# Closed gastroschisis with left defect: a rare variant

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## DESCRIPTION

Gastroschisis is a congenital abdominal wall defect where the intestine, stomach and rarely the other abdominal organs like the ovary, urinary bladder and the liver eviscerate through the defect. It occurs in 4–5 per 10 000 live births and is more common in preterm, low birth weight and female babies. Very rarely, the abdominal wall defect completely closes around the eviscerated bowel resulting in closed gastroschisis (CG). This constitutes 6% of all gastroschisis.[1]

A 2.2 kg term baby boy delivered at home at 36 weeks of gestation presented on day 1 of life with an eviscerated loop of herniated bowel segment seen to the left of the umbilicus (figure 1). The bowel loop was uncovered, erythematous and congested, butlooked viable; the underlying umbilicus was closed. The child had bilious vomiting and had not passed meconium. The X-ray of the abdomen was suggestive of intestinal obstruction. The child was resuscitated, and exposed bowel was covered with an indigenous plastic silo using urobag; nasogastric decompression and rectal syringing were performed. After proper parental consent, he was taken up for exploratory laparotomy and proceed immediately the next morning.

Intraoperatively, the eviscerated bowel loop was seen to be continuing intraabdominally through a thin cord-like fibrous structure. There was associated ileal atresia. The effective remaining bowel length was about 50 cm. An end to side oblique ileo-colic anastomosis was done in single layer interrupted sutures after ruling out distal bowel atresias. Postoperatively, the child received total parenteral nutrition (TPN) for 7 days in view of precarious small bowel anastomosis, small intra-abdominal domain and for the risk of aspiration. He was started on oral feeds from postoperative day 7 and was discharged on postoperative day 10 after establishing full oral feeds. There was no associated skeletal, cardiac or renal anomaly. At 48 months of follow-up, the child was alive, feeding well and gaining weight.

In 2001, Davenport *et al*[2] reviewed 11 cases of CG and reported 4 antenatally diagnosed cases of their own. They observed that the spectrum of clinical presentation in cases of CG varied from those associated with gangrenous bowel and a completely closed ring to those associated with salvageable extra-abdominal bowel segment with a closing abdominal defect. Our case falls into the latter category associated with healthy looking, viable extra-abdominal bowel segment also termed as closing gastroschisis.

The conventional location of the herniated viscera in all cases of gastroschisis is to the right of the umbilicus. However, in our case, the herniated segment was to the left of the umbilicus similar to that reported by Abdel-Latif *et al*.[3]

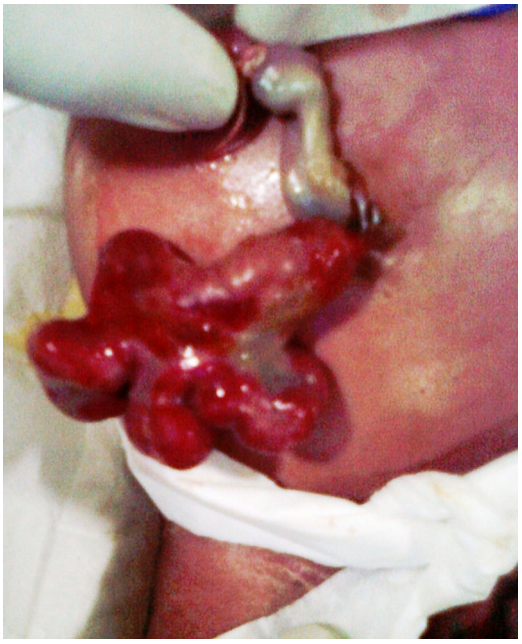

**Figure 1** One-day old baby boy with a completely closed umbilical ring with red, erythematous and uncovered but viable prolapsed bowel loop; defect seen towards the left of umbilicus.

All 11 cases of CG reviewed by Davenport[2] died; however, two of their own cases diagnosed antenatally were salvaged by early delivery (33 weeks and 35 weeks) and timely surgery. The key ultrasonographic feature in CG appears to be the serial presence of dilated intra-abdominal bowel loops with associated shrinkage or no increase in the freely floating extra-abdominal bowel loops.[1] Our case

### Learning points

- Closed gastoschisis is a rare congenital abdominal wall defect where the umbilical ring closes around the eviscerated bowel.
- The defect in gastroschisis is conventionally located to the right of the umbilical cord but may rarely be present to the left.
- Antenatal diagnosis, institutional delivery, covering of the exposed bowel and early release of constriction help salvage the viable bowel and improve outcome.
- Management is challenging due to associated short bowel, but outcome is favourable with adequate surgery and total parenteral nutritional support.



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was delivered by a midwife who covered the bowel with moist cloth and referred the child to our centre. However, there was no antenatal ultrasound done.

In most cases, the management is challenging due to associated short bowel syndrome.[1–3] However, the outcome is favourable with adequate surgery and with TPN support. Our case was operated timely on day 2 of life and had an adequate length of healthy salvageable small bowel. In cases of gastroschisis where surgery is delayed, it is ideal to widen the ring by a vertical slit, which decreases the bowel congestion and oedema, and to cover the exposed bowel with a silo.

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