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PREVELANCE OF *Porphyromonas gingivalis* AND *Streptococcus mutans* IN DENTURE-BIOFILMS FROM A GROUP OF COMPLETE-DENTURE WEARERS ATTENDING DENTAL HOSPITAL (TEACHING), PERADENIYA, SRI LANKA

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Complete dentures (CD) support the oral functions by replacing the missing teeth of edentulous patients. Although dentures promise to solve all the oral problems faced by natural teeth, certain studies as well as cases have reported the opposite stating that CD also facilitates formation of biofilms that may harbor various opportunistic oral pathogens such as *Porphyromonas gingivalis* and *Streptococcus mutans*. These bacteria cause periodontal diseases and dental caries, respectively, and induce systemic infections in compromised patients. Studies on the presence of these microorganisms in the denture-biofilm of complete-denture wearers are rare. Hence, the present study aimed to investigate the prevelence of *P. gingivalis* and *S. mutans* in the denture biofilm of a group of complete-denture wearers attending the Dental Hospital (Teaching), Peradeniya. Biofilm samples were collected from 24 complete denture wearers. Total DNA from the denture biofilm samples was extracted using the NaOH-lysis method. The presence of microorganisms was detected based on *16S rRNA* gene-based DNA profiling. Prevalence of *P. gingivalis* in denture-biofilm was 60 - 70%, whereas prevalence of *S. mutans* was 45%. The pairwise association analysis revealed that there is a significant correlation between males and the prevalence of *S. mutans* (Pearson $\lambda^2 = 4.196$ and $p = 0.041$). A significant relationship among denture hygiene and the patient's age was also reported (Pearson correlation coefficient 0.493, $p = 0.014$) with regard to the prevalence of *P. gingivalis*. Both species were present when the patient was an older male with poor denture hygiene (25% of the subjects); however, females of similar age with good denture hygiene did not harbor either *S. mutans* or *P. gingivalis*. These results suggested that CD facilitate the prevalence of *S. mutans* and *P. gingivalis* even in an edentulous mouth. Hence, maintaining proper denture hygiene is necessary to avoid any opportunistic infections by these potential pathogens.

Keywords: *16S rRNA* gene, Denture-biofilms, Opportunistic infections, Oral pathogens, Pathogenicity of dentures