

## **THE ROLE OF PATHOGENESIS IN THE GROWTH FACTORS OF PERIODONTITIS DISEASE**

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**Abstract.** Periodontitis is an inflammatory disease of the periodontium which is characterized by a progressive destruction of the tissues supporting the tooth. Its primary etiology is an ill-defined series of microbial infections which may be composed of only some of the more than 300 species of bacteria currently recognized in the oral cavity. The disease is currently considered to progress as periodic, relatively short episodes of rapid tissue destruction followed by bone repair, and prolonged intervening periods of disease remission. Despite the apparent random distribution of episodes of disease activity, the resulting tissue breakdown exhibits a symmetrical pattern of alveolar bone loss and pocket formation which is common to several forms of periodontitis, although the distribution of the most affected teeth and surfaces may vary among diseases.

Several reports have indicated that bacterial cells can be found in the pocket wall of periodontitis lesions. The translocation of bacteria into the tissues from the pocket environment is quite common, as evidenced by the common occurrence of bacteremia in patients with periodontitis following relatively minor events such as chewing and oral hygiene procedures.

**Key words:** periodontitis, gingivitis, atrophy, bacterial invasion.

Periodontitis is an inflammatory disease of the periodontal tissues which is characterized by loss of support of the affected teeth, specifically periodontal ligament fibers and the bone into which they are inserted. Periodontitis may begin as a gingivitis which spreads to the underlying tissues. However, gingivitis lesions do not necessarily progress to periodontitis. Clinically, periodontitis lesions may be associated with varying degrees of gingival redness and swelling. In cases of long-standing disease, the gingiva may appear clinically normal with minimal swelling and redness. The gingival surface may have a firm consistency and be stippled. But, periodontal tissue damage may affect the deeper tissues, leading to progressive loss of the alveolar bone and periodontal ligament.

Periodontitis is most readily detected by periodontal probing and radiographically. Visual inspection for gingival changes, while suggestive, may be misleading since periodontitis is not always accompanied by readily detectable

gingival changes, while gingivitis is frequently noted in the absence of periodontitis

Currently, the primary cause of periodontitis is considered to be bacterial infections of long standing, the composition of which may vary from individual to individual and to a lesser extent from site to site on different teeth of the same subject. Although over 300 species of bacteria are currently recognized in the oral cavity, only 5% of these are considered to be strongly associated with periodontitis, with 1% present in over 90% of all cases of periodontitis.

Classification Classically, periodontitis has been subdivided into a number of categories based on what was perceived to be the main etiology of the disease in each case. The main etiologic factors are frequently divided into ill-defined systemic factors and more readily detectable local factors. The latter include mineralized and non-mineralized microbial deposits (i. e., calculus and dental plaque) on the root surfaces, occlusal trauma and "degenerative changes" in the tissues.

Simple periodontitis. Chronic inflammation of the gingiva caused by "local irritation" (plaque and calculus) and associated with horizontal bone loss. Compound periodontitis is. Periodontitis with angular bone destruction due to Periodontosis. A non-inflammatory degeneration of the supporting periodontal tissues which may be aggravatory changes. Occlusal periodontitis (trauma from occlusion). Degenerative and necrotic changes in the supporting periodontal tissues with widening of the periodontal ligament space and angular bone resorption. Periodontal atrophy (including presenile and disuse atrophy). Reduction in the height of the periodontium with thinning of the periodontal ligament and reduction in its cellularity. Causes of the changes not known, possibly associated with diminished occlusal forces.

Current classifications of periodontitis tend to lump most forms of periodontitis in adults into a single category, adult periodontitis. Additional categories have been suggested which represent for the most part assorted forms of the disease occurring in younger patients

Clinical aspects of periodontitis:

Regardless of their classification, most forms of periodontitis are characterized by the presence of gingival inflammation, pocket formation and loss of alveolar bone and periodontal ligament. There are some situations, however, where this description of periodontitis may be too simplistic if not misleading. For example, following successful treatment of periodontitis and correction of the accompanying anatomic defects it is common for a normal periodontium to become reestablished apically to its original location on the tooth. Any recurrence of gingivitis, even in the absence of further bone involvement, might be defined as a recurrence of periodontitis, since the gingivitis is occurring in the presence of diminished tooth support. Therefore, it may be necessary to differentiate between periodontitis and gingivitis with pre-existing bone loss, since the clinical implications as well as the microbial etiology may differ

significantly. For the purpose of this conference, the emphasis will be on the more prevalent form of periodontitis, the adult form.

Pathogenesis of the inflammatory lesion in health, the tooth is anchored in the jaw bone by the periodontal ligament, a highly vascularized and well innervated ligament of dense collagenous fibers which attaches the cementum lining the root surface to the alveolar bone lining the socket. Most of the root, with the exception of a 1-2 mm zone just apical and more or less parallel to the cemento-enamel junction, lies within the bone. The crestal bone and cervical region of the tooth are covered by the gingival tissue which is attached by dense collagenous fibers to the bone as well as the root surface protruding from the socket.

**Conclusion:** Pathogenesis of the periodontitis. La parodontite est une maladie inflammatoire du parodonte qui est caractérisée par une destruction progressive des tissus de soutien de la dent. Son étiologie primaire est une série de maladies d'infections microbiennes qui peuvent inclure certaines des plus de 300 espèces bactériennes couramment observées dans la cavité buccale. La maladie, progresserait périodiquement par épisodes relativement courts de destruction tissulaire rapide suivis par quelque réparation, et de périodes intermittentes prolongées de rémission de la maladie. Malgré la distribution apparemment randomisée des épisodes d'activité de la maladie, la destruction tissulaire qui en résulte montre un modèle symétrique de perte osseuse alvéolaire et de formation.

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