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Congenital Duodenal Diaphragms in the Third Part of Duodenum

The incidence of duodenal atresia is 1 in 10,000 live births(1). Most cases show atresia in the second part of the duodenum. Duodenal diaphragms in the third part of the duodenum are rare(3,4). We report a patient with a duodenal diaphragm in the third part of the duodenum, who presented for the first time at 2 yr of age.

A 2-year-old girl was admitted with the complaints of distension of abdomen and intractable vomiting for 3 days. There was intermittent distension of abdomen and intractable vomiting since 1 week of age. The vomitus was offensive in smell, contained food materials and was bile stained. The episodes lasted for 3 to 4 days and were relieved with medicines and oral fluids, only to recur after 2-3 weeks. She also suffered from constipation. She was admitted in two different hospitals at the age of 2 and 18 months with severe dehydration following vomiting. The child was solely

breastfed upto 3 months. Then cow's milk was added to her diet. From one year of age she used to take mashed rice, khichri and banana. The birth and developmental history was normal.

The child weighed 7.5 kg and the length was 73 cm; both were below the 5th percentile. On examination she was markedly dehydrated. The epigastric region showed visible peristalsis. Investigations showed hemoglobin 11.5 g/dl, and total count 8000/cu mm. Straight X-ray of abdomen in erect posture revealed double bubble appearance but there was gas in the distal intestine. The child received replacement fluids and electrolytes. The abdomen was explored one week after admission through a transverse incision. The stomach and duodenum were found to be distended in continuity up to duodeno-jejunal (D-J) junction. The D-J flexure was mobilised. Rest of the gut was found to be absolutely normal. An enterotomy was performed along the long axis of the gut at the level of D-J junction using an 1" incision. A web was found obliterating almost whole of the lumen with only a small pinhole opening in the centre. The web was excised circumferentially and

the incision line under-run using 2-0 atraumatic catgut suture. The enterotomy was closed in a transverse direction using 2-0 vicryl suture in two layers. The abdominal wound was closed in layers. The post-operative period was uneventful. The child came for follow up after four and eight weeks. She is keeping well and gained 1.5 kg of weight.

Delayed vacuolization of the embryonic intestinal lumen is thought to account for mucosal diaphragms within the duodenum and for duodenal atresia. Atresia may also be caused by vascular insufficiency(2,5). 83% of the duodenal obstruction is related to the orifice of the bile duct; the remaining obstructions are in the 3rd part of the duodenum. 50% of cases of duodenal atresia have a true atresia, 40% cases have a duodenal diaphragm with or without central opening and 10% cases show stenosis(1). The duodenal diaphragm with a central aperture may progress as a result of chronic distension into the classical "wind-sock" deformity(2,6). In our patient, however, the site of the diaphragm was along the D-J junction. There was no evidence of any other congenital malformation. The diagnosis was made on the clinical manifestations and upright film of abdomen showing a distended stomach and a markedly distended stomach and a markedly distended first portion of duodenum with fluid levels (double bubble sign). There was gas in the distal intestine indicating incomplete obstruction. Early diagnosis and timely inter-

vention carries a favorable prognosis particularly in cases without other congenital malformations.

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