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Case Report

A Preterm Newborn with Spontaneous Intestinal Perforation Managed with Non-surgical Approach

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Abstract

A male 1255 gm neonate, first of the twins was born to a 35 year old gravidae 3 mother via emergency caesarean section at 34 weeks of gestation in view of premature rupture of membranes and previous caesarean section. Antenatally , this was a triplet pregnancy with one fetus reduced at 11 weeks of gestation. A full course of antenatal corticosteroid therapy was administered. The Apgar score was 8 at both 1 and 5min. The infant was admitted to the neonatal intensive care unit in view of prematurity, low birth weight and history of leaking PV in mother 5 days prior to LSCS. A venous umbilical catheter was placed, and sepsis screen was sent. He was started on ampicillin and gentamicin. Parenteral nutrition was initiated, and minimal enteral feeding with formula milk via orogastric tube was started within first 24 hours of life. Feeding intolerance was noted in form of significant greenish residual aspirates following which feeding was stopped and antibiotics were upgraded to meropenem and colistin. The first passage of meconium occurred within 24 hours of life. Abdominal distension along with a bluish discoloration was noted on day 3. Haemodynamic instability along with thrombocytopenia was also observed for which the baby received 2 units of platelet transfusion. Abdominal radiograph was suggestive of pneumoperitoneum, hence differentials of spontaneous intestinal perforation and necrotising enterocolitis (NEC) was suspected, and enteral feeding was discontinued. Serial abdominal radiographs were obtained and were conclusive of pneumoperitoneum hence appropriate empirical antibiotic treatment with vancomycin, cefotaxime and metronidazole was initiated and an abdominal drain was inserted at day 6 of life following which abdomen became soft and baby was passing stools 1 to 2 times in a day. Baby was initially being managed on room air but at day 11 of life was put on CPAP in view of respiratory distress and apnoea episodes and was gradually weaned off in next 48 hours, EBM feeds were restarted at day 25 of life and with conservative management appropriate weight gain of the baby was observed.

Keywords: Newborn; Spontaneous Intestinal Perforation (SIP); Necrotising Enterocolitis (NEC)

Perforation of intestines is a major fatal complication in preterm babies and is associated with high morbidity and mortality [1]; commonest aetiology being NEC. However , alternate causes, such as bowel obstruction, gavage-related mechanical injury and spontaneous intestinal perforation (SIP), must be contemplated [2].

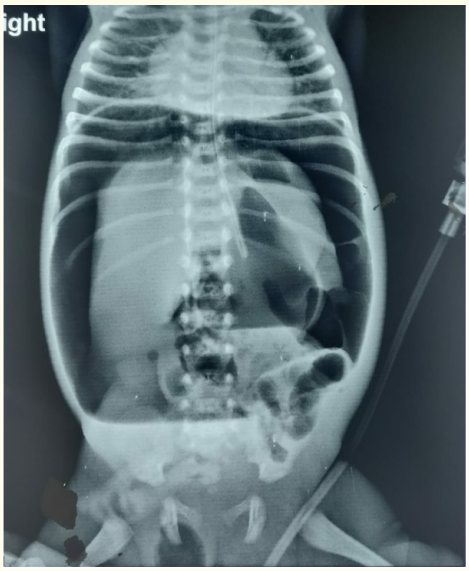
SIP is an acquired neonatal intestinal disease, and is described as a solitary or, less often, multiple perforations, characteristically located in the terminal ileum, without an apparent cause [2], as in the present case. The main risk factors for SIP are prematurity, very low birth weight and extremely low birth weight babies, stress, hypoxia, shock, premature rupture of membranes, umbilical ves-

sel catheterization, and indomethacin therapy. Congenital defects of the intestinal musculature is also a possible risk factor for SIP. Recent evidence on the pathogenesis and potential risk factors, except for prematurity and extremely low birth weight, remains contentious [3].

SIP presents early in life, at a mean age of 7days (*vs* 15 days for NEC), often with a typical black-bluish discoloration of the abdomen [2,3], which was observed clinically at day 3 in our case. Plain radiographs of the abdomen reveal the pneumoperitoneum and occasionally a gasless abdomen, usually without the imaging hallmarks of NEC (i.e., pneumatosis intestinalis or portal venous gas) [2]. SIP is characterized histopathologically by a small perforation and mucosal thinning, without ischemic necrosis or neutrophil infiltrates, which are classically found in NEC. Conversely, cases of SIP with pathological features of necrosis have been described [2,3].

Primary peritoneal drainage has been suggested as a management option and surgery remains the current treatment of choice for SIP but a non-surgical approach has also been reported [2].

Newborns with SIP conventionally show better survival rates than NEC infants, if promptly identified and treated. However, both groups may exhibit similar impaired long-term neurodevelopmental consequences [1-3].



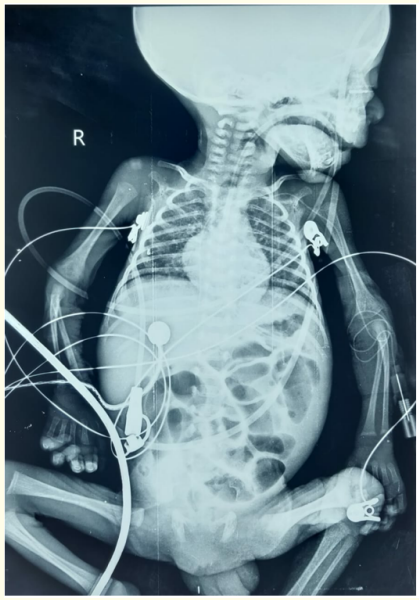


Figure 1

Conclusion

SIP is a known occurrence in preterm neonates and characteristically presents in the initial days of life. Timely diagnosis and discerning it from NEC helps in management and improving outcomes. Non-surgical approach with peritoneal drainage may be considered as first line strategy in select cases.

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