New Onset Psychosis Secondary to Neurosyphilis

Samantha Vu, DO, Lauren DeMarco, DO, Francis Butler, MD, Nihal Shah, MD
HCA Healthcare/USF Morsani College of Medicine GME Programs

**Background**

Syphilis is a highly contagious sexually transmitted infection (STI) caused by the spirochetal bacterium *Treponema pallidum*. Transmission occurs through direct contact of painless ulcerative lesions, chancres, located on the genitalia (penis, labia) and oral mucosa. Neurosyphilis is any involvement of the central nervous system (brain, meninges, or spinal cord) by the bacterium.

**Patient Description**

**Patient:** 57-year-old Caucasian male
- Past medical history: hypertension, hyperlipidemia, and type two diabetes mellitus
- Insignificant alcohol and drug use history
- Major depressive disorder (prescribed paroxetine 20mg PO daily, but no reported current use)
- Monogamous marriage of 9 years (together for 15 years); one previous ex-wife
- Occupation: Custodian

**Sexual history:**
- Two sexual partners in his lifetime
- Denied male-on-male sexual contact, contact with sex workers, and history of STIs or genital rashes

**Past psychiatric history:**
- Major depressive disorder (prescribed paroxetine 20mg PO daily, but no reported current use)

**Psychosocial history:**
- Monogamous marriage of 9 years (together for 15 years); one previous ex-wife
- Occupation: Custodian
- Sexual history:
  - Two sexual partners in his lifetime
  - Denied male-on-male sexual contact, contact with sex workers, and history of STIs or genital rashes

**Stages of Syphilis**

- **Primary:** Within 3 weeks of exposure
  - Painful oral, genital lesions
- **Secondary:** Within 3 to 10 weeks
  - Palm/foot rash
  - Swollen lymph nodes
  - Gastric manifestations
  - Condyloma lata
- **Latent:** Can last years to decades
  - Often asymptomatic
- **Tertiary:** 3 to 15 years after exposure
  - Neurosyphilis
  - Taken down
  - Dementia
  - Psychotic
  - Neurovascular
  - Cardiovascular complications
  - Benign gummas

**Emergency Room Visits:** (over seven week timeframe)

**Visit #1**
- **Complaints:**
  - Diffuse maculopapular rash with palmar erythema for about a two-week duration
- **Diagnosis:**
  - Urticaria of unknown origin
- **Treatment:**
  - Discharged home
  - Script for hydroxychloroquine

**Visit #2**
- **Complaints:**
  - Substantial chest pain, RUQ abdominal discomfort
- **Course of action:**
  - Patient admitted
  - Serial troponins, EKG, transcranial echocardiogram unrevealing
  - GI workup - abdominal US/CT/MRI: cryptogenic cirrhosis, liver lesion (2cm) consistent with hemangiomata, esophageal varices, negative hepatitis panel
- **Diagnosis:**
  - Atypical chest pain secondary to GI etiology
- **Treatment:**
  - PPI, outpatient EGD

**Visit #3**
- **Complaints:**
  - Ongoing abdominal pain, nausea, vomiting, diarrhea and weight loss
- **Course of action:**
  - PO challenge was performed and completed without difficulty
- **Diagnosis:**
  - Diarrhea, Abdominal pain
- **Treatment:**
  - Discharged home
  - Follow up with gastroenterologist

**Visit #4**
- **Complaints:**
  - Severe epigastric pain, nausea, and vomiting
  - Unintentional 30lb weight loss over two months
- **Course of action:**
  - Full liver workup (negative)
  - EGD (next day) results were unchanged
  - Symptoms improved the following day
- **Diagnosis:**
  - Abdominal pain due to PUD
- **Treatment:**
  - Discharged with instructions for follow up EGD in eight weeks’ time

**Visit #5**
- **Complaints:**
  - New onset disorientation, gait instability, and visual hallucinations for a two-day duration
- **Course of action:**
  - Patient admitted
  - Psychiatric consult: Quetiapine, an atypical antipsychotic, 12.5mg PO BID was initiated for psychosis and later increased to 25 mg PO BID
  - Serological tests for HIV antibody/antigen was nonreactive, and RPR was positive (1:32 titer)
  - Lumbar puncture with CSF VDRL reactive at 1:4 titer

**Case Presentation**

**Visit #5 Diagnosis and Treatment:**

- Diagnosed with neurosyphilis.
- Penicillin G 3 million units IV q4h was administered with plans for a two-week course.
- Over the course of the patient’s hospitalization, both his mentation and appetite showed gradual improvement, although he continued to have sporadic episodes of confused mentation.
- His psychiatric discharge diagnosis was Psychotic Disorder due to Another Medical Condition.
- He was discharged to an acute inpatient rehabilitation where he completed eleven days of therapy and experienced no major setbacks during his rehabilitation. He was subsequently discharged with home healthcare services (occupational and physical therapy).

**Key Recommendations**

This case illustrates why it is of utmost importance to consider a syphilitic differential diagnosis in new onset psychosis cases and to initiate immediate IV penicillin treatment once neurosyphilis has been confirmed.

From a psychiatric standpoint, the recommended treatment for syphilitic psychosis is the initiation of an atypical antipsychotic, either quetiapine or aripiprazole.

**Discussion and Conclusion**

Syphilis is known as the “great imitator” because both clinical and psychiatric symptoms are considered to be non-specific. In 2018, the total case count for all stages of syphilis has been the highest recorded since 1991. Many people infected with syphilis remain asymptomatic for years, yet they remain at high risk for late complications if they aren’t diagnosed and treated during the early stages of the infection. This case highlights the unique characteristics of a syphilis infection: non-specific multisystem involvement, years of asymptomatic symptomatology followed by sudden and severe somatic, neuropsychiatric, and neurocognitive complications.

**References**


This research was supported (in whole or in part) by HCA and/or an HCA affiliated entity. The views expressed in this publication represent those of the author(s) do not necessarily represent the official views of HCA or any of its affiliated entities.