

A Curious Case of Confusion

Kartikeya Kaul, Daniel Pak, Suleiman Khreshi, Dr. Umang Patel

Introduction:

Meningitis is an inflammatory disease of the leptomeninges. This condition may present with fever, headaches, nuchal rigidity, and change in mental status. *Streptococcus pneumoniae* and *Neisseria meningitidis* are the most common causative bacterial agents. We present a case of bacterial meningitis caused by *Streptococcus mitis* in the setting of CSF rhinorrhea.

Case Presentation:

A 41-year-old female presents with altered mental status. She was notably lethargic and unable to provide any meaningful history. Per her sister, the patient had recently arrived from England for a wedding when she began to complain of fever, headache, and nausea and vomiting.

Vitals upon presentation notable for BP 138/93, HR 111, RR 14, Temp 37 °C, and SpO2 100% on room air.

Initial labs notable for WBC of 16.8 and an elevated lactate of 3.0. A CT head was negative. An LP returned with WBC 7989, 99% neutrophils and protein >200.

The patient was started on empiric ceftriaxone, ampicillin, acyclovir, and steroids. MRI brain showed very subtle hyperintensity in the temporal lobes. CSF culture grew *Streptococcus Mitis*.

Case presentation (cont.):

Following treatment, the patient's mental status improved and she was able to provide additional history with her having an endonasal sinus surgery approximately 5 years ago. Prior to her presenting symptoms, she had been having symptoms of left cheek swelling with clear fluid seeping out of her left nares. It was ultimately concluded she had contracted bacterial meningitis via bacterial translocation through a left-skull base defect. She subsequently underwent endoscopic endonasal repair of the CSF leak.

Discussion:

Meningitis is inflammation of the tissue surrounding the brain and spinal cord and may have infectious or noninfectious causes. The most common presenting symptoms are fevers, headaches, nuchal rigidity, and change in mental status. The most common cause of bacterial meningitis in adults consists of *S. pneumoniae* and *N. meningitidis*; it is noted that the prevalence of *H. influenzae* type B meningitis has declined following the introduction of routine *H. influenzae* vaccinations. Both *S.pneumo* and *N.meningitidis* are normal flora of the upper respiratory tract; it is thought that both cause meningitis by translocating into the spinal fluid. A defect leading directly into the CSF would be significant risk factor for meningitis, as it was in this case.

Conclusion:

While the most common causes of bacterial meningitis are *S.pneumo* and *N.meningitidis*, other less common organisms can also be found in CSF fluid. It is important to be aware of the pathophysiology of meningitis as well as obtaining as thorough as history as possible, and to initiate treatment for suspected meningitis as soon as possible.