

# TREATMENT PLANNING: A PERIODONTIST'S PERSPECTIVE

Successful therapy requires a comprehensive assessment of the patient's dental status and a treatment plan directed at arresting any active disease process and restoring health

**O**nce the periodontal examination, diagnosis and prognosis are completed, a treatment plan is formulated in its proper sequence. Then the practitioner is ready for patient consultation. In this article, treatment planning will be discussed (the documentation and patient consultation have been previously described).<sup>1,2</sup>

Although variation in the treatment plan sequence is often necessary to suit the individual patient, the sequences in Table 1 may serve as a general guideline. It is helpful to categorize the sequence of therapy into the following three areas: disease control phase, corrective phase and maintenance phase.

## A. Disease Control Phase

1. *Emergency treatment* includes relief of pain, bleeding, swelling, etc., which may arise from numerous conditions, such as trauma, acute pulpal and/or periodontal disease. The patient's chief complaint (e.g. esthetics) should be addressed, at least on an interim basis, very early in the treatment sequence.

2. *Initial periodontal therapy* controls or eliminates all the causes of clinical inflammation and occlusal trauma. Thus, besides treating the obvious primary causes of disease with oral hygiene instruction, scaling, root planing, polishing and occlusal adjustment, the secondary etiological factors such as ill-fitting restorations must also be controlled. When parafunctional habits cause tooth mobility, excessive occlusal wear or TMJ dysfunction, occlusal appliance therapy is indicated. Initial

therapy may include raising a muco-periosteal flap for removal of subgingival calculus prior to orthodontic therapy in a patient with subgingival calculus deposits that cannot be removed with "closed" scaling and root planing. Extraction of hopeless teeth is considered part of initial therapy. This is indicated early in treatment, especially when adjacent teeth are being jeopardized (Figs 1,2). Such extractions rarely present a serious problem to the patient and dentist when the teeth being removed are in a non-esthetic area, are not prosthetic abutments and are not essential to maintain the vertical dimension.

3. *Interim prosthetic treatment* is often necessary when extractions compromise esthetics, function or vertical dimension. Additionally, the interim prosthesis can prevent pathological migration as well as act as a test prosthesis in determining adaptation to a new vertical dimension or in assessing whether there is sufficient support and stability for the final prosthesis. It is obvious that any problems that may arise should be determined with the interim prosthesis. The final prosthesis should be delayed until a satisfactory result is achieved with the interim appliance, which may in some cases take up to a year. In order to avoid iatrogenically induced periodontal problems, it is vital that care is taken with both the interim and final prosthesis (Fig 3).

4. *Caries control* with "direct" restorative materials (as opposed to indirect restorations which in-

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1. Strategic extraction of 2.7 is indicated to preserve osseous support for the distal aspect of the first molar



2. Six months post-extraction of 2.7 the prognosis for 2.6 has improved. The 2.6 distal has demonstrated some osseous regeneration and reduction in pocket depth

involve laboratory procedures) should be carried out on all teeth except those that are to be removed early in the treatment plan. Temporary restorations can be placed on those teeth with a questionable periodontal status.

5. *Endodontic therapy* should not be carried out on questionable teeth that might be slated for extraction in the near future. Interim emergency endodontic procedures should be initiated on those teeth that have at least a reasonable chance of being maintained.

### B. Corrective Phase

The corrective phase of treatment begins with a thorough periodontal re-evaluation where complete periodontal examination and data collection is repeated. When comparing the initial and re-evaluation data, an assessment of the patient's home care and healing potential can be appreciated. This vital information guides the dentist in further treatment decisions. It is important to note that most "definitive" treatment decisions should not be made prior to this stage of treatment. It is also noteworthy that diagnosis and treatment planning are ongoing processes. It is at times necessary to modify, change or retreat from previous treatment decisions.

1. *Periodontal and Prosthetic Re-evaluation* is the first step of the corrective phase. This procedure allows the therapist to make judgements about the patient's healing potential. It also allows him or her to assess the results of previous treatment. As mentioned earlier, prognosis is a dynamic parameter. The knowledge gained from this re-evaluation procedure will allow a re-assessment of the prognosis. This input in turn is useful in planning future treatment strategies.

2. *Further Extractions* - The decision to proceed with further extractions should not be made casually. The therapist must have a good reason for extracting a natural tooth. If a tooth

causes no discomfort to the patient, does not interfere with function or the placement of a proposed restoration, does not adversely affect an adjacent tooth or compromise the patient's esthetics (from the patient's point of view) and does not have the immediate potential of causing an acute infection, then there is no pressing indication for extraction. This does not mean that we may not recommend extractions on an elective basis to achieve an overall restorative objective. The key point here is that many teeth that we know can never be restored to ideal health can still be retained for the patient's advantage in spite of many adverse conditions.

3. *Completion of Necessary Endodontic Procedures* - Endodontic therapy may be completed once the therapist is confident that the tooth is periodontally stable. For teeth that require root resection, it is more practical to delay endodontic procedures until about two weeks following root resection surgery. Rarely is there post-surgical discomfort of an endodontic origin within this short period of time.

This sequence of therapy allows the therapist to assess the periodontal status prior to committing the patient to endodontic treatment. It is not uncommon for the degree of bone loss revealed at surgery to be more extensive than anticipated, at times necessitating extraction (Fig 4).

**Table 1: Sequence of therapy**

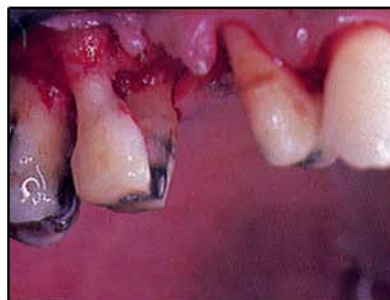
- A. *Disease Control Phase*
  1. emergency treatment/chief complaint
  2. initial periodontal therapy
    - a) oral hygiene instruction
    - b) occlusal control (adjustment, appliances)
    - c) extraction of hopeless teeth
    - d) correcting defective restorations
    - e) scaling and root planing
  3. interim prosthetic treatment
  4. caries control
  5. endodontic therapy (on non-questionable teeth).
- B. *Corrective Phase*
  1. periodontal and prosthetic re-evaluation
  2. further necessary extractions
  3. completion of necessary endodontic treatment
  4. orthodontic tooth movement
  5. definitive periodontal therapy
  6. definitive prosthetic therapy.
- C. *Maintenance Phase*

4. *Orthodontic Tooth Movement* - Periodontal inflammation and occlusal harmony must be carefully controlled in the adult orthodontic patient. It is not unusual to have a six-week to 12-week recall interval for periodontal maintenance and occlusal adjustment for adults in active orthodontic treatment. In the absence of proper maintenance therapy during active tooth movement, the adult patient may be at risk of rapid bone loss.

5. *Definitive Periodontal Therapy* - Definitive periodontal therapy implies those procedures that may yield a periodontium free from inflammation and ultimately stable with regard to



3. Ill-fitting interim crowns result in chronic inflammation as access for plaque control is severely restricted by the crown contours and margins



4. Removal of the mesio Buccal root of a first molar reveals an unanticipated through-and-through furcation mesiodistally on the remaining roots



5. Residual calculus noted during periodontal surgery in spite of pre-surgical scaling and root planing



6. Type of pontic design as seen in the 1.2 area obstructs patient and therapist access for plaque and calculus removal

attachment level. In essence, this means that all local irritating factors need to be completely removed and that a periodontal environment must be established to allow both patient and therapist adequate access for continued removal of any future plaque or calculus deposits. This statement is purposely very general, because it is the concepts of the objectives that are important in the present discussion, rather than the techniques for achieving them.

Some therapists are able to effectively and efficiently remove calculus from deep periodontal pockets while others will have difficulty in relatively shallow pockets (Fig 5). The same is true for patients with regard to the ability to remove plaque. A successful result may be achieved when the therapist honestly evaluates his skills and those of the patient, and proceeds with the necessary steps to overcome his shortcomings. The decision to evaluate a mucoperistial flap for access to remove subgingival calculus and to reduce pocket depth may be perfectly appropriate for one patient with 5 to 6 mm of pocket depth. The key to successful therapy is prescribing the proper treatment for the situation. Sometimes this can only be appreciated in retrospect. This strongly suggests that as therapists we must continuously be evaluating the status of our patients. If we see continued periodontal degeneration, we must redirect our treatment efforts. Too often periodontal degeneration continues because the therapist fails to analyze his treatment critically. Too often patients ask, How long has this been going on? and how come my previous dentist never did anything about it?

Conservative periodontal therapy can be described as therapy that conserves the periodontium. A surgical flap procedure may be more effective and efficient than a prolonged course of closed scaling and root planing procedures.<sup>11,12,13</sup> Definitive periodontal therapy for a patient with localized

juvenile periodontitis may include a course of antibiotic therapy with closed root planing in some areas and open surgical procedures in other areas. Once again, definitive periodontal therapy is complete when a clinical assessment reveals a periodontium that is free from inflammation and stable with regard to attachment levels.

**6. Definitive Prosthetic Treatment** - A periodontal re-evaluation should be carried out first to assess the control of inflammation and the absence of adverse occlusal factors.

As in all treatment decisions, several options should be provided to the patient to allow for choice, if possible. The prosthetic result should complement previous efforts to achieve adequate access for plaque and calculus removal and occlusal harmony. Nothing is more discouraging to see than ill-fitting, bulky crown margins and non-existent gingival embrasures that can induce iatrogenic periodontitis (Fig 6). The placement of crown margins may vary, depending on concerns for esthetics, from just subgingivally to just supragingivally.

### C. Maintenance Phase

This phase will be the subject of a future article.

### SUMMARY

The objective of periodontal therapy is the preservation of the natural dentition in health, comfort and function for a lifetime. Successful achievement of this objective requires a comprehensive assessment of the dental status of the patient as well as an appreciation of the patient's general health followed by a treatment plan that is directed at arresting any active disease process, restoring the dentition to an optimum status (with respect to function, comfort and esthetics) and institution of

appropriate measures for the maintenance of health.

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