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Transmission of SARS-CoV-2 to premature twins from an asymptomatic mother

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Abstract

Objectives: The incidence of vertically transmitted severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) could be higher than published. We feel that cases of SARS-CoV-2 vertical transmission are under-reported.

Case presentation: We report a case of SARS-CoV-2 in premature monochorionic monoamniotic twins born by caesarean section to an asymptomatic SARS-CoV-2 positive mother.

Conclusions: This case supports the potential for intra-uterine transmission of SARS-CoV-2 as previously reported. The incidence of SARS-CoV-2 vertical transmission from reported cases is low; however this may be due to the difficulty disproving horizontal transmission or under-reporting of cases.

Keywords: newborn; SARS-CoV-2; vertical transmission.

Introduction

Since the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), concerns abound regarding the likelihood of transmission of the virus from infected mothers to the foetus. Published reports have shown cases of newborns acquiring SARS-CoV-2 from infected mothers but the incidence is low [1–3]. The difficulty disproving horizontal transmission, under-reporting of cases and not routinely screening all mothers admitted for delivery and their newborn babies could contribute to the reported low incidence of vertical transmission.

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Case presentation

We describe an interesting case of transmission of SARS-CoV-2 in a set of premature twins. They were monochorionic monoamniotic and received laser ablation therapy for twin to twin transfusion at 23 weeks gestation. The mother received steroids at 24 and 29 weeks gestation and magnesium sulphate at 29 weeks. Additionally, she was treated for gestational diabetes with insulin. Mother initially presented with premature rupture of membranes and vaginal bleeding at 29 weeks and 6 days gestation. She never had any symptoms of SARS-CoV-2 but her routine admission nasal swab tested positive for SARS-CoV-2 by reverse transcriptase polymerase chain reaction (RT-PCR), two subsequent swabs were negative (second and third day after positive swabs). Premature rupture of membrane was ruled out and she was later discharged home but re-admitted with abdominal tightening at 30 weeks and 3 days gestation. The twins were delivered via emergency cesarean section two days after admission, at 30 weeks and 5 days gestation, due to antepartum haemorrhage. Both twins were born in good condition and were commenced on continuous positive airway pressure for mild respiratory distress. There was no huge weight discrepancies between them, twin 1 weighed 1.54 kg while twin 2 weighed 1.39 kg. The babies were immediately transferred to neonatal unit and never had contact with their mother during the first week of life. They had a partial septic screen and were commenced on empirical intravenous antibiotics which were discontinued after blood cultures were negative at 48 h. Nasopharyngeal swabs test by RT-PCR from both twins taken within 12 h of birth were positive for SARS-CoV-2. Repeat tests on day 5 were negative but another test on day 7 was again positive in both twins. The twins were successfully weaned to nasal cannula low flow oxygen on day 4. Chest X-ray for twin one was unremarkable while twin two was in keeping with very mild respiratory distress syndrome. Both twins remained stable and never had temperature instability. We assumed the non-invasive respiratory support was due to respiratory distress syndrome of prematurity and difficult to conclude if due to SARS-CoV-2. Of note, all infection prevention and control measures especially with regards to SARS-CoV-2 were strictly carried out during admission of the mother, delivery of the twins and during neonatal care.

Discussion

This case supports the potential for intrauterine transmission of SARS-CoV-2 as previously reported [1, 4]. The incidence of SARS-CoV-2 vertical transmission from reported cases is low; however, this may be due to the difficulty disproving horizontal transmission or under-reporting of cases [3]. Moreover, asymptomatic mothers and their babies may not have screening for SARS-CoV-2. In our case, the mother was asymptomatic but was incidentally diagnosed from routine swabs on admission in line with hospital policy. Routine screening of all mothers admitted for delivery and their new born babies may not be feasible in some countries due to resource constraints or high community spread but we recommend doing so where possible. Although we cannot confidently confirm that our case was due to vertical transmission, the incidence of vertical transmission of SARS-CoV-2 could be higher than reported and publication of cases should be encouraged.

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