

Necrotizing Enterocolitis

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History

2 week old former premature infant with abdominal distention.

Diagnosis

Necrotizing Enterocolitis

Discussion

Necrotizing enterocolitis (NEC) is one of the most common acquired, life-threatening gastrointestinal diseases in the newborn. The incidence of NEC is inversely proportional to the gestational age. Infants less than 28 weeks gestational age and those less than 1000 g are at a greater risk for NEC, however approximately 10% of neonates with NEC are born at term (usually secondary to congenital heart disease, perinatal asphyxia, patent ductus arteriosus, indomethacin therapy, or decreased umbilical flow in utero). NEC most commonly manifests within the first or second week of life although the time of presentation varies with the gestational age; in very premature neonates, NEC may manifest only in the second or third week of life.

In NEC, bowel dilatation is a nonspecific finding but present in over 90% of patients. Dilatation of bowel is an early sign and may even precede the clinical features of NEC by several hours. The severity of NEC is usually proportional to the degree of bowel dilation. Resolution of NEC is associated with the dilated bowel gradually returning to a more normal appearance. An ominous sign is the change from generalized dilatation to a nonuniform distribution of bowel gas. Stagnation of bowel gas pattern suggests the development of full-thickness necrosis and may precede clinical deterioration including signs of peritonitis. For these reasons, the degree and pattern of bowel dilatation are the most important signs for early diagnosis and for follow-up.

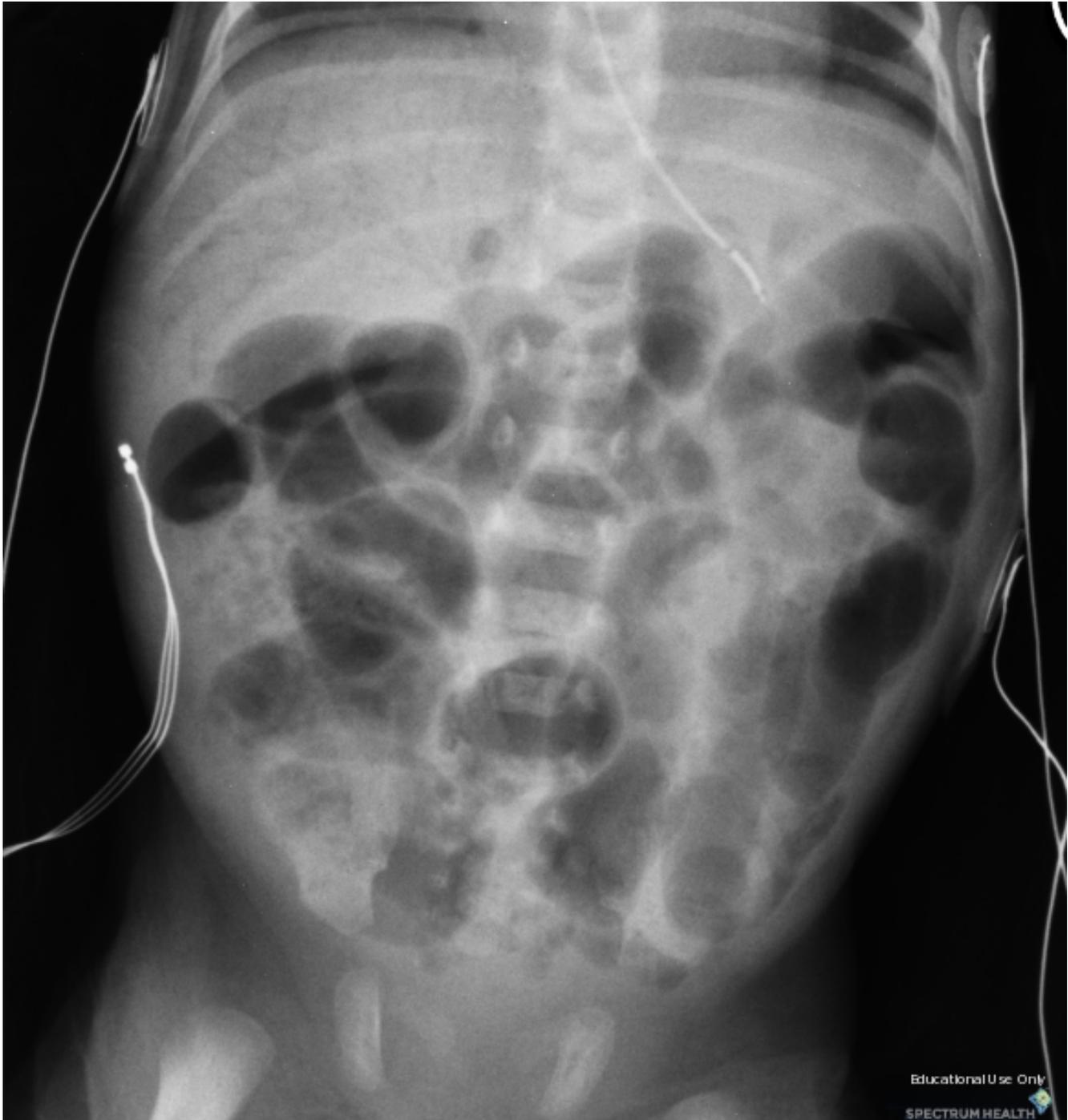
The etiology and pathogenesis of NEC remain controversial. It is believed that NEC is secondary to a complex interaction of multiple factors, notably prematurity, that result in mucosal damage (infection, intraluminal contents, immature immunity, release of vasoconstrictors, and inflammatory mediators), which leads to intestinal ischemia and necrosis. The loss of mucosal integrity allows systemic passage of bacteria and their toxins resulting in a generalized inflammatory response and overwhelming sepsis.

Findings

CR-Moderate gaseous distention of bowel with mural pneumatosis and portal venous gas.

Reference

Epelman M, Daneman A, Navarro OM, Morag I, et al. Necrotizing Enterocolitis: Review of State-of-the-Art Imaging Findings with Pathologic Correlation. *RadioGraphics* (2007); 27:285-305.



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