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# PONTIC MORPHOLOGY AS LOCAL RISK FACTOR IN ROOT DECAY AND PERIODONTAL DISEASE

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## INTRODUCTION:

Infections with various microorganisms are main cause of dental caries and periodontal disease [1].The types of fixed partial dentures includes all-metal, metal ceramic, and resin veneered metal prostheses.Some of the problems that occur on abutments teeth are due to the size and shape of the pontic,which may prevent the sanitizing by classic or special oral hygiene methods,may cause accumulation of plaque under the bridge in the immediate vicinity of the abutments. In this area,pathogenic flora develops andconsequences on the longterm can include the late loss of abutments.It is possible to evaluate a patient as having a highrisk for root decay or periodontal disease because of presence of the type of bacteria in a culture made from area between the pontic and the gingival surface.Some of the problems that occur on the abutments teeth are due to the size and shape of pontic,which may prevent the sanitizing by classic or special oral hygiene methods,may cause accumulation of plaque under the bridge in the immediate vicinity of abutments. In this area, a pathogenic flora develops and the consequences on the long-term can include the late loss of abutments. It is possible to evaluate a patient as having a high-risk for root decay or periodontal diseasebecause of presence of the type of bacteria in a culture made from the area between the pontic and the gingival surface.

## DISCUSSION :

The morphology, design and the dimensions of pontic can be a local risk factor for root decay and periodontal disease. Periodontal disease may occur even in cases of healthy individuals [2]. The clinical signs are usually bleeding gums and bad breath.A number of 200-300 bacterial species are colonizing in the human mouth. Only a limited number of them, mostbeing anaerobes, participate in periodontal disease and dental decay. Mutant streptococci and lactobacilli are called as cariogenic oral bacteria [3,4]. It has been proven that *Streptococcus mutans* is primary cause of dental decay [5,6]*S. mutans* is able to adapt to different conditions of the oral cavity and may have a high resistance even in cases of antimicrobial treatments [7]. The mechanisms that offer increased resistance to *S. mutans* are not completely known [8]. Mutant streptococci including *S. mutans* and *S. sobrinus*have a high virulence in the oral cavity [9], causing tooth decay. On the abutment teeth, these decays

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compromise the longevity of prosthetic restoration. The presence of *S. mutans* was the highest one (22%), revealing a high risk for abutment teeth.

*Actinomyces* is a microorganism that is involved in occurrence of periodontal disease [10]. *Actinomyces* common types identified in the patients with fast and aggressive periodontal disease are *A. israelii*, *A. naeslundii*, *A. viscosus*, *A. odontolyticus*, *A. pyogenes*, and *A. meyeri*[11].Few study revealed that presence of *A. israeli*under the pontic, reveals a potential risk of the periodontal disease for the abutment teeth.

The various substances elaborated by these bacterias determine a protective inflammatory responses [9].The periodontal disease is related to the specific bacteria that are elaborating enzymes, endotoxins, antigens and other substances, which penetrate the gingival sulcus and determine an inflammatory response that can lead to loss of periodontal tissue, pocket formation, loosening and finally tooth loss [6]. The greatest accumulation of plaque occurs mostly beneath the pontics of the single edentulous spaces bridges, even in patients with good oral hygiene habits. If the plaque remains undisturbed,the consequences for the abutments can be loss of attachment and inflammation. This way, the morphology of these ponticsmay cause a shift inthe microbial composition from healthy flora to one characteristic of periodontal disease [11]. The bacterial or plaque accumulation beneath the pontics can determine the appearance of decays on root of abutments and a defense reaction translated as inflammatory response of gingival and surroundings connective tissues, leading first to gingivitis and later even to periodontitis. The results of few studies showed that under the pontic, even in patients with good oral hygiene, microorganisms can be found, which can cause abutment teeth damage by caries or periodontal disease, later resulting in the loss of prosthetic restoration.

## CONCLUSION:

The microorganisms determined wereStreptococcus mutans, S. mitis, S. oralis, Gram-negative bacilli (Bacteroides ovatus, B. thetaiotaomicron) and Gram-positive bacilli (Bifidobacteriumspp., Actinomyces israelii, Clostridium butyricum / beijerinckii) with relevance in the carious and periodontal disease.

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