Psychological considerations in orthognathic surgery and orthodontics

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The perceived needs and self-image of patients often differ from those of the orthodontists and oral surgeons who are treating them. Unfortunately, some patients may have unreasonable expectations of the treatment outcomes, so a thorough assessment of patient perception is an important initial step during the treatment planning stage in order to ensure patient satisfaction. Clinicians should also be aware that patients experience various psychological and emotional challenges during the course of the pre-surgical, surgical, and postsurgical stages of treatment. Many factors can influence the patient's level of anxiety, emotional instability, and postoperative satisfaction, so understanding the patient's state of mind during each stage of treatment is essential. Numerous studies have suggested ways to minimize negative feelings and the relationship between surgeon and orthodontist plays an important role in building patient confidence and trust in the entire process. The mutual respect and close collaboration between them can prevent undesirable psychological distress. (Semin Orthod 2016; 22:12–17.) © *2016 Elsevier Inc. All rights reserved.*

Introduction

Various aspects of psychology relative to orthognathic surgical procedures have already been studied and are well documented. It takes a considerable level of commitment and trust for a patient to accept these surgical procedures, which can significantly alter masticatory functions and facial appearance. Recently, Miguel et al.[1] suggested that the current objective of orthodontic treatment associated with orthognathic surgery consists of not only treating the esthetic and functional components of dentofacial deformities but also of considering the patients' psychological factors. Often, while the main focus of the care providers is in providing functional and esthetic improvement objectively, the patient is focused on subjective expectations of treatment outcome that can be difficult to assess.[2] The patient's perception of skeletal disharmony and associated functional problems can be quite different from the parameters that the health professionals use to evaluate the patient's skeletal and facial structure. Subsequently, the patient's expectations of the surgical outcome may be significantly different from that of the providers and are sometimes unrealistic. It is imperative to thoroughly understand the patient's perceptions and expectations regarding treatment success. In this article, patient psychology through the course of orthognathic surgery will be examined and critical considerations will be discussed, and psychological factors related to interaction between surgeons and orthodontists will be explored.

Perception

Self-perception and an awareness of the need for functional or esthetic improvement are important factors in a patient's willingness to seek treatment. This is especially true when an invasive and costly procedure is involved.[3] The desire for improvement may arise from a patient's awareness of existing problems, but not all patients may be initially aware of their problems, so orthodontists or oral surgeons can play a significant role in awakening them to the existing problems and potential solutions. Orthognathic surgery

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requires close collaboration between the maxillofacial surgeon and orthodontist, plus a mutual agreement between the patient and the two professionals as to the diagnosis and treatment plan. Proper objective assessments should be thoroughly communicated to the patient who is contemplating orthognathic surgical procedures; their understanding of the need for treatment is imperative. Certain treatments are likely to be more readily accepted than others.

When comparing Class II and Class III patients, the desire for functional and esthetic improvement is stronger with Class III patients. Class II occlusion is often functional, and patients rarely feel an urgent need for improvements. Patients can chew with posterior dentition in Class II occlusal relationship, and they can function with anterior dentition by simply positioning their mandibles anteriorly unless there are other compounding problems such as an anterior open bite, deep bite with gingival impingement on palatal tissue, etc. Malocclusions are often unnoticed by patients until their dentists inform them of the problem. Even then, patients may reject treatment, especially when surgical treatment is the only option. It is especially difficult for patients to accept invasive surgical treatment when they do not perceive the need for correction. However, there are circumstances where patients may be aware of an existing problem. One reason for Class II patients to seek treatment may be an excessively traumatic over-bite as with a Class II Division 2 occlusal relationship. Excessive wear and chipping of incisors may alert the patient to the need for treatment. These patients may also experience painful palatal tissue damage caused by gingival impingement from extruded lower incisors. Visual damage to anterior dentition and pain can motivate patients to accept the surgical treatment if this is the only possible option. Machado et al.[4–6] illustrated that the esthetic zone is focused in the area of maxillary central incisors, and they play a major role in smile esthetics. Excessive overjet in the case of Class II Division 1 can be another reason for a patient to seek treatment. In this case, the patients may have esthetic concerns or they may have had traumatic experiences with flared incisors. Unsatisfactory self-image and damage to anterior dentition can be potent motivators for patients to seek orthognathic treatment.

In either of the Class II cases, the main reason for seeking orthognathic surgical treatment may be an unsatisfactory facial profile with a severe retrognathic mandible. However, the majority of less severe Class II patients are considered to have acceptable appearance. Despite the fact that surgical treatment may be recommended by dental specialists and indicated by cephalometric measurements, the patient's self-perception of their profile are more important factors in their decision regarding surgical correction.[3]

On the other hand, Class III patients may have functional difficulties when anterior crossbite exists, and patients may experience excessive wear and chipping of the incisors when they are in an edge-to-edge relationship. Class III patients generally are well aware of their facial disharmony, and socially they are considered to be unattractive. Epidemiological analysis of orthognathic surgery in a hospital in Curitiba, Brazil, reviewed 195 cases, and mandibular setback was the intervention most frequently performed.[7] Johnston et al.[8] explored the self-perception of dentofacial attractiveness among patients requiring orthognathic surgery, and reported that concerns and awareness about facial profile were more pronounced among Class III patients while severe Class II patients exhibited lower levels of happiness with their dental appearance. It is more likely for Class III patients to pursue surgical treatment than Class II patients. Even in these Class III patients, laypersons are less critical in their evaluation of their profiles than were orthodontists according to Fabré et al.[9] Surgical treatment for Class III requires careful persuasion from the orthodontist and surgeon.

Vertical problems can coexist in both Class II and Class III patients, and high angles combined with facial concavity are negatively perceived by laypersons.[9] A "long face" or "short faced" is often considered unattractive. Regardless of the true severity of existing functional problems, the patient's perception is the main factor in accepting orthognathic surgical treatment. Unsatisfactory self-image, pain, and damage to teeth within the esthetic zone often have more impact in decision-making than the actual malocclusion.

Pre-surgical orthodontics

This phase of the treatment can often be difficult for the patient to endure both functionally and

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