

Occlusion and Periodontal Disease

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INTRODUCTION

The etiology of all periodontal disease is considered as multifactorial, in which bacterial biofilm plays a necessary role in the development of the periodontal disease. Biofilm is a close relationship between bacteria in which the microbial cells adhere to each other on any surfaces through a self-produced matrix of extracellular polymeric substance. In spite of all individual present numerous varieties of bacteria around the teeth, the individuals may not develop periodontal disease. Periodontal disease onset and progression only results when bacteria and local and/or general predisposing risk factor must act in association to induce destructive periodontal disease. Since bacteria are considered the indispensable etiologic agents which induce periodontal disease, the main goal of periodontitis treatment is targeted on elimination or control of bacteria and their derived toxic products. The elimination or control of bacteria seems to be impossible to reach to maintain periodontal health all the time, mainly when a predisposing risk factor is associated with bacterial biofilm to induce a localized or generalized periodontal disease at a given moment. In this situation, solely bacterial biofilm control does not seem enough to establish a control in the onset and development of the periodontal disease. The control or elimination of the predisposing risk factor also seems to be essential to treat periodontal disease. For this, it is important to diagnose and understand the mechanism of action of the predisposing risk factor which act associated with bacterial biofilm to trigger periodontal disease. One of the principal predisposing risk factor which in association with bacterial biofilm may cause periodontal disease is deleterious occlusal premature contact. All individual with a natural occlusion, has a premature occlusal contact point when the mandible is positioned in the centric relation. The clinical effort to achieve occlusal stability by removing all premature dental contact points is almost

impossible. To remove all the interfering premature dental contacts points to promote a stable and permanent condition known as centric occlusion only may be reached artificially, maybe by prosthetic dental treatment when all teeth treated are splinted between them. Mechanoreceptors of the periodontal ligaments may maintain the proprioceptive impulses, providing feedbacks and avoiding dental occlusal interference. Every stomatognathic system may suffers an adaptive process compensating harmful premature dental contact positioning the mandible in a habitual occlusion form, where a masticatory pattern is developed with the maximum contact between antagonist teeth with the charge of the applied occlusal force being dissipated normally in the periodontium. Thus, despite a premature contact during functional mastication, the antagonist teeth do not establish effective contact between them. Normally during masticatory process the food is crushed between the opposing teeth without the teeth establishing effective contact between them. However, during daytime and/or mainly in the sleeping time, the individual under emotional stress may develop eccentric or centric occlusal bruxism, with the antagonist teeth establishing an effective contact, and generating eccentric and powerful forces against antagonist teeth which needs to be dissipated in the periodontium. The occlusal forces produced may be excessive to be dissipated by the periodontal alveolar bone. Then, predisposing risk factors such as emotional stress associated with, premature occlusal contact point may induce in a specific moment, a local and specific fragility in gingival sulcus for endogenous opportunist bacteria establish a rapid transitory acute inflammatory phase, thereby, stimulating the beginning of the periodontal destruction. Understand all etiologic factors that induce periodontal disease is essential to maintain the health status over a long period of time.

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