INFECTIONS OF THE JAWBONES AND OTHER SOFT TISSUES

NGEOW WEI CHEONG
BDS, FFDRCSI, FDSRCS, AM
Lecturer,
Department of Oral and Maxillofacial Surgery,
Faculty of Dentistry,
University of Malaya.

Introduction
Dentistry is largely the treatment of infections. Everyday, we deal with infection of the tooth structure and its supportive structure i.e. caries and periodontal disease. In this write-up, we will deal mainly with infection of the bone and its surrounding tissue. It will be dealt in a series on osteomyelitis and another series on soft tissue infection.

Osteomyelitis in general
Osteomyelitis in general refers to the infection and inflammation of the bone and bone marrow, in our interest the jawbones. It is not a disease usually encountered in the general dental practice (except for acute alveolar osteitis) and it is rather difficult to diagnosis as it bears some resemblance to some cemento-osseous lesions and sarcomas. Diagnosis relies mainly on clinical history, signs and symptoms and radiographic findings. Various classifications have been suggested for osteomyelitis, and up to now, I find them rather confusing. I personally will prefer to look at it more simply by comparing it with the anatomy of the mandible (where most of osteomyelitis of the jawbones happens).

As in any other infection, the basic classification of osteomyelitis involves acute and chronic stage. Osteomyelitis is very interesting in that it can present as an acute disorder that may turn chronic and it may also be seen at a chronic stage without undergoing the acute stage (something like tuberculosis infection which is of chronic form of infection). These acute and/or chronic stages can be supplicative or non-suppurative.

Further on, osteomyelitis can be localised, as seen in condensing osteitis (also known as focal sclerosing osteomyelitis), whereby instead of causing loss of bone, sclerosis happens. Sclerotic results in a radiopaque lesion when viewed radiographically. The sclerosing process can also be diffuse (as opposed to focal), thus resulting in a condition known as diffuse sclerosing osteomyelitis. Besides sclerosing, osteomyelitis can also happen in the periosteal area, giving rise to a condition known as proliferative periostitis or periostitis ossificans (Garré's osteomyelitis). It is essentially a periosteal osteosclerosis analogous to the endosteal sclerosis of condensing osteitis and diffuse sclerosing osteomyelitis. The typical feature of this reaction is the presence of onion-skinning feature when viewed radiographically.

Lastly, a condition termed acute alveolar osteitis occurs following the extraction of teeth. Also termed dry socket or fibrinolytic alveolitis, it is a localised infection of the extraction socket as a result of blood clot breakdown. It has also been termed as focal osteomyelitis.

As seen, the various conditions described above occur due to different reactions at various part of the jawbone. Acute and chronic osteomyelitis (suppurative and non-suppurative) can occur in any part of the medullary cavity of the jawbones. Although the infection begins in the medullary cavity, the cortical bone and the periosteum are involved in the later stages.

Condensing osteitis happens at the periradicular region of an infected tooth. Diffuse sclerosing osteomyelitis is the generalised variant of condensing osteitis. Proliferative periostitis in contrast, happens mainly in the cortex-periosteal region and finally, acute alveolar osteitis happens in the extraction socket. I believe this way of classifying osteomyelitis makes understanding easier.