CASE REPORT

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Complicated Necrotizing Enterocolitis in a full-term Infant – A Case Report

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ABSTRACT

Necrotizing enterocolitis (NEC) is a serious gastrointestinal disorder primarily affecting preterm infants. However, cases of NEC in full-term infants are relatively rare but can present with unique challenges and clinical features. We present a case report of a full-term baby who developed perforation due to necrotizing enterocolitis shortly after birth. The infant underwent surgery and transverse colostomy was made. Over the course of treatment, the infant showed gradual improvement and was discharged home after a hospital stay of 16 days. This case highlights the atypical presentation of NEC in a full-term infant, underscoring the importance of early recognition and prompt intervention. Although NEC is commonly associated with preterm infants, it should be considered as a potential diagnosis in full term neonates presenting with gastrointestinal symptoms. Clinicians should maintain a high index of suspicion for NEC in these cases to ensure timely management and reduce the risk of complications.

Keywords: *Necrotizing enterocolitis, Infant, Preterm.*

INTRODUCTION

Necrotizing enterocolitis (NEC) is a devastating gastrointestinal disease predominantly seen in premature infants, with reported incidence rates ranging from 2% to 12% among neonates born before 32 weeks of gestation.[1] NEC is characterized by inflammation, ischemia, and necrosis of the intestinal mucosa, leading to significant morbidity and mortality in affected infants.[2] Although NEC is primarily associated with prematurity, cases of NEC in full-term infants have been reported, albeit infrequently.[3] The occurrence of NEC in full-term infants poses unique challenges for clinicians, as it deviates from the expected pattern observed in preterm infants. Understanding the risk factors, clinical presentation, and management strategies specific to NEC in full-term infants is essential for early diagnosis and timely intervention. Several risk factors have been implicated in the development of NEC, including prematurity, enteral feeding, intestinal ischemia, bacterial colonization, and an immature immune system.[4] In the case of full-term infants, the underlying etiology of NEC remains less understood. Proposed risk factors for NEC in this population include prenatal hypoxia, maternal infection, formula feeding, and genetic predisposition.[5,6]

Clinical presentation of NEC in full-term infants may differ from that observed in preterm infants. Full- term infants with NEC often present with abdominal distension, vomiting, and bloody stools, similar to preterm infants. However, the onset of symptoms is usually more abrupt, occurring within the first few days of life.[3] In severe cases, full-term infants may rapidly progress to bowel perforation, leading to peritonitis and necessitating emergent surgical intervention. Due to the rarity of NEC in full-term infants, the management approach for this subgroup of patients is not well-established. Treatment strategies commonly employed in preterm infants, such as bowel rest, antibiotic therapy, and parenteral nutrition, are often initiated in full-term infants with suspected NEC.[8] However, the decision for surgical intervention in full-term infants may need to be made earlier compared to preterm infants due to the higher likelihood of bowel perforation.[7] In this case report, we present a full-term infant who developed NEC with perforation soon after birth. We discuss the clinical course, management strategies, and outcome of the patient. By sharing this case, we aim to contribute to the existing literature on NEC in full-term infants and emphasize the need for vigilance and prompt intervention in this unique patient population.

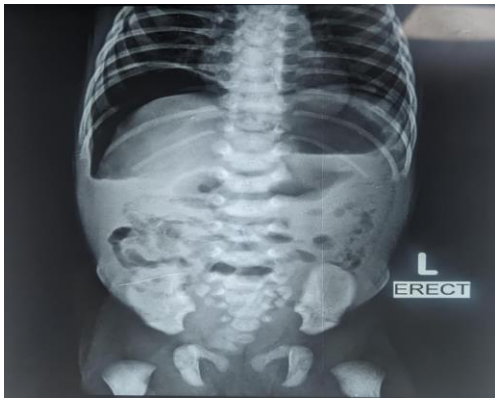
CASE REPORT

Baby Noor Asghar, a female weighing 2.6 kg, was born at Hameed Latif Hospital in Lahore to PG at 37+4 weeks through spontaneous vaginal delivery. The baby's Apgar scores at birth were 8 and 9. The mother had a history of Gestational Diabetes controlled by diet. However, due to feeding intolerance, the baby was transferred to the nursery ICU after birth. Initial tests revealed a TLC (Total Leukocyte Count) of 26, with Neutrocytes accounting for 55% and Lymphocytes for 45%. The rest of the initial tests were normal.

The baby was in good condition upon examination, with no abnormalities found in the general or systemic examination. The baby was initially treated for GERD (Gastroesophageal Reflux Disease), but feeding intolerance persisted. On the third day, the baby developed sepsis, characterized by generalized mottling and lethargy, which was treated with appropriate empirical antibiotics. On the same day, the baby showed signs consistent with NEC (Necrotizing Enterocolitis), such as abdominal distension and the passage of bloody stools. The baby was promptly evaluated by a multidisciplinary team, and radiographic results revealed gas under the diaphragm. The surgical team immediately performed a laparotomy, which revealed extensive fecal peritonitis, pus flakes in the left subsplenic space, and NEC affecting the left colon from the splenic flexure to the sigmoid colon, with multiple perforations and necrotic patches.

A transverse colostomy was created in the left subcostal region, and a mucous fistula was made in the left iliac fossa. The infant gradually improved during the course of treatment, with the colostomy becoming functional on the third day after surgery, and feeding was initiated on the seventh day after surgery, gradually increasing over time. Sepsis resulting from a wound infection was managed with appropriate antibiotics and wound care. The baby was discharged on the sixteenth day of life.

Figure 1: Radiographic results revealed gas under the diaphragm



DISCUSSION

Necrotizing enterocolitis (NEC) is a serious gastrointestinal disease primarily affecting premature infants, but it can also occur in full-term infants, albeit infrequently. This case report highlights the occurrence of NEC with perforation in a full-term baby shortly after birth and discusses the challenges and management strategies associated with this rare presentation. The presentation of NEC in full-term infants differs from that in preterm infants in terms of onset, clinical features, and severity. Full-term infants with NEC often exhibit a more sudden onset of symptoms, typically within the first few days of life, compared to the gradual progression observed in preterm infants.[3] The rapidity of symptom onset in full-term infants may contribute to the increased risk of bowel perforation, as seen in our case. The exact etiology of NEC in full-term infants remains poorly understood. Several risk factors have been proposed, including prenatal hypoxia, maternal infection, formula feeding, and genetic predisposition.[1,8] Further research is needed to elucidate the underlying mechanisms and identify specific risk factors associated with NEC in this population. Management strategies for full-term infants with NEC are largely based on those used in preterm infants. Early recognition and prompt initiation of treatment are critical for optimizing outcomes. Supportive therapy, including bowel rest, intravenous fluid resuscitation, and broad-spectrum antibiotics, were initiated in our patient.[4] However, given the perforation and risk of peritonitis, surgical consultation was obtained promptly. Timely decision-making for surgical intervention is crucial in full-term infants to prevent complications associated with delayed treatment. Surgical intervention in full-term infants with NEC often involves resection of the necrotic bowel segment and anastomosis as it was done in our case. This finding aligns with previous reports suggesting that full term infants with NEC are more likely to require surgical intervention compared to preterm infants.[7,8] Long-term outcomes of full-term infants with NEC and perforation remain a matter of concern. Studies have suggested that full-term infants with NEC may have a higher risk of long-term complications, including neurodevelopmental impairments.[11] Therefore, appropriate follow-up and neurodevelopmental assessments are essential to identify and manage any potential sequelae. This case report adds to the limited literature on NEC in full-term infants and emphasizes the need for heightened awareness of this condition in this specific population. Although rare, NEC should be considered in the differential diagnosis of full-term infants presenting with gastrointestinal symptoms, particularly if there is evidence of feeding intolerance, abdominal distension, bilious vomiting, or bloody stools.

CONCLUSION

In conclusion, this case emphasizes the importance of early recognition and prompt intervention in cases of NEC in full – term infants with bowel perforation. Understanding the unique aspects of NEC in this patient population is essential for improving clinical outcomes and guiding future research to optimize for the vulnerable infants. Further research is warranted to explore the pathogenesis, risk factors, and optimal management strategies for NEC in full-term infants. Collaboration among multidisciplinary teams, including neonatologists, pediatric surgeons, and researchers, is crucial to advance our understanding of this complex condition and improve outcomes for affected infants

REFERENCES

1. Neu J, Walker WA. Necrotizing enterocolitis. N Engl J Med. 2011;364(3):255-264.
2. Rees CM, Eaton S, Kiely EM, Wade AM, McHugh K, Pierro A. Perinatal necrotizing enterocolitis: clinical relevance of stage and severity of disease. Arch Dis Child Fetal Neonatal Ed. 2007;92(6):F405-F409.
3. Das BK, Chowdhury T, Das S, et al. Necrotizing enterocolitis in full term neonates: an unchartered territory. J Clin Diagn Res. 2016;10(4):SC10-SC13.
4. Patel RM, Kandefer S, Walsh MC, et al. Causes and timing of death in extremely premature infants from 2000 through 2011. N Engl J Med. 2015;372(4):331-340.
5. Stoll BJ, Hansen NI, Bell EF, et al. Trends in care practices, morbidity, and mortality of extremely preterm neonates, 1993-2012. JAMA. 2015;314(10):1039-1051.
6. Slykerman RF, Thompson JMD, Clark PM, et al. The effect of early-life stressors on the risk of infection in preterm infants. Pediatrics. 2013;132(4):e1009-e1017.
7. Ogihara M, Yamasaki Y, Mochizuki H, et al. Bowel perforation in full-term infants with necrotizing enterocolitis. Pediatr Surg Int. 2005;21(2-3):88-92.
8. Shah TA, Meinzen-Derr J, Gratton T, Steichen J, Donovan EF, Yolton K. Hospital and neurodevelopmental outcomes of extremely low-birth-weight infants with necrotizing enterocolitis and spontaneous intestinal perforation. J Perinatol. 2012;32(7):552-558.
9. Yazji I, Srinivasan V, Smith EO, et al. Population-based study comparing treatment outcomes in neonates with necrotizing enterocolitis treated with either 3-week or 4-week courses of antibiotics. J Pediatr. 2017;189:118-123.e3.
10. Moss RL, Dimmitt RA, Barnhart DC, et al. Laparotomy versus peritoneal drainage for necrotizing enterocolitis and perforation. N Engl J Med. 2006;354(21):2225-2234.
11. Sisk PM, Lovelady CA, Dillard RG, et al. Early human milk feeding is associated with a lower risk of necrotizing enterocolitis in very low birth weight infants. J Perinatol. 2007;27(7):454-9.