

Placenta histological features in three cases of supposed SARS-CoV-2 vertical transmissions in second and third trimester of pregnancy

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DOI: 10.36129/jog.2022.S65

Objective. We described three cases of SARS-CoV-2 positive new-borns with both symptomatic and asymptomatic mothers.

Materials and Methods. Placentas were analyzed in the pathology department and showed chronic histiocytic intervillitis with presence of CD68⁺ macrophages, syncytiotrophoblast necrosis and positivity of the syncytiotrophoblast for SARS-CoV-2 antigen or RNA.

Results. The first case dates back to March 2020, when a symptomatic COVID-19 positive patient gave birth to a healthy neonate at 37.6 weeks of gestation. Skin to skin contact was not permitted but breastfeeding with a face mask was allowed. The newborn, that remained asymptomatic throughout the entire hospital stay, resulted positive to SARS-CoV-2 immediately after birth, at 24 hours of life and after 7 days. The second was delivered at 35.1 weeks of gestation by caesarean section

for non-reassuring fetal status. The mother presented with fever, cough and a positive COVID-19 swab test. The newborn resulted positive on day 7, despite not having contact with the mother. No neonatal complications were observed. The third positive mother was admitted asymptomatic to the obstetric department in September 2021 due to preterm premature rupture of membranes at 20 weeks of gestation in a high-risk twin pregnancy. At 21.4 weeks of gestation her clinical conditions deteriorated, and she delivered two stillborn fetuses: SARS-CoV-2 was detected in all tissues samples. The lung of the first fetus only showed interstitial pneumonia features.

Conclusions. We detected SARS-CoV-2 in placentas of both the second and third trimester, implying the passage of the virus through the placenta to the fetuses as the presence of SARS-CoV-2 RNA was demonstrated in swabs and foetal tissues.