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Case Report Open Access

Preterm with Abdominal Ascites

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Abstract

A 29 weeks gestation preterm female baby born to 24 years old Primi mother by spontaneous vaginal delivery. Mother Blood group A positive, HBsAg Negative, HIV negative. Ultrasound scan done at 20 weeks of gestation was normal. No further scan was done. Born by spontaneous vaginal delivery, cephalic presentation, no meconium stained amniotic fluid present. Baby did not cried at birth and was floppy with APGAR score of 5 and 7 at 1 and 5 minute respectively. At birth abdomen was distended. Due to poor respiratory effort she was intubated in labor room.

Keywords: Preterm birth; Abdominal ascites

Introduction

A female baby of 29 week gestation preterm born to 24 year old Primi mother by spontaneous vaginal delivery. Mother Blood group A positive, HBsAg Negative, HIV negative. Ultrasound scan done at 20 weeks of gestation was normal. No further scan was done. Born by spontaneous vaginal delivery, cephalic presentation, no meconium stained amniotic fluid present. Baby did not cried at birth and was floppy with APGAR score of 5 and 7 at 1 and 5 minute respectively. At birth abdomen was distended. Due to poor respiratory effort she was intubated in labor room.

Vital signs

- Temp. 36.3 degree C
- HR 148/min, RR 56 breaths /min
- BP 50/32 (27) mmHg
- Birth weight 1.7 kg
- Length 45 cm
- HC 30 cm
- Normal facies, Nares patent, normal eyes, palate patent, normal ears.
- Respiratory system- subcostal retractions present
- Bilateral air entry equal
- Cardiovascular system- S1S2 heard normal. No murmur
- Abdomen- grossly distended abdomen, dilated visible veins over abdomen, Firm, ascites present
- Anus- patent
- Spine- normal

Case Report

Baby was connected to mechanical ventilator with AC + VG mode and 1 dose of surfactant was given endotracheally. Orogastric tube was placed. X ray chest with abdomen was done which was suggestive of free gas in the abdomen (Figure 1). Blood specimens sent for complete blood count and blood culture. Inj. Piperacillin-Tazobactum was administered. She was kept NPO and started on total parenteral nutrition. In view of low BP dobutamine infusion was started. Pediatric surgery consultation done, abdominal drain was placed, approximately 150 ml of meconium stained fluid drained. Our surgical strategy for meconium peritonitis was abdominal drainage procedure, enterostomy and elective stoma closure. After 24 hours of abdominal drainage exploratory laparotomy was done, perforation was present at ileum. Enterostomy was done. Orogastric feeds were started after 5 days of surgery and increased gradually. Full feeds were reached in 8 days.

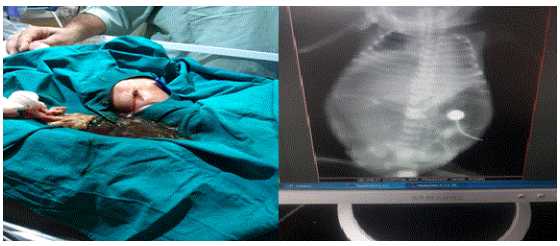

Figure 1: Clinical image with x-ray of abdomen.

Laboratory findings

- Hemoglobin- 14.4 g/dL
- Total leucocyte count - 18300 /cumm
- Her blood culture, Renal function test and Liver function test were normal.
- 2D ECHO was normal.
- Newborn screening for cystic fibrosis was normal.

Differential diagnosis

- Chylous ascites
- Congenital nephrosis
- Congenital lymphatic obstruction
- Hepatitis
- Intrahepatic cyst or tumour
- Imperforate anus
- Spontaneous common bile duct perforation
- Perforation of Meckel diverticulum
- Mucopolysaccaridosis type VII.

Discussion

Meconium peritonitis is aseptic chemical peritonitis which result due to intrauterine perforation of the gut in utero and exudation of meconium into the peritoneal cavity. The most common causes are intestinal atresia, meconium plugs, volvulus and cystic fibrosis. Meconium peritonitis leads to intense inflammation which results in calcification along the surface of bowel and peritoneum. The prevalence of meconium peritonitis is around 1 in 35000 [1] with a slight male predominance and a survival of 50%. The diagnosis of meconium peritonitis can be made with Ultrasound or by abdominal x-ray of neonates, with varied images, altering according to the etiology of the obstruction/perforation [2]. In general, at least four types of meconium peritonitis are recognized, to know: fibro-adhesive (dense mass with calcium deposits caused by chemical reaction), cystic, generalized and healed.

Meconium is a complex mixture of bile salts, cell debris and proteins. Spillage of these constituents has shown to activate immune cells including macrophages [3,4]. Macrophages infilterate into the peritonium and participate in a range of cellular functions, including phagocytosis, release of chemical mediators and antibody dependent cell mediated cytotoxicity [5].

Experimental animal studies have demonstrated that TNF α production by macrophages is significantly increased I response to meconium stimulation [5]. Exaggerated production of chemical mediators including TNF α enhances fibrin deposition and severe intraabdominal adhesion, resulting in short bowel syndrome due to massive resection or polysurgery. Moreover, if sealing of the perforation does not occur, huge abdominal cyst formation and progressive pro- inflammatory cytokine reaction with ascites collection may cause fetal cardiac insufficiency, preterm labor and a poor general condition after birth.

The poor prognosis can be due to some complications like: development of huge formations of abdominal cysts that may suffer rupture; the formation of ascites that can cause fetal heart failure and the development of sepsis with rapid evolution due to frequent bacterial colonization after 72 hours of birth [6,7].

Conclusion

Meconium peritonitis is a rare condition with many complications and low survival, which requires specific therapy for each etiology.

Therefore, meconium peritonitis should always be suspected in neonates when the Ultrasound and x-rays present with abdominal ascites and perforation. All these babies should be screened to detect cystic fibrosis, because the association with meconium peritonitis is frequent.

References

1. Berrocal T, Lamas M, Gutieerrez J, Torres I, Prieto C, et al. (1999) Congenital anomalies of the small intestine, colon, and rectum. Radiographics 19:1219–1236.
2. de Amorim MMR, Vilela PC, Santos LC, Neto GHF, Cursino O, et al. (1999) Peritonite meconial como diagnóstico diferencial de ascite fetal: relato de caso. RBGO 21: 353.
3. Shyu MK, Chen CD, Hsieh FJ, Yau KI, Lin GJ, et al. (1994) Intrauterine intervention in a case of recurrent meconium peritonitis." Prenat Diagn 14: 993-995.
4. Rubin BK, Tomkiewicz RP, Patrinos ME, Easa D (1996) The surface and transport properties of meconium and reconstituted meconium solutions. Pediar Res 40 (1996): 834-838.
5. Ramin KD, Leveno KJ, Kelly MA, Carmody TJ (1996) Amniotic fluid meconium: A fetal environmental hazard. Obstet Gynecol 87: 181-184.
6. Dias R, Dave N, Garasia M (2016) Meconium peritonitis: A rare neonatal surgical emergency. Indian J Anaesth 60: 364-366.
7. Chandrasekaran N, Benardete D, Cariello L, Meraz D (2017) Prenatal sonographic diagnosis of meconium peritonitis from duodenal atresia. BMJ Case Rep: bcr2017219208.