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Complications of Otitis Media in an Adult: Progression to Brain Abscess and the Impact of Social Barriers

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Background

Acute Otitis Media (OM) is a common childhood ailment, affecting roughly 80% of children during their lifetime, with the majority of cases occurring between 6-24 months of age.³ In contrast, the incidence of OM among adults aged 25-85 is 1.5-2.3%.¹ OM often follows a viral upper respiratory infection, leading to inflammation-induced obstruction in the middle ear, which can facilitate bacterial colonization.⁴ Prompt and accurate diagnosis of OM is essential to prevent complications while recognizing SDOH is equally crucial for improving patient outcomes. Providing cost-effective and accessible treatment options, such as Osteopathic Manipulative Medicine (OMM) for OM, is vital in reducing healthcare disparities and improving healthcare access.

Objectives

This case highlights bacterial meningitis, mastoiditis, and a subdural empyema as complications of otitis media in an adult male. As bacterial meningitis and subdural empyemas are life threatening conditions that require time-sensitive treatment, bringing awareness to atypical presentations can help encourage efficient and adequate management. Additionally, understanding the role of social determinants of health (SDOH) in delayed treatment is critical to addressing disparities in healthcare outcomes.

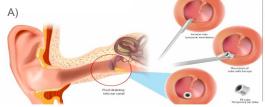
Case Description

A 33-year-old man presented with fever, headache, ear pain, and confusion after Emergency Medical Services (EMS) found him unconscious, with drainage from his left ear. According to the family, the patient felt unwell for five days but avoided treatment due to lack of insurance.

Prior medical history included asthma, for which a steroid inhaler was used as needed. In the Emergency Department (ED), he had a seizure, was intubated and then medicated with IV lorazepam and levetiracetam. The neurological assessment was normal. The left ear presented with erythema and drainage. Physical examination was otherwise unremarkable. Following admission, an otolaryngologist performed a left ear myringotomy, along with the insertion of a pressure-equalizing tube. Ear and blood cultures revealed Group A Strep, prompting treatment with IV ceftriaxone. Brain MRI demonstrated fluid within the mastoid air cells and a brain abscess, leading to emergency craniotomy with abscess removal and mastoidectomy. The patient improved following postoperative antibiotics.

Imaging

A) Illustration of myringotomy procedure
B) T1 weighted MRI demonstrating a left parietal subdural collection (yellow circle), consistent with subdural empyema.





Discussion

Differential diagnosis of the patient's presentation was broad; including meningitis, convulsive syncope, and drug overdose. Considerations of possible etiologies prompted CT, MRI, and lumbar puncture which confirmed diagnosis of subdural empyema in the left superior parietal lobule secondary to untreated Otitis Media. Facets of SDOH, such as delayed care due to lack insurance and limited access to healthcare, exacerbate the risk of severe complications by prolonging time to diagnosis and treatment. Additionally, incorporation of OMM may be a beneficial adjunct to standard treatment for underserved patients, serving to potentially reduce mortality.

Conclusion

The dangerous sequelae of OM highlights the need for timely recognition and treatment, especially among vulnerable populations. Untreated OM complications, such as mastoiditis, meningitis, subdural empyema, and seizures, can lead to high morbidity and mortality. Recognizing the SDOH that contribute to disparities in healthcare access and outcomes is essential for mitigating the burden of OM and its associated complications. Efforts to expand healthcare access, promote education, and address socioeconomic disparities, can have an impact on improving overall health outcomes. Utilizing OMM can help bridge gaps in access to care, as it provides cost-efficient treatment options for patients of different socioeconomic backgrounds.

Citations

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