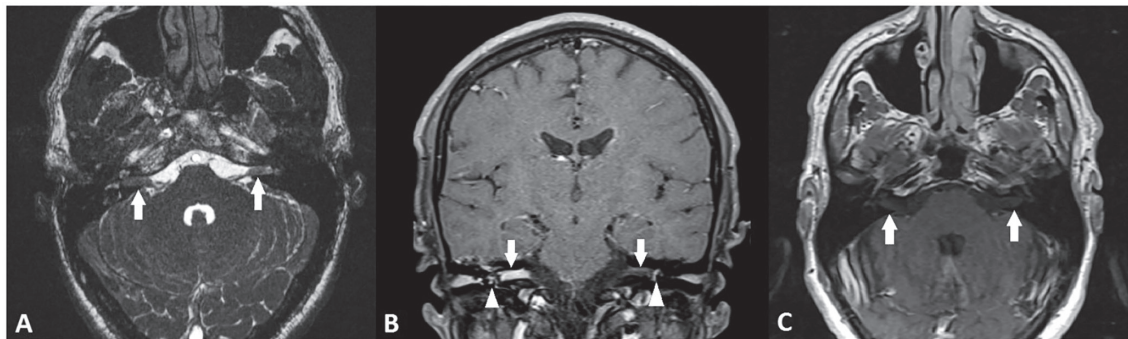


Images in Infectious Diseases

Neurosyphilis mimicking a bilateral vestibulocochlear schwannoma

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FIGURES A and B: Cranial magnetic resonance images showing small lesions affecting both internal auditory canals (IACs), more evident on the right-side and without IAC enlargement. Associated with loss of the habitual liquor sign on the three-dimensional constructive interference in steady-state sequence (arrows in A) and bilateral IAC enhancement on a gadolinium-enhanced T1 sequence (arrows in B). Membranous labyrinth enhancement is also evident (arrowheads in B). **Figure C:** Control image obtained two months following treatment initiation, note the absence of anomalous IAC enhancement on a T1 gadolinium-enhanced sequence (arrows).

A 26-year-old man was admitted with progressive deafness over the previous month; he denied having fever or any other associated symptoms. Serological tests for HIV and syphilis (Venereal Disease Research Laboratory [VDRL]; 1/80 dilution) were positive. Lumbar puncture was performed; cerebrospinal fluid analysis revealed pleocytosis (37/mm³) with lymphocytic predominance, increased protein concentration (56 mg/mL), positive VDRL test (1/32), and positive Fluorescent Treponemal Antibody-Absorption test. Brain magnetic resonance imaging (MRI) showed contrast-enhancing lesions affecting both internal auditory canals, with the right-side lesion more evident (**Figures A and B**), and membranous labyrinth enhancement (**Figure B**). The main diagnosis was neurosyphilis affecting

cranial nerve VIII. Treatment with intravenous penicillin G and a corticosteroid was initiated. A control MRI showed a good outcome (**Figure C**), however, the patient's hearing did not recover.

Although uncommon, vestibulocochlear neuritis may be the first sign of neurosyphilis, which develops early in 4% of HIV-positive patients¹⁻³. It may be isolated or associated with other cranial nerve lesions, manifesting with sudden or rapidly progressing (within a few days) hearing loss¹⁻³. The main differential diagnosis is schwannoma, the most common internal auditory canal lesion. Schwannomas usually occur unilaterally and may cause auditory canal enlargement; bilateral involvement is rare and is often associated with type II neurofibromatosis. Other differential diagnoses are Lyme disease, leptospirosis, neurosarcoidosis, lymphoma, and metastases.

Clinicians must be aware that neurosyphilis may mimic other diseases. This condition should be included in differential

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diagnoses of lesions involving cranial nerve VIII, especially when they occur bilaterally and affect the membranous labyrinth¹⁻³.

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Conflict of Interest

The authors declare they have no conflicts of interest.

REFERENCES

1. Komamura H, Nakamura T, Kobayashi J, Harada R, Endo K, Ogura M, et al. Early neurosyphilis presenting with multiple cranial nerve palsies: A case report of management by combined penicillin-corticosteroid treatment. *J Infect Chemother.* 2019;25:362-4. doi: 10.1016/j.jiac.2018.11.007.
2. Alqahtani S. Acute cranial neuropathies heralding neurosyphilis in human immunodeficiency virus-infected patient. *Am J Case Rep.* 2014;15:411-5. doi:10.12659/AJCR.892292.
3. Bösel J, Klingebiel R, Schielke E. HIV-associated neurosyphilis mimicking acoustic neurinoma. *J Neurol.* 2006;253:250-2. doi: 10.1007/s00415-005-0927-4.

