

*THE ROLE OF OVERFLOW FILLING TO OCCUR ORTHODONTIC BAD HABIT: A RARE CASE REPORT

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Abstract

Malocclusions occurring in children can originate from a genetic origin or from s acquired after birth. "Force" implementation happens due to long-term. This force can be exerted by the tongue, cheek, finger or foreign bodies. In this case report, it was presented the orthodontic treatment of positioning to the vestibule in the arch was caused by applying tongue force to the tooth which overflowed filling.

Case report (J Int Dent Med Res 2016; 9: (1), pp. 86-88)

Keywords: Tongue, Overflowed filling, Bad Habit, Orthodontics.

Received date: 08 September 2015

Accept date: 13 November 2015

Introduction

There is a harmony among the tongue, facial and cheek muscles in the mouth area. However, anomalies may occur when the harmony is broken¹. Applied force over a period of time is a more important factor than is violence for the formation of an anomaly. Forces that have low intensity but act over a long duration cause more tooth movement than severe, quickly acting forces².

Bad habits can disrupt the balance between the soft and hard tissues in the face and cause the formation of a dental or skeletal anomaly². Some of the bad habits include such things as thumb-sucking, usage of a baby bottle or artificial breast, lip-biting, nail-biting, childhood swallowing, insertion of the tongue between the teeth, lip-sucking, tongue-thrusting, breathing through the mouth, insertion of a foreign body

into the mouth, or putting the hands to the chin. The tongue is an important factor in the formation of malocclusion^{3,4}. The tongue has memory and feels the changes occurring in the mouth. If such a change is not in accordance with the recognized anatomical structure, the brain may prompt a constant touching of the tongue to that area and a constant short application of forces.

The elimination of factors that lead to decrease or their transformation into harmless habits is the basis for the treatment of bad habits⁴. In this case report, it was presented the orthodontic treatment of positioning to the vestibule in the arch was caused by applying tongue force to the tooth which overflowed filling.

Case Report

Through anamnesis of a 13-year-old girl admitted to our clinic, it was learned that her right maxillary central incisor was filled with composite three years earlier. The patient reported that the tongue touched routinely to the palatal part of restoration for three years. Clinical examination revealed that the tooth number 11 was located outside the arch, in a vestibule position (Figure. 1,2&3). It was planned to position the tooth in the arch by applying a Hawley retainer (Figure. 4&5). After the patient had used the retainer for four months, it was recognized that the vestibule arch was insufficient and that more application of force by the apparatus to the buccal side of the tooth was required.

*This case was presented at "Istanbul University Faculty of Dentistry 6th International Scientific Congress, Nov21-23, 2013, Congress Center, Istanbul University-Beyazit/Turkey" as Poster Presentations.

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Figure 1. View of the tooth before the positioning to the vestibule in the arch.



Figure 4. Hawley retainer.



Figure 2. View of applying tongue force to the tooth which overflowed filling.



Figure 5. View of emplaced Hawley retainer in maxiller dental arc.



Figure 3. View of the positioning to the vestibule in the arch.



Figure 6. View of fixed in position by the retainer to the neighbour teeth.

After fulfilment of the tooth to the dental arch, it was fixed in position by the retainer to the neighbour teeth (Figure.6). Patient has been followed for two years.

Discussion

There are two obvious advantages of removable appliances. Firstly, such appliances can be made in the laboratory. In this way, it reduces time spent by doctor at the bedside because the appliance can be prepared and adapted in the laboratory. Likewise, the removable appliances that can be assembled also provide social benefits. These advantages make more attractive the removable appliances in terms of both patient and doctor.^{5,6} These advantages are considered for the choice of removable appliances for the treatment of our patients. On the other hand, there are also two disadvantages of removable appliances: the first of which, appliance is required to insert the patient to be effective. That treatment response mainly depends on patient compliance. The second disadvantage is 2 points of contact of teeth has to be provided in order to achieve complex movements in the teeth. It is very difficult to provide with removable appliances, therefore; removable appliances have limited treatment options. Our patient is consistent regarding the use appliances. In our patient treatment, a single point of contact to teeth is considered as sufficient, and only simple movements in palatal direction were performed with the use of appliance.⁷

Teeth are located on a neutral line between the external cheeks and lips and the internal tongue muscle. All structures adjacent to the tooth at the chin resting position take a passive form. Tissue becomes active when maxillofacial tissues in equilibrium are exposed to abnormal pressure, for example, when abnormal pressure habits relating to tongue position, tongue thrusting, lip-sucking or lip-biting occur³.

There is a close relationship between the size, posture and functions of the tongue and orthodontic anomalies⁸. The sense of touch, via sensing filiform papillae is available on the surface of the tongue. Even a small foreign subject inside the mouth, with resulting pressure, stiffness or vibration, is felt by these papillae. The information transmitted by the nerves linked by the filiform papillae is evaluated by the brain, which allows the perception of rigidity, softness, smoothness or roughness of the object⁹. In the presented case, the tongue detected that the morphology of the restored tooth was not appropriate, resulting in short-term pressure on

tooth no. 11 over three years. Instead of using a habit breaker, the overflow filling that was the main source of the problem was modified, and a Hawley retainer was installed because the malocclusion was caused by a force applied to this single tooth.

It takes months to create a habit of malocclusion⁸. Furthermore, it should continue at least half a day in order to create the habit of malocclusion. In the reported case, the longer duration of the applied force as well as the difficulty in recognizing that bad habits had occurred delayed the chances of early intervention and increased the severity of the problems. In addition, as shown in this case report, overflow filling can lead indirectly to bad habits, so an orthodontic problem can be treated in a short time and an economical way with hawley retainer.

Conclusion

Overflow filling is detected through contact by tongue and continues to contact tongue until obtaining suitable anatomy. Prolonged contact can lead to indirect tooth movement. The elimination of the factors that lead to decrease or their transformation into harmless habits is the basis for the treatment of bad habits.

Declaration of Interest

The authors report no conflict of interest and the article is not funded or supported by any research grant.

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