



Classification of periodontal diseases and conditions

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Purpose

A new periodontal classification system has been published in the *Annals of Periodontology* (Volume 4, Number 1, December 1999)(1). Classification systems provide a framework to scientifically study the etiology, pathogenesis, and treatment of diseases in a systematic approach. New classifications or modifications of classification systems should most certainly be expected as our knowledge of periodontal disease grows. These systems allow the clinicians to organize the periodontal needs and concerns of their patients (2). The purpose of this *Clinical Update* is to describe the new classification of periodontal diseases and conditions and compare it to the previously used classification of periodontitis.

Background

The previously utilized classification system came from a consensus reached at the 1989 World Workshop in Clinical Periodontics (3). This system had many shortcomings including considerable overlap in disease categories, associating patient age with onset of disease and rates of progression, and inadequate classification criteria (2). In 1993, Ranney proposed a classification of periodontal diseases that further defined or added new categories (4). Since the 1996 World Workshop in Periodontics recognized the need for a new classification system for periodontal diseases, the 1999 International Workshop for the Classification of Periodontal Diseases and Conditions set out to revise this classification system to help with diagnosis and treatment.

Changes in the Classification System for Periodontal Diseases

There is a detailed classification of gingival diseases and lesions that are either dental plaque-induced or not primarily associated with dental plaque. The dental plaque-induced gingival diseases can be modified with systemic factors, medications, and malnutrition (5). Non-plaque induced gingival lesions can be from a specific bacteria, virus, fungus, genetic origin, systemic condition, traumatic lesion, or foreign body reaction (6).

“Adult Periodontitis” is now termed “Chronic Periodontitis.” This takes away the age-dependent (35 years old)

nature of the adult periodontitis diagnosis. The term “Chronic Periodontitis” does not imply that the disease is nonresponsive to treatment (2). “Chronic Periodontitis” can be subdivided as localized ($\leq 30\%$ of the sites are affected) and generalized ($> 30\%$ of the sites are affected). Disease severity is divided into three categories based on the amount of clinical attachment loss (CAL): *Slight* = 1 to 2 mm CAL, *Moderate* = 3 to 4 mm CAL, and *Severe* = ≥ 5 mm CAL (7).

“Early-Onset Periodontitis” (EOP) is now termed “Aggressive Periodontitis.” EOP included rapidly progressive, juvenile, and prepubertal periodontitis. It was assumed that these diseases affected younger people and there was uncertainty with the upper age limit for this category. Therefore the age-dependent nature of (EOP) was removed (2). Patients who met the clinical criteria for localized juvenile periodontitis (LJP) or generalized juvenile periodontitis (GJP) are now said to have Localized Aggressive Periodontitis (“localized first molar/incisor presentation with interproximal attachment loss on at least two permanent teeth, one of which is a first molar, and involving no more than two teeth other than first molars and incisors”) (8) or Generalized Aggressive Periodontitis (“generalized interproximal attachment loss affecting at least three permanent teeth other than first molars and incisors”) respectively (8). The Rapidly Progressive Periodontitis (RPP) designation has been eliminated with these patients now under the “Generalized Aggressive Periodontitis” or “Chronic Periodontitis” categories. The “Prepubertal Periodontitis” category is now included in “Periodontitis as a Manifestation of Systemic Diseases”(2).

Refractory periodontitis refers to disease in multiple sites in patients which continue to demonstrate attachment loss after apparently appropriate therapy. Because periodontal therapy sometimes fails to arrest the progression of the different categories of periodontitis, refractory periodontitis is not a single disease entity. The refractory designation can be used as an adjective in the new classification, (e.g., refractory chronic periodontitis) and has therefore been removed as a separate disease category (2).

“Periodontitis as a Manifestation of Systemic Disease” has been retained in the new classification, which includes those associated with hematological as well as genetic disorders. Diabetes mellitus, osteoporosis and estrogen deficiency are not included on the list of systemic diseases. All three can be significant modifiers of periodontitis but there is insufficient data to conclude that there is a specific diabetes melli-

tus, osteoporosis, or estrogen associated form of periodontitis (2,9).

“Necrotizing Ulcerative Periodontitis” (NUP) has been replaced with “Necrotizing Periodontal Diseases.” There is still debate over “Necrotizing Ulcerative Gingivitis” (NUG)/NUP and these can be the result of systemic disease but until further research clarifies these questions Necrotizing Periodontal Diseases has been included (2,10).

The “Abscesses of the Periodontium” category has been added since it does present special diagnostic and treatment challenges. This category is based on location (i.e., gingival, periodontal, pericoronal). Clinical features can include: pain, swelling, color change, tooth mobility, extrusion of teeth, purulence, sinus tract formation, fever, lymphadenopathy, radiolucency of the effected alveolar bone, and variable duration (2,11).

“Periodontitis Associated With Endodontic Lesions” category has been added. Because combined periodontal and endodontic lesions may develop independently or as a secondary lesion, this classification does not differentiate as to the initial etiology of the lesion (12).

“Developmental or Acquired Deformities and Conditions” category has been added. This is primarily based on clinical and morphological criteria and the severity and etiologic characteristics could be used as secondary descriptors of the lesions. Also considered were localized tooth-related factors that modify or predispose to plaque-induced gingival diseases/periodontitis such as plaque retentive restorations/appliances and tooth anatomic factors. Mucogingival deformities and conditions can occur around teeth as well as on edentulous ridges. This category also includes both primary and secondary occlusal trauma (2).

Conclusions

It is generally accepted that periodontal disease is widespread in the population. Marshall-Day (13) found that 71% of the population has chronic destructive periodontal disease at any given time, and a study at a military dental clinic by Horning (14) showed that 37% of the subjects had gingivitis only, 33% had early periodontitis, 14% had moderate periodontitis, 15% had advanced periodontitis, 0.5% had juvenile periodontitis and 0.5 % had necrotizing gingivitis. In addition, Bial and Mellonig (15) found a prevalence of 0.36% Juvenile Periodontitis while Melvin, Sandifer, and Gray (16) found a prevalence of 0.76% Juvenile Periodontitis with both studies on naval recruit

populations. These studies represent a considerable amount of periodontal patients in our Navy population. In addition, periodontal conditions associated with recession defects should not be overlooked. Periodontal disease is well documented in our Navy population, and it is important for all dentists to examine and document the periodontal status of each patient. The new classification system helps identify these periodontal diseases and conditions so patients can receive proper referral and treatment.

References

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