodenum and DJ junction) which also corresponds to our cases. [10]

Conclusion

Duodenal web may present at location other than second part of duodenum, as seen in both of our patients with web at DJ junction. Clinicians should have high index of suspicion for webs in a child presenting with vomiting since birth.

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