Oral surgry #22

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**osteomyelitis**

what is the meaning of osteomyelitis-

the literal meaning: inflammation in the bone marrow

but osteomyelitis refer to infection of the bone marrow ,cortical bone and cancellous bone (the whole components)

osteomyelitis now is rare, in the past it was more common -

-it is more common in the mandible than the maxilla because the bone in the mandible is dense cortical

blood supply of the bone ((which is the best defense)) , either come from axial vessels or perforaters(from the periosteum)

-when we have thick cortex the number of perforaters are less

the mandible has one main axial which os the inf alveolar-

-but the maxilla has many perforaters (bloods from many direction , cause it is thinner)

maxilla has much stronger blood supply , that's why osteomyelitis more common in the mandible

-when we see a case of osteomyelitis of the jaw ,you have to investigate underlying conditions ) local or systemic diseases)

-local factors : Dental infection , jaw fracture , osteopetrosis, paget disease

systemic factor : immunocompromised , uncontrolled diabetes , radiotherapy , leukemia, Alcoholic patient , sickle cell anemia

-bacteria in the mouth , make infection and inflammation associated with edema, that compress the blood vessels so it compromise the blood supply so the bone start to die

once you have dead bone , you don't have defense so the disease start to spread

-we will have a large segment of dead bone, and it doesn't cure unless you open a flap and debried

the antibiotic alone is not enough, that’s the main diffrance between osteomyelitis and other infections.

now osteomyelitis , initial case of infection start as acute osteomyelitis, most likely from periapical infection.

clinical manifestation start like the dentoalveolar abscess , inflammation of the mucosa and the gengiva , some time extra oral swelling occur

pus around the teeth and mobility may occur , also trismus may occur , fever (acute phase)

also alter sensation of the inf alveoler nerve , for ex: pt came with osteomylitits due to infected alveoler cyst (dentegerous cyst)

-for example a patient came with altered sensation and she had infected follicular cyst, she had neurosensory defect, swelling that become indurated , this was exactly the same signs of osteomyelitis.

-It is very difficult to differentiate it from the dentoalveolar abscess and the treatment at this stage is the same but the patient start to feel altered sensation of the ID , so we start to think that the infection spread into the marrow beginning to become osteomyelitis.

-in order to have radiographic changes on x-ray we need more than 10-12 days to see resorption

here we may only see widening of PDL we don't see bone resorption.

-Microbilogy : the Microorganism, no differences from the one that make dentoalveolar infection or facial spaces infection

it is mixed pool of microorganism that contain streptococcus , anaerobic rod & cocci

staph aureus is rare

so it is mixed of aerobic and anaerobic

how do i treat osteomyelitis in the acute phase , I have to treat the cause ,if it was due to tooth infection we took it off , if it was fracture we fix it , if foreign body we remove it

so we treat the cause , then we give antibiotic (broad spectrum)

-clindamycin is perfect , because it has good penetration of bone even in compromised blood supply

amoxicillin is good , both are effective-

here we have compromised blood vessels , the doctor prefer **clindamycin**.

-osteomyelitis is a serious infection , we have poor blood supply , to the antibiotic need long time to reach the site of infection, so we give the antibiotic for at least 4 weeks.

-the doctor prefer to extract the tooth , others says that RCT could help but the doctor say it won't

-when does the acute phase turn into chronic ? either if the acute osteomyelitis were not treated or sometimes the microorganism has low virulence and the defenses of the body increase so it become chronic course ( they don't give us the acute phase)

-chronic osteomyelitis produce sensitivity , less sever signs and symptoms and there is no immunocompromised function , we can see diffuse area of bone resorption (moth eaten appearance)

although sometimes we can see some areas of reactive bone build up (radiopacities)

also in chronic case we see sequester area of bone

pool of infection (areas of radiopacities and areas of radiolucencies )

-you always have to identify the cause and then you have to explore the area and debried with large round bur until you see fresh red blood, you have to remove the cortical surface of the bone to allow fresh air to enter, also remove the sequestrum

-obviously you have to identify the cause and remove it.

Hyperbaric O2 , we put the pt in closed room and we put O2 under high pressure, for 1-2 hours -

-usually used with scuba divers to decompress the chamber

O2is therapeutic , we apply it to the areas of poor blood supply

-decompression chamber , is expensive and it has side effects on the ratina.

-we have subtypes of osteomylitis like Garre's osteomylitis it occur in young children , prolifration of the periosteum occur

 it is realted to 1st molars cause it is the most common tooth to get carious then pulpitis occur then low purulent infection occur that will lead to expantion of the periosteum , so the periosteum react by producing bone, it appear as bone swelling

so it is low grade infection-

sometimes it occur in young adult

we treat it by giving Antibiotic 17:53