

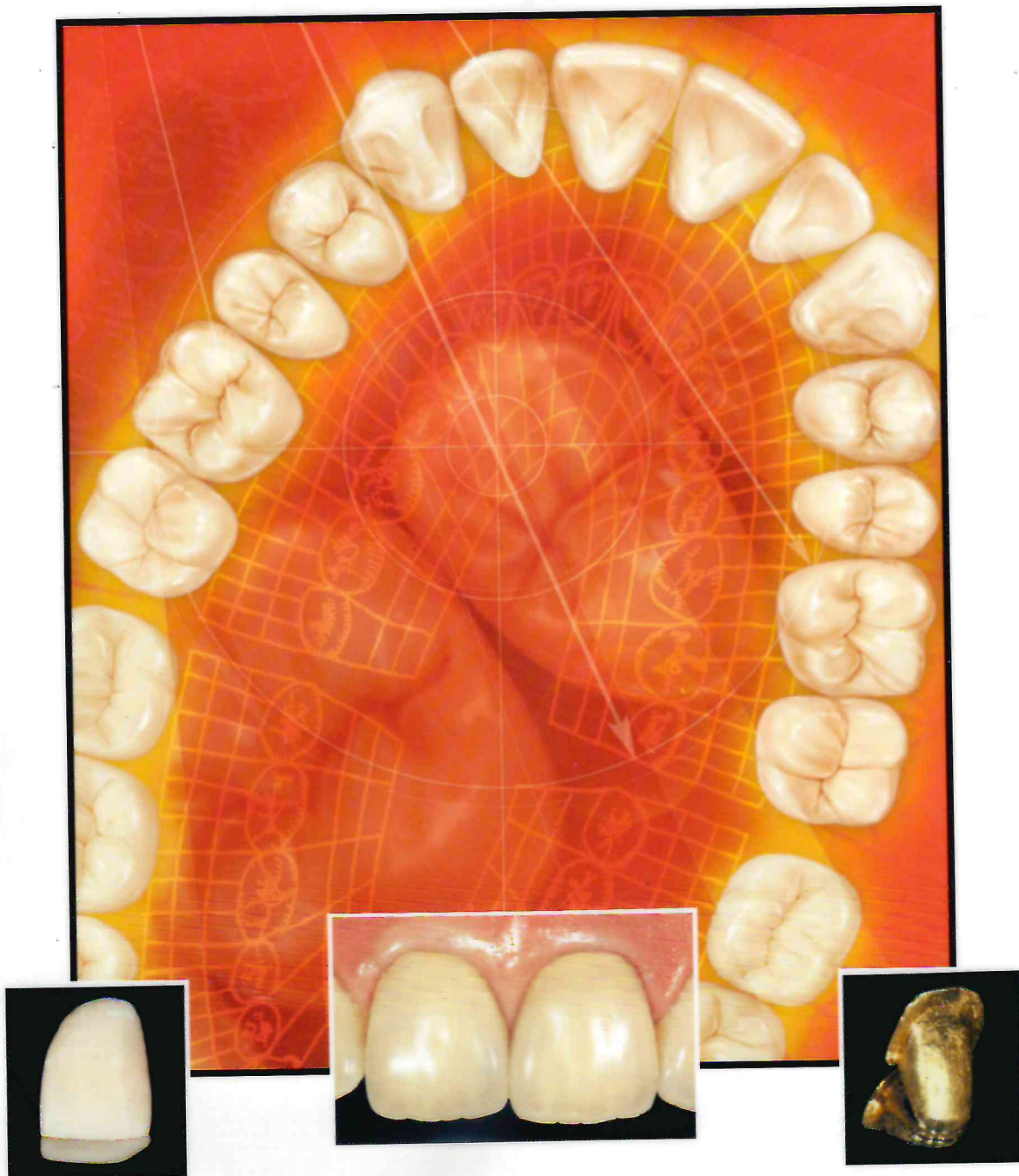
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ADVANCED PERIODONTAL THERAPY

Clinical Realities

MANAGEMENT OF PERIODONTALLY INVOLVED MAXILLARY ANTERIOR DENTITION: A 10-YEAR REPORT

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The primary characteristics of advanced periodontal disease are severe attachment loss and the reduction of alveolar bone support. Due to an inability to resist occlusal forces, the affected periodontium may subsequently experience secondary occlusal trauma. The clinical implications of this condition include increased tooth mobility, migration, excessive spacing, compromised occlusal function, and marginal gingival recession. The manifestation of this disease in the maxillary anterior region is often accompanied by an unaesthetic tooth appearance. The clinician should therefore select a treatment modality that will predictably achieve long-term functional and aesthetic results.

The replacement of severely periodontally involved teeth with implant-supported restorations using a variety of soft and hard tissue regenerative procedures is often justifiable. Long-term maintenance of aesthetics and function when multiple implants are placed in the anterior region, however, has not been adequately documented. Well-rationalized procedures for the development of aesthetic pontics following multiple anterior tooth extractions have also failed to demonstrate long-term results. Preservation of the natural anterior dentition using evidence-based traditional treatment modalities is often indicated in lieu of additionally invasive procedures.

Preoperative Evaluation

A 48-year-old male patient presented for periodontal evaluation and therapy. The patient reported periodic bleeding upon brushing, tooth migration in both anterior regions, occasional abscesses, and a malodor. Clinical examination revealed generalized moderate to deep periodontal pockets. Angle class I occlusion with migration and flaring of both maxillary and mandibular incisors was evident. Occlusal lateral excursions were group guided, while protrusive movements were guided by teeth #8(11) and #10(22) with no interferences. The teeth were characterized by generalized moderate mobility (grade 1) except for teeth #8(11) and #9(21), where mobility was advanced (grade 2). The patient was subsequently diagnosed with generalized moderate to advanced adult periodontitis, which was complicated by secondary occlusal trauma. The long-term prognosis (5 to 10 years) for the maxillary anterior region was considered guarded. A treatment plan that combined periodontal and orthodontic therapies in the maxillary anterior region was formulated. The goals of therapy included control of periodontal inflammation, reconstruction of a stable and functional occlusion, and achievement of an aesthetically pleasing appearance.



Figure 1A. Preoperative radiographs upon presentation. Note the insufficient osseous support available for intra-arch integrity.

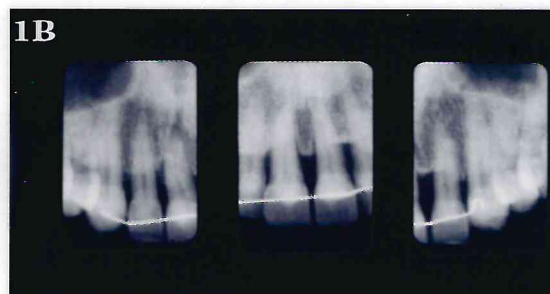
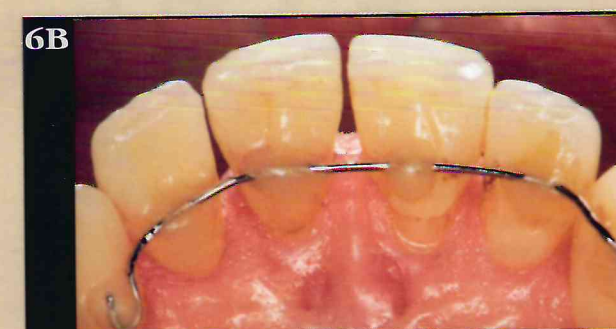
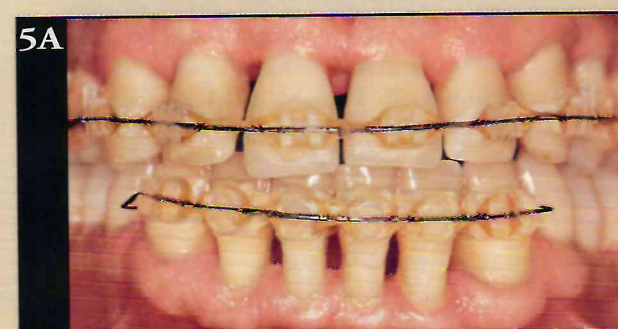
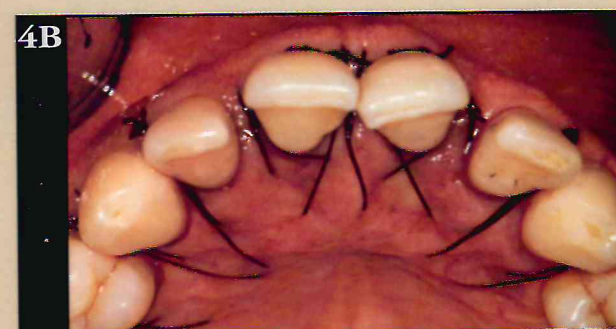
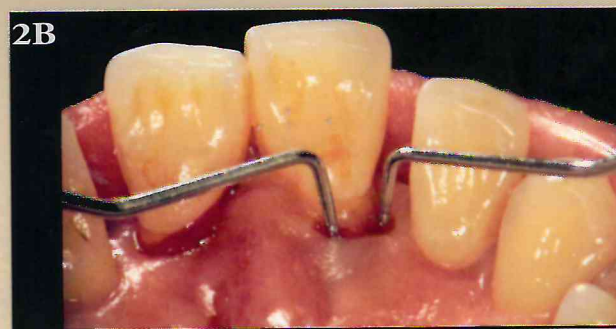
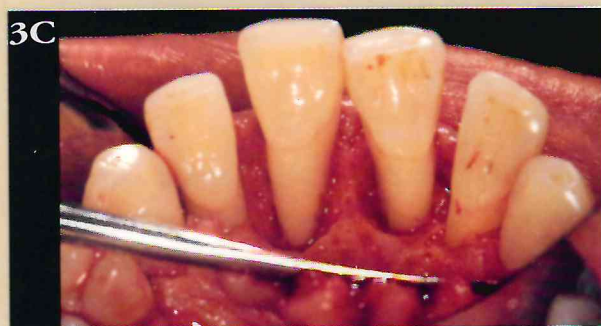


Figure 1B. Postoperative radiographs demonstrate an improved tooth to root ratio, crestal bone profiles, and tooth stability.

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Clinical Realities





Figures 2A,B,C. Generalized pink to red marginal and papillary discolorations that were less pronounced on the buccal surfaces of each arch were evident during the clinical intraoral evaluation. Moderate calculus accumulations were located on the mandibular incisors, and pocket depths in the maxillary anterior region ranged from 7 mm to 10 mm at the palatal aspects of the central incisors. The gingival bleeding index was 70%, and suppuration was present on teeth #8(11) and #9(21).

Figures 3A,B,C. Following the hygienic phase of treatment, periodontal surgery was initiated at the maxillary anterior region. Intracutaneous incisions on the labial and palatal aspects were performed between teeth #6(13) and #11(23). Wide full-thickness flaps were elevated to improve visualization and access to the circumferential defects present around teeth #8(11) and #9(21). Care was taken to preserve the interdental papillae. Calculus deposits were located in the deeper apical regions of the roots. The intrabony defects were thoroughly debrided and hand instrumented to achieve smooth surfaces devoid of necrotic root cement. Chemical conditioning, bone grafting, and guided tissue regeneration were not performed.

Figures 4A,B,C. Since no soft tissue was sacrificed during flap elevation, tension-free approximation of the flaps was implemented to completely cover and seal the surgical field. Interdentary vertical mattress sutures were utilized to ensure primary healing between the flaps and to achieve interdental papillae that were devoid of craters. To improve adaptation of the large palatal flap to the bone and roots, long mattress and "figure-eight" sutures were used. While healing was uneventful, an unavoidable minor recession of the gingiva and the interdental papillae was noted. Pocket depths were reduced to 1 mm to 2 mm. Patient motivation and compliance remained excellent throughout the surgical and immediate postoperative phases.

Figures 5A,B,C. Orthodontic treatment was initiated 2 months following completion of periodontal surgery. Once the mandibular front sextant was aligned, overjet occlusal relationships were established to allow retraction and approximation of the maxillary front teeth. Following achievement of the desired intra- and interarch tooth alignment, fixed lingual retainers were attached to both dental arches using 0.6 mm stainless steel wires and acrylic glue.

Figures 6A,B,C. Supportive periodontal treatment is administered during a regular recall program every 3 months. Ten years following initial treatment, the patient demonstrated healthy functional dentition with slight spacing between teeth #8(11), #9(21), and #10(22). Radiographic evaluation demonstrates maintenance of adequate alveolar support and crestal osseous profiles consistent with healthy bone. Further treatment is not anticipated unless deleterious changes are noted.

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