

# ROTATIONAL DISORDERS

## Malrotation

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Malrotation refers to a failure of formation of the mid-region switch (described in Development of the mesentery and peritoneum ) ( Figure 65.13 ) and is the most common abdominal surgical emergency in the neonatal period. Early during development, the right and left side of the mid-region fold of the mesentery are aligned from the central to peripheral zones. Later, the sides switch position at the periphery but not at the central zone. Adjoining intestine similarly changes position to take up the normal conformation. In malrotation, the switch does not occur, and the sides of the mid-region fold remain aligned. This explains why the duodenum, jejunum and ileum are aligned in the right flank of the abdomen. Malrotation in itself is not pathogenic. However, the small intestine and adjoining mesentery are abnormally mobile and can undergo torsion around the superior mesentery artery , which can be life-threatening. History The neonate with a volvulus due to malrotation is patently distressed, vomiting and has a distended abdomen. Investigation Urgent CT is mandated and clarifies the position of the duodenojejunal junction. Normally the duodenojejunal flexure is positioned at or to the left of the midline. In volvulus due to malrotation, the duodenojejunal junction is on the right of the midline (i.e. the mid-region switch has not occurred). Treatment The mainstay of treatment is Ladd's procedure, in which the volvulus is first reversed and then the intestine is secured to the posterior abdominal wall. Although this does not correct the underlying mesenteric abnormality , it does reduce the mobility of the intestine and mesentery and reduces the likelihood of further volvulus. It is possible however to address the underlying mesenteric abnormality by recapitulating the mid-region switch. This returns the intestine and mesentery to a normal conformation. They can then be fixed to the posterior abdominal wall. -

Mesenteric transition zone Fat wrapping Creeping fat Normal mesentery (b) The mesenteric transition zone and Mesenteric principles of gastrointestinal surgery: basic and

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