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SPONTANEOUS INTESTINAL PERFORATION IN PRETERM/EXTREMELY LOW BIRTH WEIGHT BABY-SELF HEALING : AN UNUSUAL CASE REPORT

Neonatology

Vimal kumar* Fellow (NICU) , Md Pediatrics, Department Of Pediatrics Max Super-speciality Hospital Delhi.*Corresponding Author

Jay Kishore Singh Principal Consultant And Head Of Nicu, Dnb Neonatology,md Pediatrics, Department Of Pediatrics Max Superspeciality Hospital Delhi

Sandeep Kumar Fellow (NICU), Max Pediatrics, Department Of Pediatrcs Max Superspecaility Hospital Delhi

Nishant Tomar Fellow (NICU), Md Pediatrics, Department Of Pediatrics Max Superspeciality Hospital, Delhi

ABSTRACT

Spontaneous intestinal perforation in preterm newborn is seen in ~ 1.1% babies. Necrotising enterocolitis and spontaneous intestinal perforation are two grave complications in preterm and extremely low birth weight baby. It is important to differentiate between these two surgical conditions. Currently surgical laparatomy /peritoneal drainage are treatment modality used for management. Conservative approach of management is now evolving and is possible alternative option in babies with spontaneous intestinal perforation.

KEYWORDS

SIP-spontaneous intestinal perforation, NEC- necrotizing interocolitis , conservative management

INTRODUCTION: Spontaneous intestinal perforation is one of the complications seen in preterm/ELBW babies. Surgical management remains the modality of treatment of these babies till now. Some case reports are being reported of successful conservative management. In this report, successful conservative management of intestinal perforation in a preterm and ELBW baby is reported and discussed.

CASE SUMMARY: This was an out-born baby; born to G2A1 , 26 year old mother following IVF pregnancy by LSCS in view of ante-partum hemorrhage. Baby was delivered at 26 weeks of gestation and was ELBW (795 gm) who developed respiratory distress syndrome. Baby was transported to our centre for further management. Baby was put on invasive ventilatory support (SIMV+TTV+PS) and was given two doses of surfactant. Inotropic support was also required and continued for 72 hours. Total parenteral nutrition started from day one.

On D-3 of admission the baby developed pulmonary hemorrhage which was managed conservatively with FFP and PRBC. ECHO done showed hs PDA (hemodynamically significant PDA) which was managed pharmacologically with injectable paracetamol. Complete closure of PDA was seen on repeat echocardiography on D7.

Baby started on total parenteral nutrition from day1. Enteral nutrition (EBM /Donor milk) started on day 8 of life which was increased over next 6 days to full feed. On day 15 baby had feed intolerance. Sepsis screen and x-ray abdomen done revealed normal CRP and increased TLC ; x-ray abdomen showed distended bowel loops and no any pneumatosis intestinalis or portal venous gas. Besides mild abdominal distension, clinical examination did not show abdominal wall erythema or tenderness. In view of persisting vomiting and mild abdominal distension X-ray abdomen repeat done after 24 hours showed pneumoperitoneum (fig-1). Repeat sepsis screen at an interval of 24 hours done revealed normal CRP (6.39 mg/dl) and increased total count (34,700) with normal platelet counts. Blood gas showed severe metabolic acidosis. Hyponatremia was also noted. Broad spectrum antibiotic was given. Baby also required inotropic support for 4 days then tapered and stopped. Serial clinical examinations did not showed any tenderness/ erythema of abdominal wall. On account of hemodynamic instability and extremely low birth weight baby surgical exploration (laparotomy/peritoneal drainage) after discussion with parent was deferred due to parent's refusal for surgical exploration. Baby was managed conservatively. Serial monitoring of clinical signs and radiological examination showed resolution of gaseous shadow and improvement in clinical symptoms and signs. Gastrograffin study (fig-2) done after 3 week of perforation on day-36 was not showing any leak hence feed was started and gradually built up to full

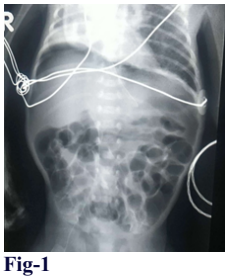

Fig-1

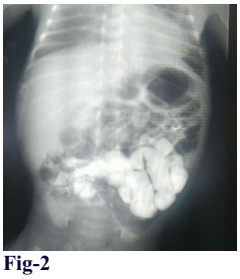

Fig-2

Baby was kept on respiratory support for a total 40 days (invasive ventilation-16 days and noninvasive ventilation for a total 24 days). Baby was stable, tolerated feeds well and was off respiratory support and gained weight adequately. In follow-up, the baby is thriving well and the growth parameter is appropriate for current age.

DISCUSSION:

Spontaneous intestinal perforation seen in preterm babies. Spontaneous GI perforation is being reported to be ~ 1.1% in VLBW and 7.4% in ELBW neonates (1). Only a few cases have been described in full-term neonates (2).Possible pathophysiological mechanisms have been proposed to be multifactorial. Some possible pathophysiological mechanisms are due to congenital defect of musculature of the perforation site (3,4). Hypoxemia, birth asphyxia , hemodynamic instabilities, use of indomethacin are some possible causes. Our baby at birth did not have any hypoxic injury. Spontaneous intestinal perforation has been reported in the baby who was treated with injectable indomethacin for hs(hemodynamically significant) PDA(5).Patent ductus arteriosus is one of the risk factor for spontaneous intestinal perforation(7) Our baby was given injectable paracetamol for hs PDA. The risk of SIP is unlikely with paracetamol. Gastrointestinal anomalies like intestinal malrotation and meckel's diverticulum have been associated with spontaneous intestinal perforation (6).

In our case ultrasonographic and radiological imaging was not suggestive of any malformation.

Some of the blood parameters associated with poor outcome are leukopenia and thrombocytopenia (6).This baby was having leucocytosis and normal platelet counts.

Many of the clinical risk factors and clinical manifestation of NEC and SIP (spontaneous intestinal perforations) are common (9). Abdominal erythema, abdominal tenderness, severe metabolic acidosis , thrombocytopenia are common in NEC and uncommon with

spontaneous intestinal perforation. In our baby there was no abdominal wall erythema , tenderness. Platelet counts and CRP level was normal in our baby. Based on clinical and laboratory parameters and outcome of the baby; it was likely a case of spontaneous intestinal perforation. Surgical laparotomy is mode of treatment currently used for management of SIP. Spontaneous closure with conservative management has been reported by some with successful results recently. Spontaneous closure of pneumoperitoneum is reported by Chang-Yo-Yang et. al (8) from a single centre from china.

This baby was managed conservatively. Conservative management approach can be an alternative to currently surgical management of choice.

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