

Case of Puerperal Group A Streptococcal Bacteremia Amidst a Global COVID-19 Pandemic

Jenelle Corey, MS, MEd¹; Simran Kaur Matta, MD²
Drexel University College of Medicine¹, Bayhealth Medical Center²

Introduction

Invasive Group A Streptococcal (GAS) infections are increasingly rare, though there remains a 20-fold increased incidence in post-partum women.¹ Delays in the diagnosis of GAS can have catastrophic consequences as mortality approaches 30% - 50% once shock occurs^{2,3}

We present a case of post-partum puerperal sepsis in a woman with recent COVID-19 infection.

Case Presentation

- 20-year-old obese, G3,P2,A1 female 5 days status post normal vaginal delivery with premature rupture of membranes presenting with progressive abdominal pain of 2 days duration
- Associated symptoms: shortness of breath, chills, flank pain, nausea, vomiting, malaise, scant vaginal bleeding, and cough with hemoptysis
- COVID-19 diagnosis 2 weeks prior during asymptomatic screen
- PMH: asthma
- Social Hx: former smoker

Hospital Course and Management

Initial Work Up:

- Vitals: 88/58, HR 146, RR 44, Temp 102°F, SpO₂ 99%
- Physical Exam: toxic appearing, breath sounds decreased bilaterally, scattered rales, right CVA tenderness, generalized suprapubic tenderness
- Labs: K 2.7, BUN 25, Cr 1.7, HCO₃ 17, WBC 14.48 with 48% bands
- CT: scattered consolidations with adjacent ground glass opacities, patchy right nephrogram, enlarged edematous uterus
- Differential: Sepsis secondary to multi-focal pneumonia vs. COVID-19 vs. pyelonephritis

Hospital Course:

- Day 1-3** Patient admitted to ICU requiring vasopressors
 - Serum Cultures: positive for GAS, Rapid COVID-19: negative
 - Working Dx: puerperal sepsis with possible endometritis
 - Tx: IV penicillin, clindamycin, and a few doses of gentamycin
- Day 4-5** Patient clinically improved, development of purulent vaginal discharge, and WBCs continue to trend up. Vaginal cultures obtained.
- Day 6-7** Serum and vaginal cultures now positive for GAS and ESBL producing E coli.
 - CT: Bilateral pulmonary cavitory nodules suspicious for septic emboli, and left gonadal vein thrombosis
 - US: No retainment of products of conception
 - Echo: Negative for infective endocarditis
- Day 8-21** Patient clinically improved, completed 14-day course of ertapenem, and discharged

Discussion

Even though the incidence of GAS is limited, delay in the diagnosis of invasive infection can have catastrophic consequences. Prompt recognition, initiation of appropriate antibiotics, and source control with surgical exploration, if needed, are crucial to improve morbidity and mortality of this condition. In the context of the current pandemic, abnormal vital signs with pulmonary infiltrates and positive COVID-19 tests can result in potential erroneous and missed diagnoses. It raises the question if recent or current COVID-19 infection could potentially increase the susceptibility of pregnant and post-partum women to GAS puerperal sepsis. It also provokes one to question if there is increased propensity to progression to toxic shock syndrome with delayed management due to alterations in host immunity with COVID-19 infection.

References

1. Rimawi BH, Soper DE, Eschenbach DA. Group A streptococcal infections in obstetrics and gynecology. *Clin Obstet Gynecol.* 2012;55(4):864-874.
2. Population-based surveillance for postpartum invasive group A streptococcus infections, 1995-2000. Chuang I, Van Beneden C, Beall B, Schuchat A. *Clin Infect Dis.* 2002;35:665-670.
3. Puerperal group A streptococcal infection: beyond Semmelweis. Anderson B. *Obstet Gynecol.* 2014;123:874-882.