

FROM EAR TO BRAIN: A RARE CASE OF OTITIS EXTERNA LEADING TO TEMPORAL LOBE ABSCESS AND WERNICKE'S APHASIA

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Introduction

Otitis externa, commonly referred to as "swimmer's ear," is an infection of the external auditory canal. Although otitis externa is usually benign, complications can develop if it is left untreated, especially in high-risk populations like the immunocompromised, diabetic, or elderly. Although rare, intracranial extension is a severe consequence of untreated otitis externa and can manifest as either osteomyelitis or a brain abscess. This report describes a rare case of a temporal lobe abscess that developed from untreated otitis externa, which resulted in Wernicke's aphasia.

Case Presentation

A 59-year-old female with type 2 diabetes mellitus and hypertension presented with 3-4 days of altered mental status, confusion and forgetfulness.

Two weeks earlier, evaluation for ear pain in the ED led to a diagnosis of otitis externa, and oral/topical ciprofloxacin was prescribed which was discontinued due to vomiting.

On examination, the patient was alert but disorganized, with tangential speech and impaired comprehension; naming and repetition remained intact, and no focal deficits were observed. There were no otologic symptoms at the time. Vitals and labs were unremarkable aside from hyperglycemia.

Imaging

The initial head CT was normal, but due to continued neurological symptoms non-contrast brain MRI done, revealed a T2 FLAIR hyperintensity in the left temporal lobe. Contrast-enhanced MRI showed **opacification of the left mastoid and middle ear, coalescent mastoiditis, a tegmen tympani defect, and a peripherally enhancing left temporal lobe collection consistent with a small abscess**. Findings were consistent with a left middle temporal gyrus abscess and contiguous mastoid involvement.

MRI Brain with contrast showing well-defined, ring-enhancing lesion
Fig 1. Sagittal view



Fig 2. Coronal view



Management

Neurologic exam showed expressive aphasia consistent with dominant temporal lobe involvement. **A multidisciplinary team** including neurology, neurosurgery, otolaryngology, neuroradiology, and infectious disease decided that the small abscess without mass effect could be managed nonoperatively. **Empiric IV cefepime, metronidazole, and vancomycin** were started, with a planned **six-week antibiotic course** and an eight-week follow-up MRI to confirm resolution, with readiness to intervene surgically if needed.

Outcome

Eight-week surveillance MRI demonstrated near-complete resolution of both mastoid and intracranial abscesses with minimal residual FLAIR signal. The patient's expressive aphasia and confusion improved well. **Neurologic symptoms resolved** in parallel with radiographic improvement.

Discussion

This case shows that even acute otitis externa can extend intracranially—via a tegmen tympani defect and coalescent mastoiditis—resulting in temporal lobe abscess. Severe hyperglycemia may both predispose to infection and obscure focal deficits. **Early MRI and coordinated specialty management with multidisciplinary team enabled successful nonoperative treatment in this case.**

Conclusion

This case illustrates the importance of vigilance in patients with unresolved or undertreated otitis externa, particularly in those with diabetes mellitus, where infection may follow an aggressive course.

Early MRI and coordinated specialty management enabled successful nonoperative treatment in this case. **Vigilance is essential for the primary care physicians when new neurologic symptoms follow ear infections**, even in the absence of otologic complaints.

References

1. Hussain JA, Singh L, Pugh G. Unveiling the Hidden Culprit: A Case of a Temporal Lobe Abscess Presenting With Nonspecific Symptoms. *Cureus*. 2025 May 12;17(5):e83954. doi: 10.7759/cureus.83954. PMID: 40502871; PMCID: PMC12153515.
2. Complicated Necrotizing Otitis Externa Progressing to Coalescent Mastoiditis and Temporal Lobe Abscess Demirci, Talha et al. *The American Journal of Medicine*, Volume 132, Issue 2, e39 - e40
3. Duarte MJ, Kozin ED, Barshak MB, Reinshagen K, Knoll RM, Abdullah KG, Welling DB, Jung DH. Otogenic brain abscesses: A systematic review. *Laryngoscope Investig Otolaryngol*. 2018 Apr 25;3(3):198-208. doi: 10.1002/liv.150. PMID: 30062135; PMCID: PMC6057212.