OSTEOMYELITIS OF TEMPORAL BONE: A CASE REPORT

INTRODUCTION
Osteomyelitis is defined as an inflammatory condition of the bone that commences as an infection of the medullary cavity, rapidly involving the Haversian systems, and eventually involving the periosteum of the infected areas.1 Invasion of bacteria into the cancellous bone results in compression of the blood vessels secondary to inflammation and edema of the marrow space. Compromise of blood supply results in the development of ischemic and necrotic bone.2 Immobility of the stagnant blood serves a critical nidus for development of osteomyelitis.3 Etiology may result from trauma, bone surgery, bacteremia, or infectious focus and is further influenced by diseases that affect the vascularity of bone, as well as by systemic diseases producing an alteration of host defenses.4 Anatomically, the bones involved are the mandible, frontal bone, maxilla, nasal, temporal bone, and skull base bones.5

Osteomyelitis is an opportunistic infection that usually complicates some other condition rendering the host susceptible to disease.6 In tooth-bearing bone, osteomyelitis is caused by Peptostreptococcus, Bacteroides, and Streptococcus spp., Arachnia, Klebsiella, mycobacterium tuberculosis, and Eikenella spp. Fungal organisms, such as Aspergillus, Candida parapsilosis also have been reported.7

Acute osteomyelitis may present as routine infection with signs including fever, pain, malaise, and facial cellulitis.8 There may not be any associated noticeable radiographic changes. It may take up to 10 - 12 days for bone loss to be apparent radiographically.9 Acute osteomyelitis may be primarily managed with antibiotics. The underlying predisposing factors or conditions must be adequately treated. The antibiotic of choice is clindamycin because of its effectiveness against streptococci and anaerobes that are usually found with osteomyelitis.10 Hospitalization may be necessary for treatment with intravenous antibiotics. Surgical treatment is usually focused on debridement of the involved soft tissue and affected bone any infected teeth or loose bone must be removed.

CLASSIFICATION

Waldvogel classification. Based on the physiopathology, infections are classified into three groups: hematogenous osteomyelitis; osteomyelitis secondary to a contiguous focus of infection; and osteomyelitis associated with peripheral vascular insufficiency. Based on the length of evolution, the infections are classified as acute osteomyelitis and chronic osteomyelitis (recurrences).

Cierny and Mader classification. In this classification, osteomyelitis is divided according to bone anatomy and physiological factors of the host. The authors describe four anatomical categories, according to the bone involvement, and three types of host, depending on the patient’s clinical conditions. It was developed mainly for infections in long bones.

CASE REPORT
A 51 yr male patient presented to the Guahati Medical College with a complaint of left side scalp swelling with headache since 5 months. He also gave a history of difficulty in opening the mouth since 3 months. The patient gives a history that the swelling in his left temporal region started as small swelling 5 months back and gradually progressed to the present size. It has been associated with headache on his left side which is dull aching and continues nature with no diurnal variation, relieved only on medication. The patient gives no history of injury to the scalp or any form of skin infection in the scalp. No history of any ear discharge or ear pain. The patient is a known case of diabetes mellitus on medication for 16 years.

Clinical examination: On clinical examination the patient had a soft fluctuant swelling of 4*2 cm in the left frontotemporal region. The skin over the swelling was erythematous and tender; with grade II trismus and carries tooth in his left upper jaw. Aspiration approximately 5 ml of pus was aspirated out from the site and sent for cytological examination. The patient was oriented to time place and person but was drowsy. All cranial nerve examination were normal. On Otoscopic and audiological examination both the ears were found to be normal. Vision was normal. Blood parameter were with normal limit except RBS which was raised even with medication. Radiological examination (CECT brain) revealed a subgaleal abscess in the temporal region with bony erosion with soft tissue swelling extending to supra zygomatic and masticator space. There was no neurological deficit on CT scan. Dental examination revealed dental infection, periodontal erosion caries in multiple tooth. Cytological examination confirmed it be an osteomyelitis.

We have kept the patient on antibiotic coverage 4 weeks and have controlled the glyceride index with insulin after 4 weeks of treatment the swelling as decreased in size the patient had clinically improved. The infected tooth were removed. A CT scan of the brain was done again at the end of 4th week and it showed resolution of the abscess and soft tissue swelling with irregularity noted on the frontal bone. Patient was discharged on and antibiotic coverage and advised a strict glycemic control and regular follow-up.
10-year-old immunocompetent girl developed lateral medullary syndrome (LMS) secondary to chronic sphenoid sinusitis. Subburaman and Chaurasia stated that skull base osteomyelitis is a known complication of malignant external otitis (MEO). MEO arises in elderly diabetic patients with an inflamed ear canal and granulations with or without facial weakness. In some cases, involvement of the facial nerve and occasional radiologic findings of a mass, MEO can mimic malignancy. Central skull base osteomyelitis has been described as occurring in the absence of otitis externa. Chang et al described series of patients who presented with cranial neuropathy and headache without any external ear pain. These atypical presentations arise from the occipital or sphenoid bones as opposed to the temporal bone seen in cases associated with otitis externa. These cases occur less frequently and usually present only with headache. Gram-positive organisms are common with these infections, including underlying fungal infections of the sinuses with Aspergillus, mucormycosis. This in contrast with the Pseudomonas infections as seen in skull base osteomyelitis associated with otitis externa. In these atypical cases, imaging is best accomplished using MRI. Diagnosed by tissue sampling using CT-guided fine-needle aspiration (FNA) Several serious complications have been described in the literature occurring from skull base osteomyelitis, including cranial neuropathy, soft tissue involvement of the cavernous sinus with or without cavernous sinus thrombosis, and meningeal or brain parenchymal extension.

CONCLUSION
Osteomyelitis of the craniofacial skeleton is a complex problem requiring rapid and thorough diagnosis and treatment. Failure to do so can result in a host of complications and consequences. The cause of this disease is multifactorial and its presentation varies. Whatever the cause may be, complete resolution of the infection must be obtained to decrease the morbidity and mortality of the patient.

REFERENCES