

Orthodontic Changes Resulting from the Application of Dental Contact Lenses or Laminate Veneers

Danilo Lourenço¹ and Irineu Gregnanin Pedron^{2*}

¹Professor, Department of Orthodontics and Gerodontology, Universidade Brasil, São Paulo, Brazil

²Professor, Department of Periodontology, Implantology, Stomatology, Integrated Clinic, Laser and Therapeutics, Universidade Brasil, São Paulo, Brazil

***Corresponding Author:** Irineu Gregnanin Pedron, Professor, Department of Periodontology, Implantology, Stomatology, Integrated Clinic, Laser and Therapeutics, Universidade Brasil, São Paulo, Brazil.

Received: January 06, 2023; **Published:** January 27, 2023

One of the highlights among the novelties on the dental market are dental contact lenses. These are minimally invasive restorations, with little or no preparation, which is their great advantage. With a thickness of 0.2 mm, they sculpt the smile and can increase the size, modify the shape, and reduce diastemas between teeth [1-7]. However, it is important to take care in oral hygiene and in chewing very hard foods [1,5].

The development of restorative materials and techniques has been stimulated by greater aesthetic demand and the search for the most natural-looking restorations in dental offices. The current Dentistry seeks "invisible restorations", which mimic natural teeth performed with minimal damage to dental tissues. This union between improved restorative techniques, materials with biomimetic properties and the philosophy of preserving the remaining tooth structure favors the achievement of healthy, functional and aesthetic smiles [8].

The first dental contact lenses were developed in 1985 in the United States of America by dental surgeon John R. Calamia. Problems involving the techniques and materials for bonding to teeth caused many fractures and cases of persistent gingival inflammation, which discouraged the use of this restoration. It was only in the late 1990s that the technique was revived with the emergence of ceramics that have increased the strength of veneers, such as aluminized feldspathic and lithium disilicate-based injected ceramics [9,10].

Currently, the confection of dental contact lenses is a widely performed procedure. However, the indications must also be highly evaluated. Studies report that the major failures occur due to inconsistent indications, poor material, preparation technique, cementation and follow-up, and also report as a disadvantage to this technique the high demand of the dentist to perform it [11].

Occasionally, patients request treatments that deviate from the usual standards of aesthetics. Perhaps the most familiar example of this is the desire for abnormally white teeth. For some patients, this is beauty, although the majority of the population may consider false or artificial teeth. Making temporary laminates as white as the patient desires will give the patient the opportunity to think about this and get reactions from others before committing to the result after the final laminate is made. This process will usually clarify the aesthetic acceptability of such a request. Often, sending patients home with "snow-white" provisional laminates is the only way to convince them to modify their expectations and accept more natural-looking restorations [12].

The following are examples of malocclusions and incorrect occlusal functions resulting from errors in the contact lens confection procedure.

Deep bite

Overbite is the vertical overlap of the crown of the upper incisors in relation to the lower incisors. Although the overbite value in patients with normal occlusion can be variable, it is considered normal when it presents values of 2 to 3 mm or one third of the clinical crown. Above these values a marked, exaggerated or deep overbite is determined. According to the literature, untreated deep overbite defines a traumatic relationship between incisors, and an imbalance in the relationship between the maxilla and mandible binomials, which can trigger periodontal diseases, interference in opening and closing the mouth, changes in the temporomandibular joint and the stomatognathic system [1,15,16].

The success of the procedure for making dental contact lenses is directly dependent on the correct diagnosis, which in turn will facilitate planning and execution, thus generating satisfactory and

lasting results. Aesthetic dental treatment often includes changes in the length and/or shape of teeth. These changes have functional and phonetic consequences. A patient may want the incisal length of all upper anterior teeth to be the same. Restoring teeth in this way can create occlusal interference, particularly in lateral protrusion. This can cause discomfort, incisal fracture of the veneers, or destructive wear of the opposing teeth. The patient often cannot anticipate or understand this conflict between esthetics and function [13].

Difficulty in lip sealing

During the resting situation, the individual should keep his lips occluded. However, the absence of lip contact may trigger a neuromuscular imbalance that affects stomatognathic functions and the harmonious growth of the face. To this end, it is necessary to balance the orofacial structures in their muscular, bone-dental and skeletal components. Through the lip seal, the teeth are kept in position by the buccinator complex formed by the orbicularis, mental and buccinator muscles, which act as a muscle belt, guiding the growth of the jaws by the external pressure of dental arch retention; and by the expansion action exerted internally by the tongue, in addition to promoting the intraoral pressure required for the performance of the stomatognathic functions of sucking, swallowing, chewing and breathing. The upper lip has a passive function during lip sealing [17-19].

In cases of very proclined teeth or teeth with a high degree of crowding, lenses are contraindicated, as they demand a large amount of dental wear to achieve better aesthetics and function, which goes against the conservative precepts of a minimally invasive restoration [13,14].

Conclusion

In the reported case, the patient had contact lenses made without precise criteria and indications, generating greater difficulty in sealing the lips. The final facial appearance caused an even greater deepening of the dental bite. These changes may compromise functional aspects and possible injuries to the temporomandibular joint. Another factor to be considered is the quality of the gingival tissue, which is compromised, possibly causing the development of

loss of tooth support tissue due to a significant periodontal disease. The esthetic quality of the lenses is also a matter of discussion, demonstrating a lack of skill in the anatomical construction of the lenses and in the choice of the colors used (Figure 1-5).



Figure 1: Patient presenting absence of passive lip seal.



Figure 2: Forced lip seal



Figure 3: Patient presenting gummy smile and laminated veneers on the upper anterior teeth.



Figure 4: Laminated veneers, installed periodontal disease and deep bite.



Figure 5: Teeth in disocclusion presenting overbite.

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