

Images in Infectious Diseases

Slike u infektivnim bolestima

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Skull base osteomyelitis: a rare entity

Central skull base osteomyelitis is an infection localized to the sphenoid and temporal bones. It occurs as a complication of malignant otitis externa and/or media. The most frequent causative pathogen is *Pseudomonas aeruginosa*. Risk factors include old age and diabetes. Patients usually present with symptoms of headache and cranial nerve palsies.



Figure 1. Post contrast computed tomography (CT) scan of the brain reveals a large, hypodense lesion in the parenchyma of the left fronto-temporo-parietal region, sparing the basal ganglia. It is consistent with an acute ischemic lesion as a result of the left internal carotid artery (ICA) sub occlusion

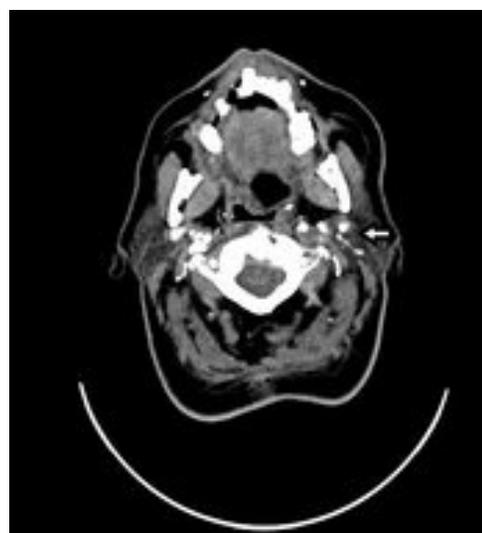


Figure 2. Multislice computed tomography (MSCT) angiography: inflammatory infiltration of left sided skull base with compression of the left internal carotid artery (ICA) and sub occlusive stenosis of ICA in segments C3 and C4 (arrow)

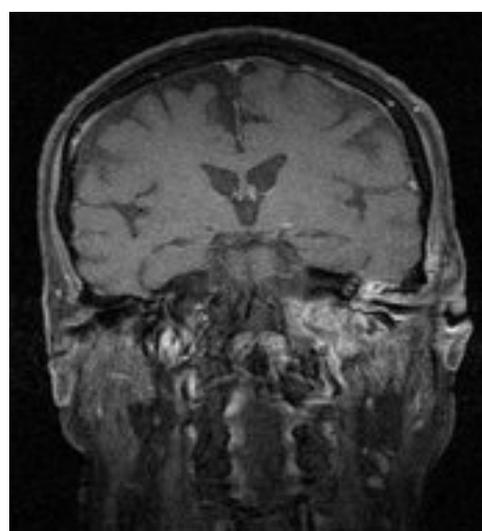


Figure 3. Coronal post contrast T1WI of the head and neck shows extensive imbibition of inflammatory collection. It was caused by destruction of the left pyramid apex and infiltrates of *longus colli* muscle on the left side. Left Dorell's canal is infiltrated as well, with compression of the abducens nerve

A 63-year old man with a previously operated cholesteatoma was admitted to the hospital with symptoms of vomiting and vertigo. Symptoms progressed despite receiving co-amoxiclav, cranial nerve palsies appeared and the patient was transferred to the ICU because of respiratory failure. The results of bloodcultures (*P. aeruginosa* positive) narrowed the therapy to meropenem and cefepim. During hospitalization the patient suffered a massive ischemic stroke (Fig. 1) because of compression

of the left internal carotid artery (Fig. 2). The patient died due to complications and spread of infection.

Cranial CT is usually used as the initial diagnostic test, though its sensitivity in detecting disease is fairly limited without initial bone destruction. MRI on the other hand can differentiate between the soft tissue structures, but cannot differentiate between multiple disease processes (Fig. 3). Therapy should be directed at *P. aeruginosa* with a combination of ceftazidime and carbapenem for a minimum of 6 weeks.