Guideline for Periodontal Therapy

Originating Group
American Academy of Periodontology

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Research has provided evidence that chronic inflammatory periodontal diseases are treatable.[1-8] Studies have also been directed at providing information to permit better understanding of mechanisms of disease progression and pathogenesis in order to make treatment of periodontal diseases more effective and predictable.[9-11] As a result of advances in knowledge and therapy, the great majority of patients retain their dentition over their lifetime with proper treatment, reasonable plaque control, and continuing maintenance care.[12-21] However, there are some situations when traditional therapy is not effective in arresting the disease. In these instances, the progression of the disease may be slowed, but eventually the teeth may be lost.[14-21]

Adherence to the following guidelines will not guarantee a successful outcome and will not obviate all complications or postcare problems in periodontal therapy. Additionally, these guidelines should not be deemed inclusive of all methods of care, or exclusive of treatment reasonably directed at obtaining the same results. It should also be noted that these guidelines describe summaries of patient evaluation and treatment procedures that have been presented in considerably more detail within textbooks of periodontology as well as in the medical and dental literature. Ultimately judgments regarding the appropriateness of any specific procedure must be made by the practitioner in light of all the circumstances presented by the individual patient.

Scope of periodontics

Periodontics is the specialty of dentistry that encompasses prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of teeth and dental implants. The specialty includes maintenance of the health, function, and esthetics of all supporting structures and tissues (gingiva, periodontal ligament, cementum, alveolar bone, and sites for tooth replacements). Tissue regeneration, management of periodontal-endodontic lesions, and providing dental implants as tooth replacements are, when indicated, integral components of comprehensive periodontal therapy. Tooth extraction and implant site development may accompany either periodontal or implant therapy. Patient management during therapy may include the administration of intravenous conscious sedation.

The goals of periodontal therapy are to preserve the natural dentition, periodontium and peri-implant tissues; to maintain and improve periodontal and peri-implant health, comfort, esthetics, and function. Currently accepted clinical signs of a healthy periodontium include the absence of inflammatory signs of disease such as redness, swelling, suppuration, and bleeding on probing; maintenance of a functional periodontal attachment level; minimal or no recession in the absence of interproximal bone loss; and functional dental implants.

Periodontal examination

All patients should receive a comprehensive periodontal examination. Such an examination includes discussion with the patient regarding the chief complaint, medical and dental history review, clinical examination, and radiographic analysis. Microbiologic, genetic, biochemical, or other diagnostic tests may also be useful, on an individual basis, for assessing the periodontal status of selected patients or sites. Some or all of the following procedures may be included in a comprehensive periodontal examination:

1. Extra- and intraoral examination to detect non-periodontal oral diseases or conditions.
2. General periodontal examination to evaluate the topography of the gingiva and related structures; to assess probing depth, recession, and attachment level; to evaluate the health of the subgingival area with measures such as bleeding on probing and suppuration; to assess clinical furcation status; and to detect endodontic-periodontal lesions.
3. Assessment of the presence, degree and/or distribution of plaque, calculus and gingival inflammation.
4. Dental examination, including caries assessment, proximal contact relationships, the status of dental restorations and prosthetic appliances, and other tooth- or implant-related problems.
5. Determination of the degree of mobility of teeth and dental implants.
6. Occlusal examination.
7. Interpretation of a satisfactory number of updated, diagnostic quality periapical and bite-wing radiographs or other diagnostic imaging needed for implant therapy.
8. Evaluation of potential periodontal systemic interrelationships.
9. Assessment of suitability to receive dental implants.

 Periodontal therapy. *J Periodontol.* 2001;72:1624-1628.

Establishing a diagnosis and prognosis

The purpose of the comprehensive periodontal examination is to determine the periodontal diagnosis and prognosis and/or suitability for dental implants. This process includes an evaluation of periodontal and peri-implant tissues to determine the suitability of the patient for treatments including non-surgical, surgical, regenerative and reconstructive therapy, or dental implant placement. This information should be recorded in the patient's chart and communicated to the patient and the referring dentist when appropriate.

Periodontal diseases and conditions

Diseases of the periodontium may be categorized as gingival diseases, periodontitis, necrotizing periodontal diseases, abscesses of the periodontium, and developmental or acquired deformities and conditions.[22] Gingivitis is gingival inflammation without attachment loss or with non-progressing attachment loss. Other gingival diseases may be modified by systemic factors, medications or malnutrition. Periodontitis is gingival inflammation with progressing attachment loss. Different forms include, but are not limited to, chronic periodontitis, aggressive periodontitis, periodontitis as a manifestation of systemic disease, necrotizing ulcerative periodontitis, and periodontitis associated with endodontic lesions. Periodontitis may be further characterized by degree of attachment loss as slight, moderate, or severe; by extent as localized or generalized; and by post-treatment status as recurrent or refractory. Facial recession involving loss of periodontal attachment and gingival tissue affects children and adults. The prevalence increases with age and adults over 50 have the greatest degree of involvement. This mucogingival condition is often treatable.[23] Edentulous ridge defects result from loss of osseous tissue and can compromise esthetics or complicate future implant placement. Other diseases and anomalies not explicitly described herein may also involve the periodontium.

Development of a treatment plan

The clinical findings together with a diagnosis and prognosis should be used to develop a logical plan of treatment in order to eliminate or alleviate the signs and symptoms of periodontal diseases and thereby arrest or slow further disease progression. The treatment plan should be used to establish the methods and sequence of delivering appropriate periodontal treatment. When indicated, the plan should include:

1. Medical consultation or referral for treatment when appropriate.
2. Periodontal procedures to be performed.
3. Consideration of adjunctive restorative, prosthetic, orthodontic and/or endodontic consultation or treatment.
4. Provision for reevaluation during and after periodontal or dental implant therapy.
5. Consideration of chemotherapeutic agents for adjunctive treatment.
6. Consideration of diagnostic testing that may include microbiological, genetic or biochemical assessment or monitoring during the course of periodontal therapy.
7. Periodontal maintenance program.

Informed consent and patient records

Where reasonably foreseeable risks, potential complications, or the possibility of failure are associated with treatment, informed consent should be obtained prior to the commencement of therapy. The information given to the patient in these circumstances should include the following:

1. The diagnosis, etiology, proposed therapy, possible alternative treatment(s), and the prognosis with and without the proposed therapy or possible alternatives.
2. Recommendations for referral to other health care providers as necessary.
3. The reasonably foreseeable inherent risks and potential complications associated with the proposed therapy, including failure with the ultimate loss of teeth or dental implants.
4. The need for periodontal maintenance treatment after active therapy due to the potential for disease recurrence.

A record of the patient's consent to the proposed therapy should be maintained. Moreover, complete records of diagnosis, treatment, results, and recommended follow-up are essential, starting with the initial examination and continuing for as long as the patient is under care. Where reasonably foreseeable risks, potential complications, or the possibility of failure are associated with treatment, it is advisable to obtain the informed consent in writing prior to commencement of therapy.

Treatment procedures

A broad range of therapies exist in periodontics. No single treatment approach can provide the only means of treating any one or all periodontal diseases. One treatment modality may be appropriate for one section of the mouth while another approach may be suitable at other sites.

When indicated, treatment should include:

1. Patient education, training in personal oral hygiene, and counseling on control of risk factors (e.g., smoking, medical status, stress) with referral when appropriate.
2. Removal of supragingival and accessible subgingival bacterial plaque and calculus is accomplished by periodontal scaling. Comprehensive periodontal root planing is used to treat root surface irregularities or alterations caused by periodontal pathoses. In some instances, these procedures may be incorporated into the surgical treatment.
3. Finishing procedures, which include post-treatment evaluation with review and reinforcement of personal daily oral hygiene when appropriate.

The following courses of treatment may be indicated in addition to the above outlined procedures:

1. Chemotherapeutic agents. These agents may be used to reduce, eliminate, or change the quality of microbial pathogens; or alter the host response through local or systemic delivery of appropriate agent(s).
2. Resective procedures. These procedures are designed to reduce or eliminate periodontal pockets and create an acceptable gingival form that will facilitate effective oral hygiene and periodontal maintenance treatment. Soft tissue procedures include gingivectomy, gingivoplasty, and various mucogingival flap procedures. Osseous procedures include ostectomy and osteoplasty. Dental tissue procedures include root resection, tooth hemisection, and odontoplasty. Combined osseous and dental tissue procedures may be required for management of endodontic-periodontal lesions.
3. Periodontal regenerative procedures include: soft tissue grafts, bone replacement grafts, root biomodification, guided tissue regeneration, and combinations of these procedures for osseous, furcation, and recession defects. Periodontal reconstructive procedures include: guided bone regeneration, ridge augmentation, ridge preservation, implant site development, and sinus grafting.
4. Periodontal plastic surgery for gingival augmentation, for correction of recession or soft tissue defects, or for other enhancement of oral esthetics.
5. Occlusal therapy, which may include: minor tooth movement, occlusal adjustment, splinting, or provision of devices to reduce occlusal trauma.
6. Preprosthetic periodontal procedures include: exploratory flap surgery, resective procedures, regenerative or reconstructive procedures, or crown lengthening surgery, performed to facilitate restorative or prosthetic treatment plans.
7. Selective extraction of teeth, roots, or implants when indicated, in order to facilitate periodontal therapy, implant therapy, implant site development, or implant, restorative and/or prosthetic treatment plans.
8. Replacement of teeth by dental implants.
9. Procedures to facilitate orthodontic treatment including, but not limited to, tooth exposure, frenulectomy, fiberotomy, gingival augmentation, and implant placement.
10. Management of periodontal systemic interrelationships when appropriate.

Periodontal maintenance therapy

Upon completion of active periodontal treatment, follow-up periodontal maintenance visits should include:

1. Update of medical and dental histories.
2. Evaluation of current extra- and intraoral, periodontal and peri-implant soft tissues as well as dental hard tissues and referral when indicated (e.g., for treatment of carious lesions, pulpal pathosis, or other conditions).
3. Assessment of the oral hygiene status with reinstruction when indicated.
4. Mechanical toothcleaning to disrupt/remove dental plaque and biofilms, stain, and calculus. Local delivery or systemic chemotherapeutic agents may be used as adjunctive treatment for recurrent or refractory disease.
5. Elimination or mitigation of new or persistent risk and etiologic factors with appropriate treatment.
6. Identification and treatment of new, recurrent, or refractory areas of periodontal pathoses.
7. Establishment of an appropriate, individualized interval for periodontal maintenance treatment.

The patient should be kept informed of:

1. Areas of persistent, recurrent, refractory, or new periodontal disease.
2. Changes in the periodontal prognosis.
3. Advisability of further periodontal treatment or retreatment of indicated sites.
4. Status of dental implants.
5. Other oral health problems noted that may include caries, defective restorations, and non-periodontal mucosal diseases or conditions.

Factors modifying results

The results of periodontal treatment may be adversely affected by circumstances beyond the control of the dentist.[10] Examples of such circumstances include systemic diseases; inadequate plaque control by the patient; unknown or undeterminable etiologic factors which current therapy has not controlled; pulpal-periodontal problems; inability or failure of the patient to follow the suggested treatment or maintenance program; adverse health factors such as smoking, stress, and occlusal dysfunction; and uncorrectable anatomic, structural, or iatrogenic factors.[10,19,24-28]

The goals of periodontal therapy occasionally may be compromised when: 1) a patient refuses to have the recommended treatment, or to have hopeless teeth or implants removed; or 2) a practitioner elects to temporarily retain a hopeless tooth or replacement because it is serving as an abutment for a fixed or removable partial denture or is maintaining vertical dimension.[29]

Individuals who are unable or unwilling to undergo procedures required to achieve a healthy periodontium and the goal(s) of periodontal therapy or who are medically compromised are examples of patients that may be best treated with a limited therapeutic program.[30] The prognosis of cases treated with a limited therapeutic program may be less favorable.

Evaluation of therapy

Upon completion of planned periodontal therapy, the record should document that:

1. The patient has been counseled on why and how to perform an effective daily personal oral hygiene program.

2. Accepted therapeutic procedures have been performed to arrest the progression of the periodontal disease(s).
3. Periodontal root planing has left subgingival root surfaces without clinically detectable calculus deposits or rough areas.
4. Gingival crevices are generally without bleeding on probing or suppuration.
5. A recommendation has been made for the correction of any tooth form, tooth position, restoration, or prosthesis considered to be contributing to the periodontal disease process.
6. An appropriate periodontal maintenance program, specific to individual circumstances, has been recommended to the patient for long-term control of the disease, as well as for the maintenance of dental implants, if present.

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