Acute intestinal obstruction of the newborn

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Neonatal intestinal obstruction has many potential causes. Congenital atresia and stenosis are the most common. Intestinal malrotation with midgut volvulus, meconium ileus, Hirschsprung’s disease, imperforate anus, necrotising enterocolitis and an incarcerated inguinal hernia may also be responsible. Many of these conditions are discussed in Chapters 17 and 18 . Intestinal atresia Duodenal atresia and stenosis are the most common forms of intestinal obstruction in the newborn (see Chapter 18). Jejunal or ileal atresias are next in frequency whereas colonic atresia is rare. The possibility of multiple atresias makes intraoperative assessment of the whole small and large bowel mandatory . As with all congenital anomalies, associated malformations are common and should be excluded. There are four main types of jejunal/ileal atresia, ranging from an obstructing membrane with continuity of the bowel wall through blind-ended segments of bowel separated by Harald Hirschsprung , 1830–1916, physician, The Queen Louise Hospital for Children, Copenhagen, Denmark, described congenital megacolon in 1887. - - a fibrous cord or V-shaped mesenteric defect (including the so-called apple-peel atresia) (Figure 78.17), to multiple atresias (‘string of sausages’). The obstructed proximal bowel is at risk of perforation, which may happen prenatally , causing meco - nium peritonitis in the fetus.). Small bowel atresias present with intestinal obstruction soon after birth. Bilious vomiting is the dominant feature in jejunal atresia whereas abdominal distension is more promi - nent with ileal atresia. A small amount of pale meconium may be passed despite the atresia. Plain abdominal radiographs sho w a variable number of dilated loops of bowel and fluid levels according to the level of obstruction. In a stab le infant, a contrast enema may be required to clarify the cause of a distal bowel obstruction.

Figure 78.16 Reducing the terminal part of the intussusception (after RE Gross). Figure 78.17 Apple-peel jejunal bowel atresia with obstructed proximal jejunum and collapsed distal ileum coiled round a remnant ileocolic artery (courtesy of MD Stringer, Leeds, UK).

Duodenal atresia is corrected by a duodenoduodenostomy . In most cases of jejunal/ileal atresia, the distal end of the dilated proximal small bowel is resected and a primary end-to-end anastomosis is possible. If the proximal bowel is extremely dilated it may need to be tapered to the distal bowel before anastomosis. Occasionally , a temporary stoma is required before definitive repair. Meconium ileus Cystic fibrosis is almost always the underlying cause of this condition. Meconium is normally kept fluid by the action of pancreatic enzymes. In meconium ileus the terminal ileum becomes filled with thick viscid meconium, resulting in progres sive intestinal obstruction. A sterile meconium peritonitis may have occurred in utero . Visibly dilated loops of bowel are often palpable in the newborn with meconium ileus. An abdominal radiograph may show a dilated small intestine with mottling. Fluid lev generally not seen. Unlike ileal atresia there is no abrupt ter mination of the gas-filled intestine. A contrast enema shows an unused microcolon. As

the condition is caused by an autosomal recessive genetic defect, a family history may be present. Fur ther assessment includes gene mutation analysis and, beyond the neonatal period, a sweat test, whic h shows elevated sodium and chloride levels (>70 /uni00A0 mmol/L). Uncomplicated meconium ileus may respond to treatment with a h yperosmolar Gastrografin enema; this draws fluid into the gut lumen and also has detergent properties, whic h help to liquefy the meconium. Infants treated in this way need extra intravenous fluids to compensate for fluid shifts. Meconium ileus complicated by intestinal perforation, volvulus or atresia, or unresponsive to enemas, demands surgery . Various surgical procedures are used, including intestinal resection and tem porary stoma formation, resection and primary anastomosis, and, in uncomplicated cases, enterotomy and irrigation of the bowel. T he Bishop–Koop operation (Figure 78.18) with its irrigating stoma is now rarely used.

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