Unusual Presentation of Skull Base Osteomyelitis in Non-Immunocompromised Elderly Patients – The Essential Role of Nuclear Imaging in Diagnosis

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Introduction
Otogenic skull base osteomyelitis (SBO) is a life-threatening condition requiring timely diagnosis and treatment. It is most commonly seen in the elderly diabetic or immunocompromised patients. The role of nuclear medicine imaging in diagnosis of SBO remains controversial. We present two unusual cases of otogenic SBO in elderly non-immunocompromised patients without diabetes.

Discussion of Cases
Both patients presented with mild chronic otalgia and essentially normal inflammatory markers. They were subsequently diagnosed with otogenic SBO based on nuclear medicine imaging. Nuclear medicine imaging was essential for diagnosis and localization of SBO in these patients as computed tomography (CT) and magnetic resonance imaging (MRI) either failed to detect SBO or to accurately localize SBO.

Patient 1: Although CT detected bony changes in the temporal bone suggestive of SBO, it failed to accurately localise SBO. Subsequent nuclear imaging was able to localise SBO to the greater wing of right sphenoid.

Patient 2: CT and MRI failed to detect SBO. Diagnosis was only made on nuclear imaging.

Conclusion
We recommend a high index of suspicion as SBO can occur in non-immunocompromised elderly patients without diabetes. CT and MRI scans are useful but not always reliable in the diagnosis and accurate localization of SBO. Nuclear medicine imaging is essential in the diagnostic workup.