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The Art of Treatment Planning: Dental and Medical Approaches to the Face and Smile

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Preface

Although innovations and new techniques emerge almost weekly, clinicians are often "trapped" in old protocols that they find safe and comfortable. Scant attention is paid to the serpentine path that led the clinician to choose one treatment option over another, and even less is given to the complex nature of beauty perception. My previous book, *The Art of the Smile* (Quintessence, 2004), addressed all aspects of smile analysis as approached by various disciplines. This book documents the rationale behind our treatment sequence while focusing our attention on the most innovative techniques and clinical procedures of our day.

Harmony, symmetry, proportion, soft and hard tissue health, and esthetics—these are among the goals of modern dentistry. Thirty years ago, when I started my dental education at the Hadassah School of Dental Medicine at Hebrew University, amalgam fillings were the most popular type of dental restorations, implants were a novelty, and light-cure technology had just been introduced. Those who believe that today's dental materials and procedures cannot possibly advance much further need only consider the ways in which computer technology and CAD/CAM capabilities have transformed other fields to know that the sky is still the limit.

This book examines the treatment process from multiple points of view in an effort to balance the very complex process of making a diagnosis, on the one hand, with the need for simplicity and coherence, on the other. Patients today demand individualized treatment plans that address not only their dental and/or esthetic problems but their self-image and personal expectations as well. I do not believe in the so-called cookbook approach adopted by many authors who provide "recipes" for any dental problem. "Make it simple!" was the essence of my instructions to the contributors, all of whom are world-renowned leaders in their various disciplines. My goal was to create a companion to *The Art of the Smile*: The two books can be read as a set or individually by the beginner and the advanced clinician alike, each seeking the tools necessary to achieve an optimal result.

We live in a world that continues to change at a galloping pace. As I write, a new American president is being sworn in—the first African American to hold that office. Although he has not reached the age of 50, the new president has succeeded in communicating his passion, enthusiasm, and beliefs in a whole new, nonconfrontational way. This is what we should strive for.

A spirit of teamwork pervades this book, which, like its predecessor, highlights the multidisciplinary nature of dentistry. Experts in

prosthodontics, periodontics, orthodontics, implantology, plastic surgery, patient management, and dental technology convey a similar passion and enthusiasm for their work and have done their best to transfer their feelings to the reader.

Acknowledgments

I was born to a dentist from the previous generation, who practiced in the days when the clinician had to know everything and rarely referred patients to specialists (who hardly existed). My father, Albert Romano, taught me to always see myself through the eyes of my patients, who rely on my advice and recommendations. We should respect our patients to the same degree that we respect our family and offer no treatment option we would not offer to our own relatives. I owe my career, my wisdom, and my personality to my father, and I hope I have fulfilled his expectations.

With their endless devotion, my own team did an outstanding job. I thank all of them, especially my personal assistant, Evelyn Rosenberg.

I would also like to thank Quintessence Publishing and especially the founder and owner, my friend, H. W. Haase, who supported and believed in me long before I became an established international speaker.

I would like to add a word of thanks to all the contributors, with special mention of André Saadoun for his particularly long and comprehensive chapter.

I would further like to thank Michael Scheflan for recruiting and choosing the contributors in the plastic surgery section of the book.

Last but certainly not least, I would like to thank my beloved wife, Michal, who makes it all possible by supporting me all of these years and taking care of our children in the most devoted and loving way possible. My gorgeous kids, Emily, Lee-Ann, Illy, and Adam, are my own reasons to smile. They give me the energy to keep going!

Case 1: The Compromised Single-Tooth Site

Management of compromised sites, whether previously edentulous or with a failing tooth, is always a challenge, particularly if optimal esthetics are to be achieved.[41,56] While it must be stressed that the "perfect" result is not always achievable in these cases due to the compromised biology and damage to the site, nonetheless much can be learned and gained from the management of these cases. The clinician can subsequently apply this learning so as to provide better management and greater predictability for simpler cases that require implant treatment in the esthetic zone. The reader is encouraged to look into the articles referenced in this chapter for more information regarding the approaches to management of compromised sites.

Presentation and evaluation

Case 1 provides a useful situation to demonstrate the key aspects in the management of implants in the esthetic zone. A 48-year-old man was referred to the practice in 2004 after the loss of his maxillary left central incisor (Figs 6-1a to 6-1g), which had been extracted about 2 months before his referral. The tooth had been endodontically treated and restored with a post crown. This had failed due to root fracture and was subsequently extracted after the patient's general dentist attempted antibiotic therapy of the infection. The patient was then provided with a removable partial denture.

Careful evaluation of the patient reveals a number of challenges and prognostic factors that may influence the likely outcome:

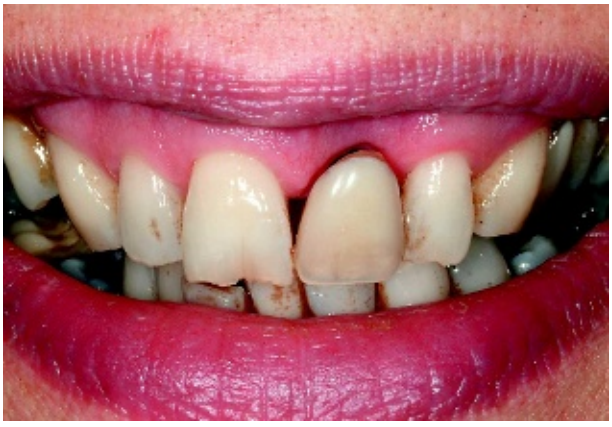

Fig 6-1a Case 1 at presentation. Note the compromised tissue esthetics.

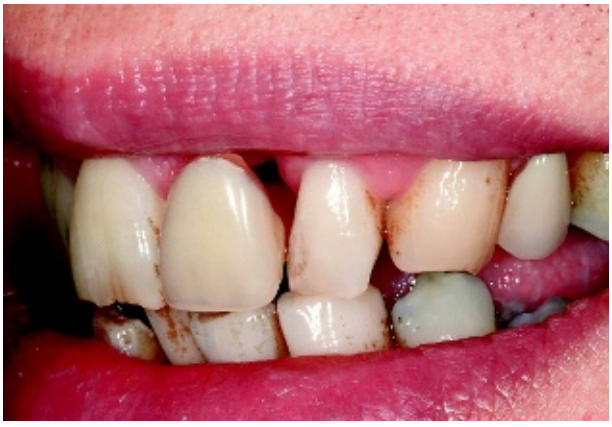

Fig 6-1b Oblique view at presentation reveals the deficient tissue volume.

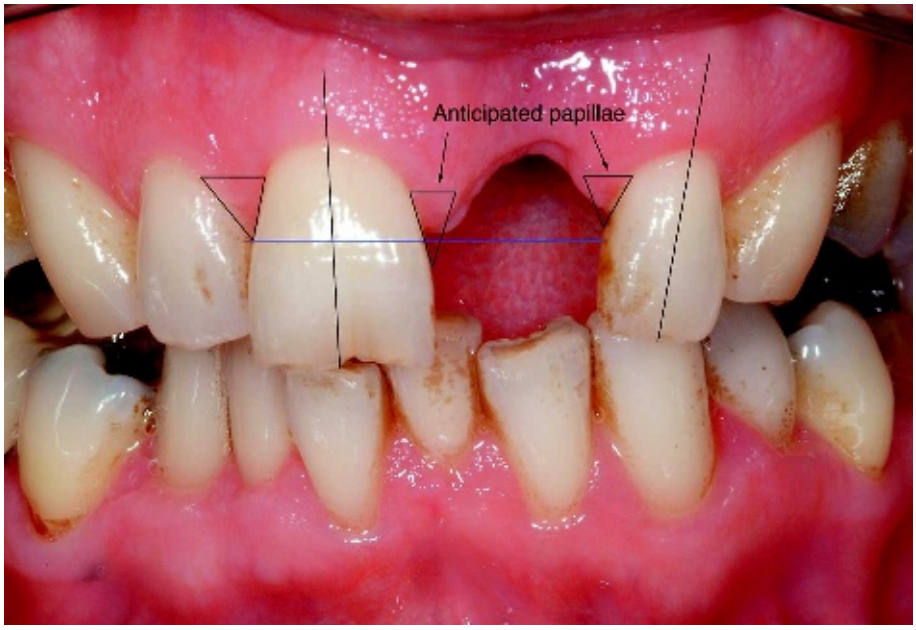

Fig 6-1c Preoperative anterior view. Note the thin tissue, triangular tooth form, blunt papillae, and unfavorable mesial angulation of the lateral incisor.

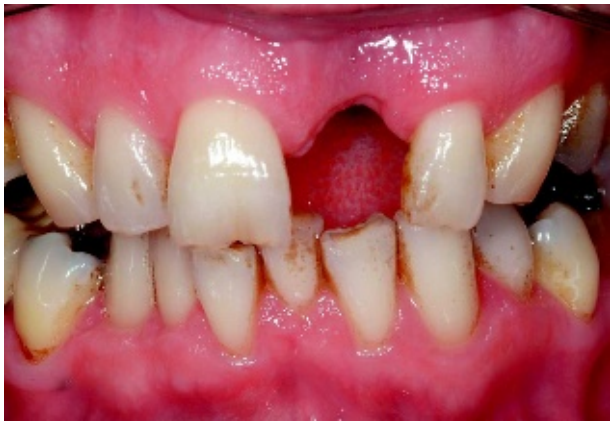

Fig 6-1d Analysis of some of the diagnostic and prognostic factors in this case.

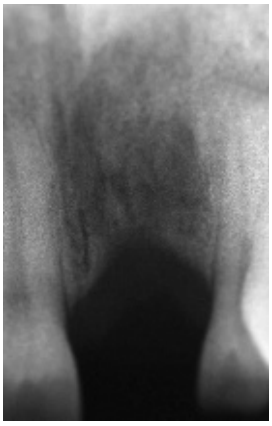

Fig 6-1e Preoperative radiograph.

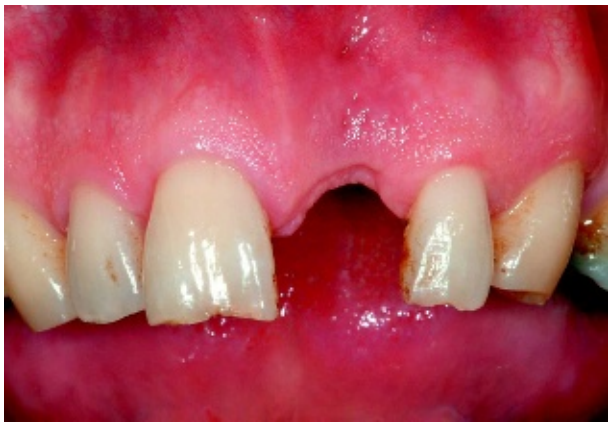

Fig 6-1f Close-up view of the compromised edentulous site.

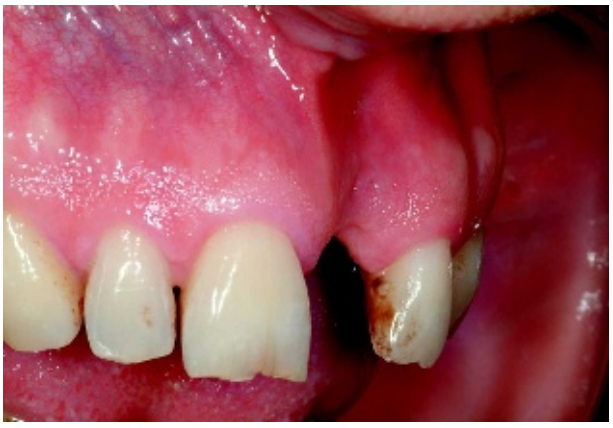

Fig 6-1g Oblique view highlights the prominent root architecture and extent of the defect.

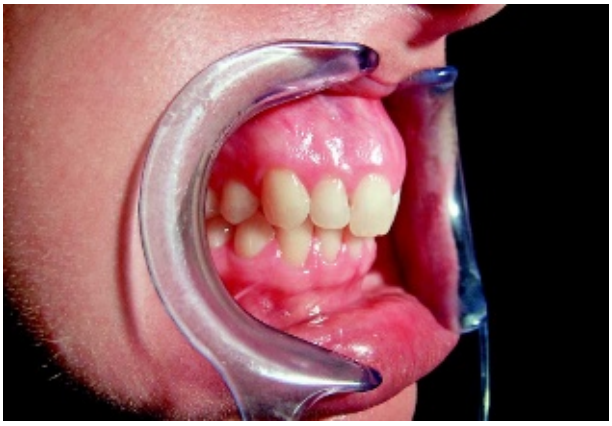

Fig 17-2 Lateral view of overdeveloped maxilla.

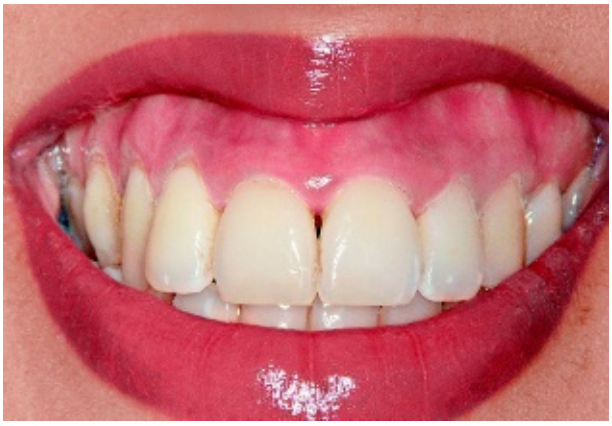

Fig 17-3 Example of a "bowed" effect due to muscle pull.

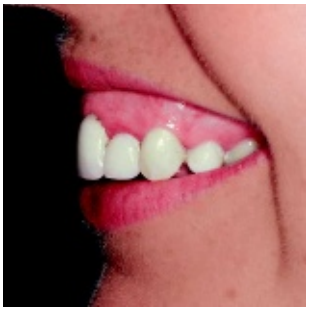

Fig 17-4 Example of extremely high lip line due to deficient upper lip length from nose to vermilion border.

Etiology

There are several causes of the extremely high lip line, including delayed eruption of the teeth, jaw deformities (eg, a protruding maxilla) (Fig 17-2), hypermobile musculature in the upper lip (Fig 17-3), and deficient upper lip length from the nose to the vermilion border (Fig 17-4). As with all aspects of dentistry, a preventive approach can be important, and in some cases, early monitoring and appropriate orthodontic treatment can prevent the situation. For patients who do have an extremely high lip line, however, the diagnosis is essential in the development of a treatment plan.

Assessment

The most important part of the assessment is a lengthy discussion with the patient so that the physician understands the patient's expectations. Is the patient happy with his/her profile? With the resting shape and position of the lips? How dramatic does he/she want the changes to be? (You can demonstrate by holding the lip.) Should asymmetries be corrected to prevent the lip from raising more on one side than the other (Figs 17-5 and 17-6)? How does he/she feel about extensive surgery (maxillary reduction) or dental surgery (crowns or veneers)? Generally, most patients are happy with a raised resting lip height, so it is not the resting position that needs to be altered but rather the excessive movement on smiling hard.

The assessment also should address the state of the patient's anterior teeth to determine whether complex dental work is needed. Frontal and profile photographs are needed of the "resting" and "maximum" smile positions, and a lateral cephalometric radiograph should be taken. This is used to take a series of measurements, as follows:

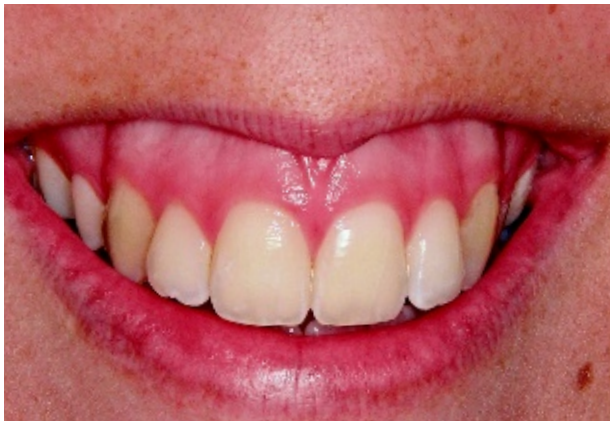

Fig 17-5 Frontal view of very active muscle pull.

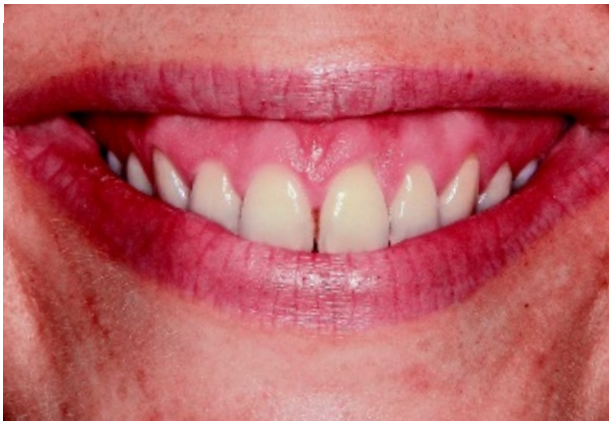

Fig 17-6 Frontal view of asymmetric smile.

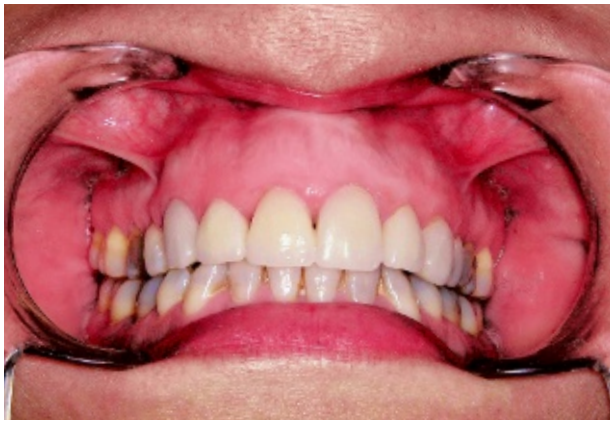

Fig 17-7 Vestibule showing gingiva and mucosa.

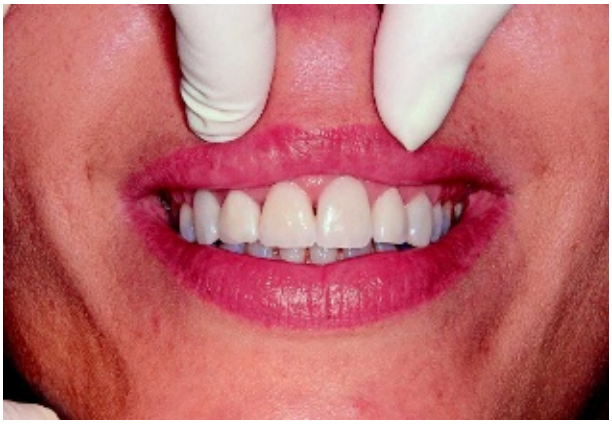

Fig 17-8 Holding the lip to visualize an outcome.

- Amount of attached gingiva: In a normal lip line, 10 to 12 mm of attached gingiva is typical. In an extremely high lip line, there can be as much as 20 to 30 mm of attached gingiva in the area of the lateral incisor (Fig 17-7).
- Depth of the vestibule: Because of the mobile nature of the soft mucosa, it is difficult and somewhat arbitrary to assess the vestibule depth. Experience helps, however. By holding the lip and asking the patient to smile (Fig 17-8), the experienced surgeon can visualize the outcome to decide how much mucosa to remove.
- Width of the upper lip from the vermilion border to the base of the nose (Fig 17-9): If this width is small, it is important that less mucosa be removed on the labial side of the vestibule.
- Strength and angles of pull of the elevating musculature: The muscles that need to be examined include the levator anguli oris, zygomaticus major and minor, levator labii superioris, levator superioris alaeque nasi, and depressor septi nasi (see Fig 17-5).

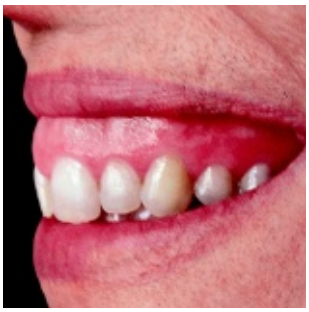

Fig 17-9 Lateral view of small upper lip.