THE ROLE OF ANAEROBIC ORGANISMS IN CHRONIC OSTEOMYELITIS

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Post-traumatic osteomyelitis is considered as a serious orthopaediccomplication. because of this infection is a determintal factor in delayed unionand non-union of the fracture. The bacterial organisms gain enterance directly into the bone through the interrupted tissues as a result of compound fracture, the fracture hematoma serves as a fertile culture medium. This study includes 30 patients suffering from post-traumatic osteomyelitis were chosen randomly. The samples were taken deeply from thesinus or from the surrounding of the sequestrum during surgery by using sterile cannula and syringe. All patients were stopped the antibiotic beforethe sampling for at least 72 hours. Each sample was cultured immediatly within 15 minutes on columbiablood agar incubated anaerobically, at the same time on blood and MacConkeyagars which incubated aerobically. Each type of the colonies was stained byGram-stain and also, subcultured to obtain pure plate for identification by API 20 A system. The results of this study revealed that the males were more affected than females. The lower limb was more affected than upper limb. Also, the tibia was the most commonly affected bone. The anaerobic infection was found in 17 cases (56.7%). Pure anaerobic infection was obtained in 7 cases (23.4%), from which 3 cases (10%) with single anaerobic organism was isolated, while 4 cases (13.3%) of mixedanaerobic organisms were isolated. Mixed anaerobic and aerobic infectionswere encountered in 10 cases (33.4%).As regard the anaerobic infection, the most frequent isolated organisms were the anaerobic gram-positive cocci (43.5%), which were Peptostreptococcus magnus, Peptostreptococcus anaerobious and Peptostreptococcus assacharolyticus. Anaerobic gram-negative bacilli represented (13.1%), Bacteroides fragilis was the only organism isolated. Anaerobic gram-positive spore-forming bacilli were isolated in 9 cases (39.1%),6 of them were Clostridium perfringens and the other 3 were Clostridiumhistolyticum. Anaerobic gram-positive non spore-forming bacilli were (4.3%),only Eubacterium lentum was isolated from one case. On the other hand, the Staphylococcal infection represented (66.7%), in the whole series, it was isolated as the only causative organism in 13 cases (43.3%), while it was mixed with anaerobic organisms in 7 cases (23.4%), Proteus was isolated from mixed infection in 3 cases (10%).The conclusion of this study is that, the anaerobic culture should bedone as a routine laboratory investigation for every case with chronic persistant osteomyelitis, as the anaerobic infection carries a relatively unexpected high incidence in the post-traumatic type of osteomyelitis. For obtaining perfect anaerobic culture we recommend that:1- The

antibiotic must be stopped befor the sampling for at least 5 days.2- Good preparation and sterilization of the skin.3- The sample should be taken as deep as possible by using sterile cappedcannula and syringe with rapid expelling the air.4- The sample must be cultured immediatly or within 15 minutes on thesuitable media for anaerobic organisms. If transport to the laboratory is tobe delayed more than 15 minutes, a specific anaerobic transporter shol;Jldbe used, because anaerobes can remain viable in these transporters for 24hours.5- Antibiotic sensitivity test must be done for each patient to select theappropiate antibiotic.