

# Letters to the Editor

## Case Report: Second-Trimester Maternal COVID-19 Infection and Tetralogy of Fallot

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**To the Editor:** A 28-year-old woman delivered a male infant at 39 weeks' gestation after induction of labor. The infant had poor muscle tone and skin color at birth, with no respiratory effort or palpable pulses. Ventilation was initiated, and the pulse became evident with a heart rate of 120 beats per minute and oxygen saturation of 60%. The infant was intubated and stabilized with Apgar scores of 2, 3, and 4 at one, five, and 10 minutes, respectively. The infant was emergently transferred to the nearest tertiary care center and diagnosed with tetralogy of Fallot despite normal prenatal sonograms from 12 to 38 weeks' gestation.

The mother's medical history included diet-controlled gestational diabetes mellitus, obesity, and mild third-trimester preeclampsia. At 18 weeks and four days' gestation, the mother experienced mild congestion and cough with a loss of smell and taste sensation and was diagnosed with COVID-19 after polymerase chain reaction testing. The mother's second-trimester COVID-19 infection and subsequent diagnosis of tetralogy of Fallot of her newborn raise interesting questions because of the normal fetal heart morphology on routine ultrasonography.<sup>1</sup>

It is important to consider the possible effects of COVID-19 infection on fetal development as we learn more about the SARS-CoV-2 virus and

its long-term consequences.<sup>2</sup> COVID-19 has already been associated with other childhood cardiac pathologies such as myocarditis, heart failure, and arrhythmias.<sup>3</sup> However, it has not been documented as a cause of congenital heart abnormalities. Previous studies have shown that intrapartum COVID-19 infections can increase the risk of preterm birth, preeclampsia, cesarean delivery, and perinatal death.<sup>4</sup> The outcome in this case report could be a coincidence; however, physicians may want to monitor fetal development more closely in patients who contract COVID-19 during pregnancy.<sup>2</sup>

There is an urgent need to further study and subsequently promote COVID-19 vaccines for patients of childbearing potential while we wait for additional evidence that maternal COVID-19 may be associated with fetal congenital heart disease, as demonstrated in this case report.

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## References

1. Tongsong T, Sittiwangkul R, Chanprapaph P, et al. Prenatal sonographic diagnosis of tetralogy of fallot. *J Clin Ultrasound*. 2005;33(8):427-431.
2. Khan MSI, Nabeka H, Akbar SMF, et al. Risk of congenital birth defects during COVID-19 pandemic: draw attention to the physicians and policymakers. *J Glob Health*. 2020; 10(2):020378.
3. Alsaied T, Aboulhosn JA, Cotts TB, et al. Coronavirus disease 2019 (COVID-19) pandemic implications in pediatric and adult congenital heart disease. *J Am Heart Assoc*. 2020;9(12):e017224.
4. Di Mascio D, Khalil A, Saccone G, et al. Outcome of coronavirus spectrum infections (SARS, MERS, COVID-19) during pregnancy: a systematic review and meta-analysis. *Am J Obstet Gynecol MFM*. 2020;2(2):100107. ■

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