Parameter on Occlusal Traumatism in Patients With Chronic Periodontitis*

The American Academy of Periodontology has developed the following parameter on occlusal traumatism in patients with chronic periodontitis. Occlusal therapy is an integral part of periodontal therapy. Patients should be informed about the occlusal problem, therapeutic alternatives, potential complications, expected results, and their responsibility in treatment. Consequences of no treatment should be explained. Failure to treat occlusal traumatism appropriately in patients with chronic periodontitis may result in progressive loss of bone and an adverse change in prognosis, and could result in tooth loss. Given this information, patients should then be able to make informed decisions regarding their periodontal therapy. J Periodontol 2000;71:873-875.

KEY WORDS

Disease progression; dental occlusion; traumatic/diagnosis; periodontium/injury; dental occlusion, traumatic/complications; periodontitis/etiology; patient care planning.

CLINICAL DIAGNOSIS

Definition

Injury to the periodontium may result from occlusal forces in excess of the reparative/adaptive capacity of the attachment apparatus.

Occlusal traumatism affects the supporting structures of the tooth or teeth. The lesion of trauma from occlusion may occur in conjunction with, or independent of, inflammatory periodontal diseases. Although trauma from occlusion and inflammatory periodontal disease may occur concurrently, each condition may be treated separately. The treatment goals and endpoints for each condition may be independent of each other. Occlusal therapy is generally addressed following, or in conjunction with, procedures to resolve the inflammatory lesions.

Occlusal traumatism may occur in an intact periodontium or in a periodontium that has been reduced by inflammatory periodontal disease. In the presence of a reduced periodontium, the effects of occlusal traumatism may be magnified because the resistance to the forces has changed. The presence and degree of tooth mobility should be determined, and a functional evaluation of the occlusion should be performed.

* Approved by the Board of Trustees, American Academy of Periodontology, May 1998.

Clinical Features

A positive diagnosis of occlusal traumatism can be made if some of the signs and symptoms of an injury can be located in some part of the masticatory system. The following represent clinical features of such an injury, but are not pathognomonic for the condition:

1. Tooth mobility: Increasing displacement may be of greater concern since a stable pattern of mobility may indicate adaptation.
2. Tooth migration.
3. Tooth pain or discomfort on chewing or percussion.
4. Radiographic changes such as widening of the periodontal ligament space, disruption of the lamina dura, radiolucencies in the furcation or at the apex of a tooth that is vital, or root resorption. Just as with mobility, stable radiographic findings may indicate adaptation.
5. Tenderness of the muscles of mastication or other signs or symptoms of temporomandibular dysfunction.
6. Presence of wear facets beyond expected levels for the patient's age and diet consistency.
7. Chipped enamel or crown/root fractures.
8. Fremitus.

These clinical signs and symptoms may be indicative of other pathoses. Therefore, differential diagnoses may be established. Use of supplementary

diagnostic procedures may be helpful; e.g., pulp vitality tests and evaluation of parafunctional habits.

THERAPEUTIC GOALS

The goal of therapy in the treatment of occlusal traumatism is to alleviate the etiologic factors and enable patients to maintain a comfortable and functional dentition. In order to achieve this goal, several therapeutic objectives are suggested:

1. Elimination or reduction of tooth mobility.
2. Establish or maintain a stable, reproducible intercuspal position. If the existing relationship is altered through treatment, the new relationship should be physiologically acceptable to the patient.
3. Provide freedom of movement to and from the intercuspal position, including movement in all directions regardless of the initial point of contact.
4. Provide for efficient masticatory function.
5. Develop a comfortable occlusion.
6. Establish an occlusion with acceptable phonation and esthetics.
7. Eliminate or modify parafunctional habits.

TREATMENT CONSIDERATIONS

Treatment of the symptoms of occlusal traumatism is appropriate during any phase of periodontal therapy. Except in the case of acute conditions, treatment is usually first addressed during initial therapy following efforts to reduce or minimize the inflammatory lesion (see Parameters on Chronic Periodontitis, pages 853-858). Evaluation of occlusal symptoms should continue throughout the course of therapy. Treatment may need to be repeated or revised.

Efforts are directed toward elimination or minimization of excessive force or stress placed on a tooth or teeth. Occlusal therapy may be accomplished through several different approaches. The choice depends on several factors, such as the characteristics of the forces, the underlying cause of these forces, the amount of periodontal support of the remaining teeth, and the function of the remaining dentition.

Treatment considerations for the chronic periodontitis patient with occlusal traumatism may include one or more of the following:

1. Occlusal adjustment;
2. Management of parafunctional habits;
3. Temporary, provisional, or long-term stabilization of mobile teeth with removable or fixed appliances;
4. Orthodontic tooth movement;
5. Occlusal reconstruction;
6. Extraction of selected teeth.

In the absence of clinical signs or symptoms, occlusal adjustment to obtain a conceptualized ideal occlusal pattern provides little or no benefit to the patient. Therefore, prophylactic occlusal adjustment appears to be contraindicated. Occlusal relationships may be evaluated as part of periodontal maintenance.

OUTCOMES ASSESSMENT

The desired outcome of treatment of occlusal traumatism is that the patient should be able to masticate with comfort, without further damage to the periodontium. This goal is measured by the cessation or stabilization of the presenting signs or symptoms. These results include, but are not limited to, the following:

1. Mobility should either diminish or be absent or may persist if there is reduced periodontal support. A mobility pattern which is stable and allows the patient to function in comfort without danger of further damage is an acceptable end point.
2. Further migration of the teeth should not occur. The migration which preceded therapy may also resolve from the alteration of the forces generated by the tongue, lips, and cheeks.
3. Radiographic changes diminish or become stable.
4. Relief of pain and improved patient comfort.
5. Relief of premature contacts, fremitus, and occlusal interferences.
6. Establishment of an occlusion that is stable, functional, physiologic, compatible with periodontal health, and esthetically acceptable.

If occlusal traumatism does not resolve, the following may occur:

1. Mobility continues to increase.
2. Tooth migration continues.
3. Persistence of radiographic changes, such as widening of the periodontal ligament space and periradicular or furcation radiolucencies associated with occlusal traumatism.
4. Patient pain and discomfort persist.
5. Premature contacts and occlusal interferences remain.
6. Parafunctional habits persist.
7. Temporomandibular dysfunction may worsen.

SELECTED RESOURCES

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