

Neonatal duodenoduodenostomy and missed duodenal stenosis with windsock deformity: a rare intraoperative error of technique and judgement by an unwary surgeon

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DESCRIPTION

This is a case of a full-term male infant born by vaginal delivery. Pregnancy was complicated by polyhydramnios and double bubble sign on anomaly but no evidence of Down's syndrome or other associated congenital anomalies. A size 10 nasogastric tube was inserted easily into the stomach without any hold-up and dark green bile of 100 mL was drained. Anus was normally sited and of normal calibre. A plain abdominal radiograph showed a double bubble sign (figure 1A). The infant underwent exploratory laparotomy and duodenoduodenostomy for presumed duodenal atresia. At operation it was noted that dark green bile was aspirated following opening of the proximal dilated duodenum, which was anastomosed with the distal collapsed duodenum by side-to-side anastomosis. However, the patient continued to have high-bilious aspirates. A paediatric surgical opinion was requested. A careful look at the initial plain film showed few gas bubbles going beyond the distal duodenum into the left side of the abdomen raising doubts about the windsock deformity. A repeat plain radiograph showed dilated stomach and no gas beyond it (figure 1B). An upper gastrointestinal contrast study with delayed 24 h film failed to show any progression of contrast beyond the mid-duodenum (figure 1C). The patient underwent re-exploration with excision of duodenal web, insertion of nasojejunal transanastomotic feeding tube and recovered uneventfully. Congenital duodenal stenosis can be mucosal diaphragm with a central or eccentric hole, intrinsic muscle wall narrowing or extrinsic narrowing secondary to annular pancreas.¹ It may pose

diagnostic and therapeutic challenges.² Intraoperative errors of technique and judgement may pose serious postoperative problems.³

Learning points

- ▶ Duodenal stenosis should be suspected if a baby has no chromosomal abnormalities or other associated anomalies and high index of suspicion of windsock deformity leads to early recognition preoperatively.
- ▶ Intraoperative bile through the stenotic windsock deformity beyond the site of attachment of the web can mislead the unwary surgeon and the bypass duodenoduodenostomy may entirely remain distal to the obstruction as happened in our case.
- ▶ Exceptionally, there could be multiple diaphragms and the downstream one may be missed due to non-dilation and therefore careful passage and withdrawal of balloon Fogarty or Foley catheter both ways proximally into the stomach and distally into the small bowel will prevent both these problems.

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Figure 1 (A) Preoperative radiograph showing double bubble. Note the air beyond the duodenum in the left upper abdomen. (B) Postoperative plain film showing stomach gas only. (C) Upper gastrointestinal delayed contrast film showing no contrast beyond mid-duodenum.



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