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Efficacy of Various Disinfectants on Bacterial and Fungal Contamination of Clamping Tweezers

A Thesis submitted to the Council of the College of Dentistry/ University of Baghdad in Partial Fulfillment of the Requirements for the Degree of Master of Science in Orthodontics

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Abstract

Orthodontics is outstanding among medical branches with a higher number of predisposing factors for cross-infection, awareness of efficient sterilization techniques considered to be very important subject.

The aim of the study was to investigate the efficacy of various disinfection methods on orthodontic clamping tweezers contaminated with bacteria and *Candida albicans.*

Staphylococci, streptococci and *Candida albicans* cultivated from the sample of whole saliva taken from one patient after three months of braces placement. A broth is prepared of *streptococcus* and *staphylococcus* and *Candida albicans* to obtain 10^6–10^7 CFU/ml**.**

The peaks of 25 clamping tweezers were cut to get 50 pieces. Twenty five pieces of them were exposed to broth of bacteria mixture. The other 25 pieces exposed to broth of *Candida albicans*. The 25 pieces of each group subdivided into five groups, four of which were disinfected with saniswiss biosanitizer I, desident cavicide, glutareldehyde 2%, peracetic acid 0.25% and the fifth group was autoclaved. The remaining bacteria and fungi identified after using various disinfectants.

One piece from each group scanned by scan electron microscope (SEM). All the methods used for disinfection showed no growth of bacteria. However; when the tweezers contaminated with *Candida albicans,* disinfection with desident cavicide solution showed growth of *candida* while the use of autoclave, gluteraldehyde 2%, peracetic acid 0.25% and biosanitizer I, recorded no growth on sabouraud agar. SEM showed slight to moderate or severe alterations.