Letters to the Editor

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

Published online August 9, 2021.

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.[1]

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.[2] COVID-19 has already been associated with other childhood cardiac pathologies such as myocarditis, heart failure, and arrhythmias.[3] However, it has not been documented as a cause of congenital heart abnormalities. Previous studies have shown that COVID-19 infections during pregnancy can increase the risk of preterm birth, preeclampsia, cesarean delivery, and perinatal death.[4] 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.[2]

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.

Shiv Dalla, MS
Wichita, Kan.
Email: s113d418@kumc.edu

Michael Rausch, MD
Wichita, Kan.

Rick Kellerman, MD
Wichita, Kan.

Author disclosure: No relevant financial affiliations.

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.

Administering COVID-19 Vaccines During Preparticipation Physical Examinations

Published online September 15, 2021.

To the Editor: During the SARS-CoV-2 pandemic, youth and interscholastic sports contacts have led to multiple outbreaks in and across communities. Breaking this chain of transmission is an essential public health measure for stopping the pandemic. Representatives from 12 medical and sports organizations, including the American Academy of Family Physicians, the American Academy of Pediatrics, and the American Medical Society for Sports Medicine (AMSSM), worked together with the White House COVID-19 Response Team to develop a

Email letter submissions to afplet@aafp.org. Letters should be fewer than 400 words and limited to six references, one table or figure, and three authors. Letters submitted for publication in *AFP* must not be submitted to any other publication. Letters may be edited to meet style and space requirements.

This series is coordinated by Kenny Lin, MD, MPH, deputy editor.

consensus statement detailing the importance of COVID-19 vaccination for all athletes who are eligible to receive the vaccine and who do not have contraindications as an important tool to keeping "…students in the classroom, athletes in the game, and athletic teams on the field, while protecting our communities."[1] The representatives recognized the critical role of primary care physicians in improving vaccine acceptance. The preparticipation physical examination (PPE) provides an excellent opportunity to promote or administer a COVID-19 vaccine.

Last year, the AMSSM published interim guidance on PPE during the SARS-CoV-2 pandemic,[2] which was summarized in an *American Family Physician* Community Blog.[3] In August 2021, they released updated interim guidance to address the administration of the COVID-19 vaccine during the PPE and to discuss vaccine hesitancy, timing, and guidance on specific athlete populations (including athletes who are immunocompromised and individuals with other medical conditions).[4] The guidance provides information about reducing disparities in outcomes in medically underserved and marginalized populations, the rare complication of myocarditis following vaccination, and other possible vaccine-related adverse effects. Although the medical home is considered the best place for a PPE, the guidance also addresses the possibility of incorporating a mass vaccination program with a mass PPE program. However, the vaccine should not be delayed until after the sports or competition season, and exercise around the time of vaccination may improve immune function and response to the vaccine.

Physicians are encouraged to use the updated COVID medical history form and COVID physical evaluation form when performing PPEs.[5]

Jason M. Matuszak, MD
Amherst, N.Y.
Email: matuszakjason@gmail.com

Author disclosure: No relevant financial affiliations.

References

1. American Academy of Family Physicians. Sports and medical organizations encourage COVID-19 vaccine conversations be part of all sports physicals. August 3, 2021. Accessed August 25, 2021. https://www.aafp.org/news/media-center/statements/covid-vaccine-sports-physicals.html
2. Diamond AB, Narducci DM, Roberts WO, et al.; American Medical Society for Sports Medicine. Interim guidance on the preparticipation physical exam for athletes during the SARS-CoV-2 pandemic. Accessed August 25, 2021. https://journals.lww.com/cjsportsmed/Documents/Interim%20Guidance%20PPE%20COVID.pdf
3. Lin K. *American Family Physician* Community Blog. Preparticipation physical exam and return to sports during the COVID-19 pandemic. September 14, 2020. Accessed August 25, 2021. https://afpjournal.blogspot.com/2020/09/preparticipation-physical-exam-and.html
4. Narducci DM, Diamond AB, Bernhardt DT, et al.; American Medical Society for Sports Medicine. COVID vaccination in athletes and updated interim guidance on the preparticipation physical examination during the SARS-Cov2 pandemic. Accessed August 25, 2021. https://www.amssm.org/Content/pdf-files/COVID19/Interim_COVID_vaccines-8-4-2021.pdf
5. American Academy of Pediatrics. Preparticipation physical evaluation (PPE). Accessed August 25, 2021. https://www.aap.org/en/patient-care/preparticipation-physical-evaluation/

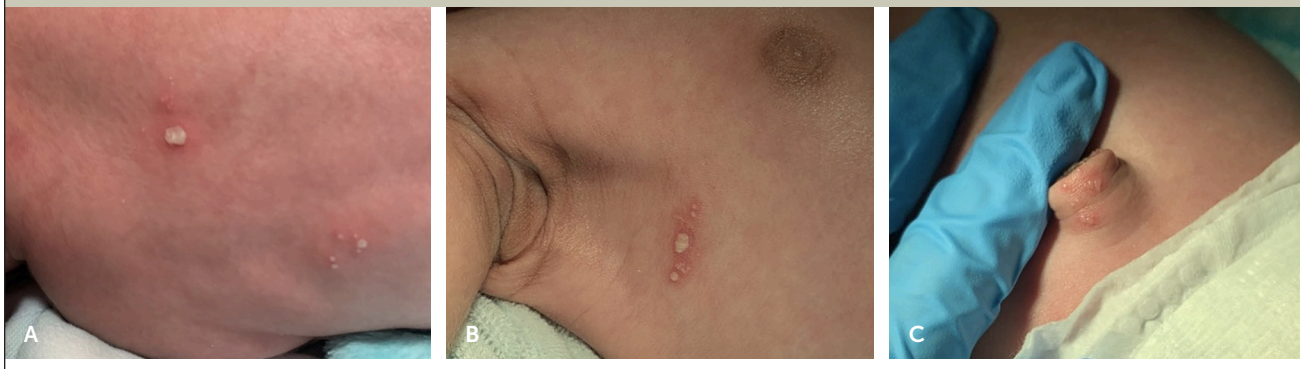
Case Report: Disseminated HSV Infection in a Well-Appearing Neonate

To the Editor: A 12-day-old infant with no significant birth history presented with several 1-mm grouped pustular lesions on erythematous bases on the back and right axilla, and vesicular lestions on the umbilicus *(Figure 1)*. The patient looked well, and vital signs were within normal limits. There were no other symptoms or parental concerns. A physical examination was otherwise unremarkable. Complete blood count, metabolic panel, and urine analysis results were within normal ranges. The erythrocyte sedimentation rate was mildly elevated at 26 mm per hr (reference range = 0 to 10 mm per hr). Swabs were collected for a bacterial culture and herpes simplex virus (HSV) polymerase chain reaction (PCR). A Tzanck test was performed, which found multinucleated giant cells and viral cytopathic effect. A lumbar puncture was performed, and cerebrospinal fluid studies showed a mildly elevated protein of 65 mg per dL (reference range = 15 to 45 mg per dL) with no pleocytosis. The patient was admitted to the hospital and administered empiric ampicillin, ceftazidime (Fortaz), and acyclovir.

Urine, blood, and lesion cultures had no bacterial growth after 48 hours. The HSV PCR of skin and plasma was positive for HSV-1. HSV-1 and HSV-2 were not detected in the PCR of cerebrospinal fluid. The patient completed a 14-day course of intravenous acyclovir and was discharged with oral suppression therapy.

Neonatal HSV infections are classified into three subtypes: localized with skin, eye, or mouth disease; localized central nervous system disease; and disseminated multi-organ involvement.[1] Skin, eye, or mouth disease presents at 10 to 11 days after birth with groups of discrete vesicles

FIGURE 1



Rash consisting of multiple grouped pustular lesions on erythematous bases located on the *(A)* back and *(B)* right axilla, and *(C)* vesicular lesions on the umbilicus.

on erythematous bases. These lesions coalesce into clusters, differentiating this infection from erythema toxicum neonatorum.[2]

A skin examination revealed grouped vesicles on the umbilicus, which are morphologically different from the more typical HSV lesions of grouped pustules on an erythematous base found in other areas. Early diagnosis of neonatal HSV and adequate antiviral treatment have lowered the percentage of patients with a developmental delay because of skin, eye, or mouth disease from 25% to less than 2%.[3]

Tzanck smear with Giemsa stain is an inexpensive test for rapid detection of HSV infection. Although the Tzanck test has lower sensitivity than PCR, a positive Tzanck smear with multinucleated giant cells and viral cytopathic changes is 100% specific for HSV infection.[4] For this patient, a Tzanck smear expedited the initiation of antiviral therapy before PCR results were available.

The authors thank Dr. Jeremy D. Jackson for oversight and comment on the Letter to the Editor.

Phuong B. Le, MD
Jackson, Miss.
Email: ble2@uthsc.edu

Nancye McCowan, MD
Jackson, Miss.

Ross L. Pearlman, MD
Jackson, Miss.

Author disclosure: No relevant financial affiliations.

References

1. Harris JB, Holmes AP. Neonatal herpes simplex viral infections and acyclovir: an update. *J Pediatr Pharmacol Ther.* 2017;22(2):88-93.
2. Thompson C, Whitley R. Neonatal herpes simplex virus infections: where are we now? *Adv Exp Med Biol.* 2011; 697:221-230.
3. Kimberlin DW, Lin CY, Jacobs RF, et al.; National Institute of Allergy and Infectious Diseases Collaborative Antiviral Study Group. Natural history of neonatal herpes simplex virus infections in the acyclovir era. *Pediatrics.* 2001; 108(2):223-229.
4. Ozcan A, Senol M, Saglam H, et al. Comparison of the Tzanck test and polymerase chain reaction in the diagnosis of cutaneous herpes simplex and varicella zoster virus infections. *Int J Dermatol.* 2007;46(11):1177-1179.

Previous ECG Criteria (Including STEMI Criteria) Overlook Too Many Acute MIs Due to Acute Coronary Occlusion

Original Article: Acute Chest Pain in Adults: Outpatient Evaluation

Issue Date: December 15, 2020

See additional reader comments at: https://www.aafp.org/afp/2020/1215/p721.html

To the Editor: The article by McConaghy and colleagues does not address the importance of the initial electrocardiogram (ECG). The article addresses the assessment and management of patients who present to a primary care setting for chest pain; however, the first word in the title of this article is "acute," which indicates the very different concern of assessing the patient for acute coronary syndrome (ACS). Assuming the patient is hemodynamically stable, the most important initial assessment tool for a patient with acute chest pain is the first ECG, performed as soon as possible after the patient presents for evaluation. Although most patients with true "acute" chest pain present to an emergency department—clinicians working in primary care settings will, on occasion, be the first to evaluate a patient with true ACS, and they must be ready for the occasional patient who presents to an ambulatory setting with an acutely evolving event.

The article states that ECG findings on this initial ECG in the office that "…increase the likelihood of ACS include ST segment elevation,

new-onset left bundle branch block, presence of Q waves, or new T-wave inversions." The single reference cited for this statement was written in 1983 and is outdated.[1,2] Physicians must look for acute ECG changes of *any* kind that temporally occur in association with a history of new or recent chest pain. While impossible to fit into a single paragraph the constellation of ECG findings that suggest a patient with a history of "acute" chest pain requires immediate hospitalization to promptly rule out an acute event—the concept is to assess "patterns of leads," including ST segment depression, reciprocal changes in other lead areas, and a series of other ECG findings that, taken together, suggest recent or acute coronary disease.[1,2] Limiting oneself to looking for ST elevation, new T-wave inversions, left bundle branch block, and/or Q waves misses a significant proportion (if not the majority) of patients with "acute" chest pain who may have ACS (including acute or recent coronary occlusion) and who need immediate evaluation.[1,2]

Ken Grauer, MD
Gainesville, Fla.
Email: ekgpress@mac.com

Author disclosure: No relevant financial affiliations.

References

1. Aslanger EK, Yıldırımtürk Ö, Şimşek B, et al. Diagnostic accuracy of electrocardiogram for acute coronary occlusion resulting in myocardial infarction (DIFOCCULT Study). *Int J Cardiol Heart Vasc*. 2020;30:100603.
2. Dr. Smith's ECG Blog. OMI-NOMI paradigm established as better than STEMI-NSTEMI with new article. July 31, 2020. Accessed July 2, 2021. https://hqmeded-ecg.blogspot.com/2020/07/omi-nomi-paradigm-established-as-better.html

In Reply: We appreciate Dr. Grauer's comments. Our article intended to provide an overview of the most common causes of chest pain. Although a minority of patients presenting with chest pain to primary care clinics have a life-threatening cause,[1] ruling out acute coronary syndrome (ACS) is essential. Twelve-lead electrocardiography (ECG) is the most critical initial outpatient diagnostic test to evaluate patients presenting with chest pain. As indicated in Dr. Grauer's letter, several ECG patterns in addition to those we highlighted may be indicative of ACS, including reciprocal ST segment changes and ST segment depression. Another ECG finding that could be important is Wellens syndrome, which is a biphasic or deeply inverted T-wave in the precordial leads (commonly V2-V3).[2] Wellens syndrome may indicate critical stenosis of the left anterior descending artery.

The article by Aslanger, et al., referenced in Dr. Grauer's letter to the editor, highlights that cases of acute coronary occlusion (ACO) are missed using the classic definition of ST segment elevation.[3] The article notes that "…minor STE [ST-segment elevation] not fulfilling STEMI [ST-segment elevation myocardial infarction] criteria, STE disproportionate to preceding QRS, unusual patterns with contiguous leads showing opposite ST deviations and some patterns not showing STE at all" may correlate with ACO.[3] Therefore, several ECG changes may indicate ACO. Although identifying more subtle ECG changes is important, the practical utility of that approach in patients presenting to the outpatient primary care setting is unclear. In the review by Aslanger, et al., the ECGs were reviewed by two cardiologists more experienced in interpreting ECGs than the average physician. The authors of the study note that "…ECG classifications may change significantly according to the experience of ECG interpreters. An obstacle to the widespread application of the ACOMI [acute coronary occlusion myocardial infarction]/non-ACOMI concept is its dependence on better ECG interpreting skills, which may be hard to achieve in the real clinical world, but this is an unavoidable necessary step for improvement."[3] Widening the criteria for ECG changes that suggest a cardiac cause of acute chest pain will likely increase the sensitivity of identifying ACO but may reduce specificity and increase false positives.

John R. McConaghy, MD
Columbus, Ohio
Email: john.mcconaghy@osumc.edu

Malvika Sharma, MD
Columbus, Ohio

Hiten Patel, MD
Columbus, Ohio

Author disclosure: No relevant financial affiliations.

References

1. Hoorweg BB, Willemsen RT, Cleef LE, et al. Frequency of chest pain in primary care, diagnostic tests performed and final diagnoses. *Heart*. 2017;103(21):1727-1732.
2. Rhinehardt J, Brady WJ, Perron AD, et al. Electrocardiographic manifestations of Wellens' syndrome. *Am J Emerg Med*. 2002;20(7):638-643.
3. Aslanger EK, Yıldırımtürk Ö, Şimşek B, et al. Diagnostic accuracy of electrocardiogram for acute coronary occlusion resulting in myocardial infarction (DIFOCCULT Study). *Int J Cardiol Heart Vasc*. 2020;30:100603.

Management of Syphilis in People with HIV Infection

Original Article: HIV Infection in Adults: Initial Management

Issue Date: April 1, 2021

Available at: https://www.aafp.org/afp/2021/0401/p407.html

To the Editor: The article by Drs. Goldschmidt and Chu comprehensively covered the initial management of adults with HIV infection. There is a difference in the management of syphilis in people with HIV infection that may be beneficial for readers to note. The number of primary and secondary syphilis cases reported in the United States has been increasing, reaching 35,063 cases (10.8 cases per 100,000 population) in 2018, which is a 71% increase from 2014.[1] The recommended treatment for primary and secondary syphilis is a single dose of intramuscular penicillin G benzathine, 2.4 million units, regardless of HIV infection. Clinical and serologic responses to treatment are similar except for a slower serologic response in people with HIV infection.[2] However, follow-up management of syphilis in people with HIV infection differs from that in people without HIV infection.[3]

The Centers for Disease Control and Prevention (CDC), the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America issued a clinical practice guideline for opportunistic infections and sexually transmitted infections, including syphilis.[4] The guideline recommends that clinicians clinically and serologically reevaluate people with HIV infection at three, six, nine, 12, and 24 months after treatment for primary or secondary syphilis instead of at follow-up evaluations at six and 12 months after therapy in those without HIV infection.

Kento Sonoda, MD, AAHIVS
Pittsburgh, Pa.
Email: kento.sonoda.md@gmail.com

Author disclosure: No relevant financial affiliations.

References

1. Centers for Disease Control and Prevention. Sexually transmitted disease surveillance 2018. October 2019. Accessed August 7, 2021. https://www.cdc.gov/std/stats18/STDSurveillance2018-full-report.pdf
2. Rolfs RT, Joesoef MR, Hendershot EF, et al. A randomized trial of enhanced therapy for early syphilis in patients with and without human immunodeficiency virus infection. The Syphilis and HIV Study Group. *N Engl J Med*. 1997;337(5):307-314.
3. Workowski KA, Bolan GA; Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015 [published correction appears in *MMWR Recomm Rep*. 2015;64(33):924]. *MMWR Recomm Rep*. 2015;64(RR-03):1-137.
4. Panel on Opportunistic Infections in Adults and Adolescents with HIV. Guidelines for the prevention and treatment of opportunistic infections in adults and adolescents with HIV: recommendations from the Centers for Disease Control and Prevention, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. Accessed August 7, 2021. https://clinicalinfo.hiv.gov/sites/default/files/guidelines/documents/Adult_OI.pdf

In Reply: We appreciate Dr. Sonoda's important reminder about follow-up testing intervals for primary and secondary syphilis in people with HIV. Our article focused on initial management and did not go in-depth on follow-up protocols for the range of co-occurring conditions and infections that can be identified with a baseline evaluation of people newly diagnosed with HIV. The 2021 updated CDC Sexually Transmitted Infections Treatment Guidelines have been released.[1] These guidelines provide HIV-specific screening, diagnosis, treatment, and follow-up recommendations, which can differ for people with HIV. The section on "Syphilis Among Persons with HIV Infection" lists the follow-up intervals for primary or secondary syphilis as noted by Dr. Sonoda.

Ronald Goldschmidt, MD
San Francisco, Calif.
Email: ronald.goldschmidt@ucsf.edu

Carolyn Chu, MD, MSc
San Francisco, Calif.

Author disclosure: No relevant financial affiliations.

Reference

1. Workowski KA, Bachmann LH, Chan PA, et al. Sexually transmitted infections treatment guidelines, 2021. *MMWR Recomm Rep*. 2021;70(4):1-187. ■