



Gingivectomy as a treatment for gingival hyperplasia induced by orthodontics. Case report

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ABSTRACT

Gingival hyperplasia (GH) is the result of inflammatory changes induced by bacterial dental plaque, and different types of GH are due to local or systemic factors. On the other hand, periodontal problems in patients with orthodontic treatment have been associated with the retention of bacterial dental plaque which produces gingivitis. And it has been described that the nickel ions present in orthodontic attachments could be the etiological factor of the fibroblast proliferation characteristic of GH. Gingivectomy is a surgical procedure whereby the injured part of the gingival tissue is removed to remove or reduce a periodontal pocket. The objective of this article is the report of a clinical case using the surgical technique called gingivectomy in the treatment for orthodontic-induced gingival hyperplasia. A 22-year-old female patient from the city of Morelia, Michoacán, Mexico and is referred to a particular periodontal consultation to make a diagnosis. Her orthodontist refers her to observe gingival hyperplasia clinically. A complete periodontal examination was performed, no bone damage or drilling depths greater than 2mm were observed. Probing bleeding and gingival tissue were observed covering one third of most dental crowns and inadequate hygiene habits were detected, so He performed the gingivectomy. The results showed that positive changes after 8 days and at 12 months the patient no longer had supra osseous periodontal pockets, occasional bleeding, bad breath and a bad taste in the mouth. Gingivectomy accompanied by gingivoplasty, are effective surgical techniques as long as their limitations are known.

Keywords: Gingivectomy, gingival hiperplasia, gingivoplasty.

INTRODUCTION

There are different etiological factors of gingival hyperplasia (GH) generally it is the result of inflammatory changes induced by bacterial dental plaque, however the different types of GH are due to local or systemic factors, such as pregnancy due to hormonal load, diabetic patients, the use of some

RESUMEN

La hiperplasia gingival es el resultado de cambios inflamatorios inducidos por placa dental bacteriana, y los diferentes tipos de hiperplasia gingival se deben a factores locales o sistémicos. Por otro lado, problemas periodontales en pacientes con tratamiento de ortodoncia han sido asociados a la retención de placa dental bacteriana, la cual produce gingivitis. Se ha descrito que los iones de níquel presentes en los aditamentos ortodónticos podrían ser factor etiológico de la proliferación fibroblástica característica de la hiperplasia gingival. La gingivectomía es un procedimiento quirúrgico por el que se extirpa la parte lesionada del tejido gingival para eliminar o reducir una bolsa periodontal. El objetivo del presente artículo es el reporte de un caso clínico utilizando la técnica quirúrgica denominada gingivectomía en el tratamiento para la hiperplasia gingival inducida por ortodoncia. Mujer de 22 años de edad originaria de la ciudad de Morelia, Michoacán y es referida a consulta particular periodontal para realizar diagnóstico, su ortodontista la remite por observar clínicamente hiperplasia gingival. Se realizó examen periodontal completo, no se observó daño a nivel óseo ni profundidades al sondeo mayores a 2mm. Se observó sangrado al sondeo y tejido gingival cubriendo un tercio de la mayoría de las coronas dentarias y se detectaron hábitos de higiene inadecuados, por lo que se realizó la gingivectomía. Los resultados mostraron cambios positivos a partir de los ocho días, y a los 12 meses la paciente ya no presentaba bolsas periodontales supraóseas, sangrado ocasional, mal aliento y mal sabor de boca. La gingivectomía acompañada de una gingivoplastia, son técnicas quirúrgicas eficaces siempre y cuando se conozcan sus limitantes.

Palabras clave: Gingivectomía, hiperplasia gingival, gingivoplastia.

pharmaceuticals such as immunosuppressors and anticonvulsants.¹

During the orthodontic treatment it is common to witness periodontal disorders in patients using orthodontic appliances for more than 18 months.² Periodontal problems in patients with orthodontic treatment have been associated to the retention of bacterial dental plaque which produces gingivitis,³ to the use of orthodontic bands which may produce some irritation.²

Metal alloys and/or alloy elements such as nickel⁴ from which certain orthodontic braces are made of, being in a medium such as the oral cavity, are exposed to interactions that sometimes generate

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manifestations in the oral tissues. Some studies report that nickel ions present in orthodontic attachments could be an etiological factor of the fibroblastic proliferation characteristic of GH.⁵

Gingivectomy is a surgical technique through which the removal of excess gingival tissue is done, that as it is removed provides visibility and access for the elimination of calculus, and any other irritant factors, which can largely predict a favorable environment for the gingival healing, restoration of a physiological contour, and the prediction of long term success of the treatment.⁶

At present a gingivectomy can be done by surgical technique, electro surgery, and laser.

The gingivectomy technique may be done for the following indications:

1. Removal of supraosseous pockets, no matter how deep they are, if the pocket wall is fibrous and firm.
2. Removal of gingival enlargements.
3. Removal of supraosseous periodontal abscesses.

Contraindications of a gingivectomy:

1. Small amount of inserted gum.
2. Bottom of the periodontal pocket apically towards the mucogingival junction.
3. Bone surgery requirement.

A gingivoplasty is a smooth remodeling procedure of the gum to create physiological gingival contours with the purpose of re contouring the gum in the absence of periodontal pockets, more often than not it is complementary of the gingivectomy.



Figure 1: The photograph shows gingival hyperplasia.



Figure 2: Gingival hyperplasia. Gingival tissue covering one third of most dental crowns at the limit of some orthodontic appliances.



Figure 3: Gingival hyperplasia. Gingival tissue covering one third of most dental crowns at the limit of some orthodontic appliances.

It is necessary that a patient who begins an orthodontic treatment, to be periodontally evaluated and be in optimal periodontal conditions for the treatment to be foreseeable. The orthodontic treatment should include for their patients and awareness of oral hygiene habits, dental plaque control, dental brushing techniques, prophylaxis, and an indication of the hygiene devices that the patient requires.⁷ The objective of this article is the report of a clinical case using the surgical technique called gingivectomy in the treatment for gingival hyperplasia induced by orthodontics.

CLINICAL CASE

Female patient, 22 years old, originally from the city of Morelia, Michoacán. She is referred to a private periodontal consult to make a diagnosis, her



Figure 4: The image shows changes after treatment.

orthodontist refers her when he clinically observes gingival hyperplasia (*Figure 1*), the patient states 'I have bleeding gums, bad taste in the mouth, bad breath, and I feel a little bit of itching in the gums'. In her medical history there is no report of relevant pathological records, following a complete periodontal examination, radiographically there is no bone damage, the periodontogram does not show depth in probing greater than 2 mm, clinically bleeding on probing was observed and gingival tissue covering a third of most of the dental crowns and in some dental pieces approaching the middle third of the clinical crown in the limit of some of the orthodontic devices (*Figures 2 and 3*), and inadequate oral hygiene habits were observed. Based on the previous data the decision of doing a gingivectomy is taken following the subsequent stages. As an initial stage oral hygiene instructions were given, crown scrapping and the surgical phase (gingivectomy) in the following steps: 1. The pseudo pockets were explored with the use of a periodontal probe. 2. The periodontal pseudo pockets were marked using a caliper marker, each one of them in different areas, with the aim of joining each mark by means of an incision. 3. With the use of scalpels, appropriate incisions were made, the incision was started apically in the distal part of the dental pieces joining the marks done with the caliper marker, and the incision was made in a 45 degree angle with respect to the dental surface, in order to try to achieve a normal scalloping of the gum. 4. The cut tissue was removed. 5. The tissue was slightly reflected this with the aim of having more access

in order to adjust the scallop. 6. It is then sutured. 7. Sutures were taken off 8 days after the surgery.

RESULTS AND CONCLUSIONS

After eight days the patient showed a positive change, at 12 months the change continued showing in which she did not present: supra osseous periodontal pockets, occasional bleeding, bad breath, bad taste, and a notable change in her oral hygiene habits was corroborated living up to expectations (*Figure 4*). The patient is still under constant supervision in which dental bacterial plaque controls and dental prophylaxis are done. A gingivectomy together with a gingivoplasty, as referred by some authors, are effective surgical techniques, as long as their limitations are known. The supplement that was done in slightly reflecting the tissue, eased the access to make a precise coronal scrapping, and to refine the scallop, whereby this can be taken into account in order to favor the long term prediction of success of the treatment.

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