Title: A Case of Baffling Bacteremia

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Introduction:

Seizures result from hypersynchronized cortical neuron activity. Focal motor seizures (FMS) are specifically caused by epileptogenic activity in the supplementary motor area. The excitatory signals focus around the motor cortex to cause the typical symptoms of these seizures. They are usually explicit, and are one of the causes of altered mental status when associated with impaired awareness. We present a case of subclinical FMS that represented a diagnostic dilemma.

Case Description:

A 67-year-old female with a PMH of HTN and asthma was found down at home. In the ED, urinary incontinence and diminished mental status were noted. The only significant lab suggested a possible UTI. On day 2, she exhibited right-sided hypertonicity with severely altered mental status. She was opening her eyes, but was nonverbal and nonambulatory. CTs and an MRI were negative for acute infarctions.

She had elevated ammonia, but no transaminitis or uremia. A UDS showed opioids, but her altered mentation was otherwise unexplained. An EEG showed spikes suggestive of FMS. On day 5, she displayed new right-sided hemineglect. An MRI showed an acute left-sided cerebral infarction. Subsequent continuous EEG monitoring showed frequent electric activities lasting 3-5 seconds.

Notably, persistent fevers developed after the first EEG. One blood culture grew bacteria initially identified as a *Gemella* species. A literature review revealed an association with septic emboli, but echocardiograms were negative. The differential diagnosis was narrowed toward subclinical FMS secondary to an ischemic stroke. After combination antiplatelet therapy was started, her presentation and mental status improved, and she could verbalize sentences and follow commands after the appropriate antiepileptics.

Discussion:

This case represents an unusual presentation of FMS. While the second MRI showed brain infarcts, the case was complicated by a positive blood culture. Further testing revealed *Aerococcus sanguinicola*, an emerging human pathogen. Along with *A. urinae*, it is capable of colonizing the urinary tract and urinary catheters, leading to UTIs, bacteremia, and IE, especially in those with urinary tract abnormalities. Interestingly, *A. sanguinicola* appears to affect more patients with neurological diseases. The patient's sister reported 2 prior seizures, indicating a possible undiagnosed seizure disorder, which supports a connection with *A. sanguinicola* bacteremia.