

## Clinical Image

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# A case of neonatal necrotizing enterocolitis

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### Abstract

Neonatal Necrotizing Enterocolitis (NEC) is a common disease in newborns with a relatively high clinical incidence. Premature infants with NEC are mainly associated with prematurity, low birth weight, immature development, and non-breastfeeding. The incidence of NEC in full-term infants is low, accounting for about 5% to 25% of all NEC cases, and its mechanism of occurrence is different from that of premature infants, mainly related to birth asphyxia, congenital heart disease, hypoglycemia, sepsis, etc.

**Keywords:** NEC; Neonatal; X-ray.

### Introduction

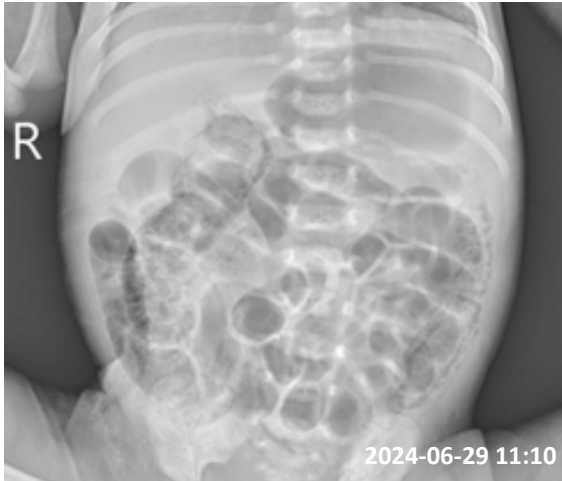
Early or mild NEC typically presents with non-specific findings on abdominal X-rays, which may sometimes only manifest as changes in bowel motility, intestinal distension, bowel obstruction, the degree of bowel rigidity and dilation, and blurring and widening of the bowel spaces. Subsequently, as the disease progresses, bright shadows such as linear, strip-like, beaded, and arc-shaped can be seen in the intestinal wall on X-ray plain films. Portal venous gas appears as bright shadows extending from the hepatic hilum outward, resembling the shape of dead branches.

### Case description

The premature baby was born at our hospital on 2024-06-25 at 35+1 weeks of gestation, with poor life ability. On the evening of 2024-06-29, the baby had poor feeding and vomited stomach contents once. The bowel sounds were weak. Abdominal X-ray plain films were taken on and 2024-07-01.

### Comment

NEC Phase I- The bedside X-ray of the patient shows only intestinal dilation and gas accumulation or slightly irregular intestinal morphology, and mild intestinal obstruction can also be seen. NEC Phase II- The bedside X-ray of the patient may show irregular shape of the intestinal tract, widened intestinal space, and thickened intestinal wall. More than two ographs suggest a relatively fixed course of the intestinal tract. It can present with intestinal wall gas accumulation, portal vein gas accumulation, and ascites. NEC Phase III- In addition to the above manifestations, a significantly increased density in the abdomen and blurred disappearance of the abdominal fat line indicating the presence of ascites, perforation signs are often present, and free gas in the abdominal cavity can be seen on X-ray.



**Figure 1:** The abdominal X-ray of the child showed dilation of the abdominal intestinal tract, with linear translucent shadows visible on the left and right abdominal walls. It is considered that NEC (stage II) is accompanied by intestinal wall gas accumulation, and symptomatic treatment such as fasting, gastrointestinal decompression, and anti-infection is given. The bedside X-ray of the patient only shows intestinal dilation and gas accumulation or slightly irregular intestinal morphology, and mild intestinal obstruction can also be seen. Bedside X-rays of pediatric patients may show irregular shape of the intestinal tract, widened intestinal space, and thickened intestinal wall. Two or more X-rays suggest a relatively fixed course of the intestinal tract. Intestinal wall gas accumulation, portal vein gas accumulation, and ascites may occur.



**Figure 3:** The child's side abdomen shows a linear translucent shadow with a reduced range compared to before, and new intestinal dilation and gas accumulation are observed in the middle abdomen. Further supportive treatment such as anti-infection, fasting, gastrointestinal decompression, and intravenous nutrition will be given.



**Figure 2:** The abdominal X-ray of the child showed dilation and gas accumulation in the abdominal intestinal tract, with an increased range compared to before, indicating the progression of NEC. Symptomatic treatment such as gastrointestinal decompression, fasting, and anti-infection was given clinically.



**Figure 4:** The intestinal dilation in the abdomen has been alleviated compared to before, and the linear translucent image of the lateral abdominal intestines is not visible, suggesting an improvement in NEC compared to before. After seven days of continuous gastrointestinal decompression, the condition improved and the patient was discharged.