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CASE REPORTS

POSITIVE COPROCULTURE IN NEWBORN

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ABSTRACT

Campylobacter infection is one of the most frequent causes of gastroenteritis and usually self-limited; however, neonatal infection is rare and potentially severe. We describe a case of a newborn with Campylobacter jejuni spp isolation in stool culture. On the second day of life, he presented with bloody stools, good general condition and good tolerance to a breast milk diet. The mother had non-bloody diarrhea starting two days before delivery up to 1 day postpartum and the brother had non-bloody diarrhea. Laboratory evaluation, rotavirus and adenovirus screening were negative, leukocyte and occult blood faecal screening were positive with Campylobacter jejuni spp isolated from stool culture. The newborn was given an intravenous antibiotic and the disease presented a good clinical evolution without complications. Little is known about Campylobacter gastroenteritis in neonates, but it is essential to intervene promptly due to its potential complications.

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Introduction

Campylobacter gastroenteritis is a frequent cause of diarrhea often clinically indistinguishable from other viral or bacterial gastroenteritis. It is usually self-limited, but this infection may be lethal to patients with altered immune status and neonates.[1] Campylobacteriosis of newborns is rare and not a well-known clinical entity. Transmission can be transplacental or neonatal and outbreaks in nurseries due to nosocomial spread have been reported.[2,3,4] C. jejuni infections in mother may be asymptomatic or can result in abortion, stillbirth, premature delivery or neonatal infection with sepsis and meningitis. Neonatal infection with C. jejuni may cause bloody diarrhea.[3] Stool culture is the gold standard for the identification of Campylobacter species. Species-level identification is usually not necessary for clinical management.[5] Isolation of Campylobacter from blood is uncommon and the isolation rate for blood culture/ stool culture is 0.008.[2] Despite its rarity, it is vital to know the best way to intervene in an infection by Campylobacter in neonates, since the prognosis depends on appropriate antimicrobial therapy.[1] During our research on this subject, we found little bibliography, so we decided to share our case and mode of action which had a positive outcome.

Case Report

Pregnancy was uneventful, prenatal maternal laboratory findings and fetal ultrasounds were described as normal. A female newborn with a gestational age of 40 weeks and a weight of 3340 g (adequate weight for gestational age) was delivered by spontaneous labour. Apgar score was nine at 1 minute and ten at 5 minutes. Passage of meconium was without delay (<48 hours after birth).

On the second day of life, there was a change in faecal appearance with the presence of blood, without fever or vomiting. Clinical examination with a good general condition, without intestinal masses, anal injuries or other alterations. The newborn was only on breast milk diet with good tolerance.

Laboratory tests were normal: white blood cell 15900/µL, neutrophils 68.3%, lymphocytes 20.9%, hemoglobin 20.5 g/dL, platelets 223000/µL, C-reactive protein 0.5 mg/dL and procalcitonin 0.11 ng/mL.

Due to the persistence of the blood in faeces, we did leukocyte and occult blood faecal screening which were positive, rotavirus and adenovirus screening which were negative and stool cultures.

The mother, from a rural area, had non-bloody diarrhea two days before delivery up to 1 day postpartum and the brother had non-bloody diarrhea.

On the fourth day of life, the newborn was in good condition, with normalised faeces and proper weight gain on a breastfeeding regimen and he was discharged from the hospital, with pendent microbiologic results

At 11th day of life the results of stool culture were available and positive for Campylobacter jejuni spp. On this day, blood culture, new stool cultures and laboratory tests were performed. Although clinically asymptomatic and without changes in laboratory tests, cefotaxime intravenous, 50 mg/kg every 8h for seven days, was prescribed. The parents and the brother were treated with azithromycin for three days. During the treatment, the newborn was in good condition with normal feces. Campylobacter jejuni spp was isolated again from stool culture, but blood culture was negative and he was discharged at the end of treatment.

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He remained asymptomatic, with good development, proper weight gain on a breastfeeding diet and on 32nd day of life we repeated stool culture which was negative. The case that we presented was uneventful. In this patient, the prognosis was very good and he was discharged from consultation in our hospital.

Discussion

Campylobacter, found globally, is among the most common causes of human intestinal infection.[3] Evidence suggests that there has been a rise in the overall incidence of campylobacteriosis in the past decade, including in Europe.[6] Perinatal Campylobacter infection is rare but has been described.[2,4,7,8,9]

Immunosuppressed children can have a longstanding or severe course. Septicemia in newborns and immunocompromised hosts have a poor prognosis, with an estimated mortality rate of 30-40%. Additional prognosis is based upon the secondary sequelae that may develop.[3]

We describe a case of a newborn with Campylobacter jejuni spp isolation in stool culture after showing bloody stools, however the newborn was already asymptomatic when we got the results. Taking into account the patient's age and the risk of serious illness, it was decided to treat but we found some difficulties after the decision was taken.

Azithromycin and erythromycin are the preferred choices for campylobacteriosis when the treatment implies antibiotic therapy.[3,6,10,11,12] This approach is widely used in adults and pediatrics but raised many questions in the presented case due to the patient's young age.

We found some case reports of neonatal gastroenteritis that were also treated with erythromycin, but they were written in the 80s and we didn't find consensus on the administration method (per os or intravenous) and on the therapeutic dose.[2,7,8,9]

We decided to exclude erythromycin and azithromycin as a possible therapy because, in neonates, these antibiotics are listed on the Key Potentially Inappropriate Drugs in Pediatrics (KIDs) list and should be avoided due to the risk of complications like hypertrophic pyloric stenosis (particularly when administered to children under two weeks of age), unless treating Bordetella pertussis (azithromycin) or Chlamydia trachomatis pneumonia (azithromycin and erythromycin).[13,14]

Among the bibliography, we found the suggestion to medicate with third-generation cephalosporins, antibiotics used safely in this age group and we chose to accept this approach.[1,15,16]

With this case report we share our experience and a possible approach to an infection well known at other ages, but almost unknown in newborns. This disease in neonates can resemble the same condition seen in older patients but more infected newborns must be studied before the risk of severe gastroenteritis, bacteremic complications or secondary spread in nurseries can be determined.[7]

Compliance with Ethical Standards

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