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Missed Diagnosis Nearly Leads to Disaster: A Case of Petrous Apicitis Overlooked

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ABSTRACT

Introduction: Petrous apicitis is an uncommon but intracranial severe complication arising from inadequately treated middle ear infections or otomastoiditis. This condition, characterized by inflammation and infection of the petrous apex of the temporal bone, requires prompt diagnosis and aggressive management to prevent potentially life-threatening sequelae such as meningitis, brain abscess formation, venous sinus thrombosis, and cranial neuropathies. Delays in recognition and treatment can lead to devastating neurological consequences, underscoring the importance of maintaining a high index of suspicion for this clinical entity.

Case Presentation: A 37-year-old male presented to the emergency department with a one-week history of severe headache and left-sided otalgia. Computed tomography (CT) of the head was performed to evaluate for intracranial pathology. Still, the reviewing resident radiologist did not recognize the findings of opacification in the left petrous apex as consistent with petrous apicitis. The patient was discharged without treatment but returned 48 hours later with worsening symptoms. On re-evaluation of the initial CT images by an attending radiologist, the diagnosis of petrous apicitis was finally established.

Results and Conclusion: The patient was admitted for intravenous antibiotics and subsequently required surgical drainage via mastoidectomy after failing to improve with medical therapy alone. This case highlights the subtlety of imaging findings in petrous capacities and the need for radiologists to maintain high vigilance. Failure to promptly recognize and treat this condition can lead to delays in management and the potential for severe intracranial complications, including meningitis, venous sinus thrombosis, and cranial neuropathies. Radiologists must be aware of the imaging patterns of petrous capacities, particularly in patients presenting with headache and otologic symptoms concerning complicated otomastoiditis. Early diagnosis is critical to facilitate the timely initiation of appropriate antimicrobial and surgical therapy when necessary.

Keywords: Missed diagnosis, Nervous system diseases, Petrositis