A Papilloma-like Atypical Gingival Enlargement Treated Using Nd:YAG Laser Surgery: Report of a Case

H Develioglu¹, O Bakar¹, F Goze²

ABSTRACT

Gingival overgrowths can occur due to various factors, such as inflammation, or rarely without a reason and are significant in periodontology. Here, we describe the diagnosis and treatment of a 33-year old female with a papilloma-like atypical enlargement of the gingiva attached to the molar vestibular region of her lower jaw. After the patient's medical history was taken and the clinical examination done, the enlargement was surgically removed with a Nd:YAG laser and evaluated histopathologically. There was an inflamed, oedematous and vascularized stroma with a thick spongy squamous epithelium layer. After six months, there were no problems at the surgical area and recurrence was not observed.

Keywords: Atypical gingival enlargement, gingivectomy, Nd:YAG laser

Agrandamiento Gingival Atípico Semejante a un Papiloma Tratado Mediante Cirugía con Láser Nd-YAG: Reporte de un Caso

H Develioglu¹, O Bakar¹, F Goze²

RESUMEN

Las hiperplasias gingivales pueden ocurrir debido a diversos factores, tales como inflamación, o raramente sin una razón, y constituyen un problema importante en periodoncia. Aquí, describimos el diagnóstico y tratamiento de una mujer de 33 años con un agrandamiento atípico de la encía, semejante a un papiloma, en la región molar vestibular de la mandíbula inferior. Después de hacer la historia clínica del paciente y realizar el examen clínico, el agrandamiento fue eliminado quirúrgicamente con un láser Nd-YAG, y evaluado histopatológicamente. Hubo un estroma inflamado, edematoso y vascularizado con una capa epitelial gruesa, escamosa esponjosa. Después de seis meses, no hubo problemas en el área quirúrgica, y no se observó recurrencia.

Palabras claves: Agrandamiento gingival atípico, gingivectomía, láser Nd-YAG

INTRODUCTION

Gingival overgrowths are important periodontal problems and can be caused by various factors, including inflammation, systemic disease, adverse events, as well as neoplastic and idiopathic causes. A family history is often lacking in idiopathic gingival enlargements. The correct diagnosis is based on medical, dental and family history

West Indian Med J 2014; 63 (6): 661

together with histopathological examination of the removed tissue (1). The final diagnosis is made once the other related factors are eliminated carefully. The Nd:YAG laser is very convenient for eliminating the enlarged gingival tissue (2, 3). In this case, a 33-year old female patient with a papillomalike gingival overgrowth on the mandibular molar, vestibular area was treated with surgery and evaluated histopathologically.

CASE REPORT

A 33-year old female patient visited Cumhuriyet University, Faculty of Dentistry, Department of Periodontology complaining of gingival bleeding and halitosis. The medical history revealed that the patient did not have a systemic

From: ¹Department of Periodontology, Faculty of Dentistry and ²Department of Pathology, Faculty of Medicine, Cumhuriyet University, Sivas, Turkey.

Correspondence: Dr H Develioğlu, Cumhuriyet University, Faculty of Dentistry, Department of Periodontology, Sivas, Turkey 58140. E-mail: hdevelioglu@mynet.com.tr

disease and was not taking any medications that could provoke the enlargement. In addition, there was no similar case in her family history. No extraoral pathology was detected. However, intraorally, there was swelling and bleeding of the gingiva and attachment loss was seen in some teeth. Chronic periodontitis was diagnosed after a radiograph. In addition, a gingival overgrowth, ~1 cm in diameter, was on the mandible in the vestibular molar region, and round, shining red, slightly oedematous, exophytic, papilloma-like tissue was detected on the attached gingival area near the mucogingival line (Fig. 1). There were no major complaints reported by the patient.



Fig. 1: Preoperative intraoral view.

In the first step, phase 1 periodontal treatment was performed and oral hygiene instructions were demonstrated. After the inflammation was controlled, a Nd:YAG laser device (Deka, Calenzano, Italy) was used with a 3 Watt, 100 mJoule therapy protocol, and the enlarged tissue was removed and evaluated histopathologically. No substantial bleeding occurred during the surgery due to the Nd:YAG laser. Histopathologically, there was an inflamed, oedematous and vascularized stroma with a thick, spongy squamous epithelium layer. Moreover, we observed inflammatory cells in the intraepithelial area and a mix of infiltration around the blood vessels (Figs. 2 and 3).

The patient was treated with an analgesic and antiinflammatory agent after the surgery. The healing period was uneventful and the first follow-up occurred one week after surgery. The patient was recalled after six months for followup and no recurrence was observed (Fig. 4). The patient is still being followed.



Fig. 2: General view of the lesion showing inflamed, oedematous and vascularized stroma with a thick, spongy squamous epithelium layer (H&E, ×10).



Fig. 3: Inflammatory cells in the intraepithelial area and a mix of infiltration around the blood vessels (H&E, ×20).



Fig. 4: Postoperative intraoral view (at six months).

DISCUSSION

Nd:YAG laser surgery can be used in periodontal surgery and is very effective, easy and reliable (2, 3). An idiopathic gingival enlargement is a slowly progressive disease. The enlarged gingiva may be localized to specific areas of the mouth, typically the labial gingiva around the lower molars and the maxillary tuberosity. Severity may vary from mild involvement of a few teeth to severe involvement of all teeth (4, 5). Our case was on the mandibular molar region but not near the tooth, only on the attached gingiva. In addition, at first glance, our case resembled an idiopathic type of overgrowth because there was not a logical cause in the medical history; however, clinically and histopathologically it differed from idiopathic enlargement. Therefore, we called it an atypical overgrowth.

There are few studies concerning atypical overgrowths; therefore, this case could contribute to a better understanding for evaluating such cases. Jadhav *et al* (6) reported on a case of a 19-year old male who presented with a maxillary and mandibular chronic inflammatory gingival enlargement that was associated with prolonged orthodontic treatment. Surgery was performed to provide a good aesthetic result. No recurrence was reported at the end of one year. Our case, clinically and histopathologically, resembled chronic inflammatory enlargement, but it differed from that case in location and aetiology.

Similar to our case, Horowitz *et al* (7) reported an atypical gingival overgrowth during an orthodontic treatment. The enlarged tissue was a neurofibromatosis 1 and an inflammatory basis of gingival overgrowth could not be ruled out based on clinical manifestations alone. Even in a patient with a known history of neurofibromatosis 1, an inflammatory fibrous overgrowth during an orthodontic therapy may not be diagnosed as a gingival overgrowth in the clinical setting. The only similarity with this case and that of the index patient was the type of enlargement.

On the other hand, in another case report (8), an atypical generalized gingival overgrowth was detected in a patient aged 60 years with diabetes mellitus and refractory periodontitis. Initially, a gingivectomy was performed, but

recurrence was seen over time. This case of atypical gingival enlargement was not fully similar to ours because there was a systemic disease linked with the overgrowth, which was generalized. In addition, Nitta *et al* (9) reported a case with an unusual gingival enlargement. The enlarged gingiva completely covered the patient's anterior teeth and protruded from the mouth. The enlargement was due to an exaggerated gingival response caused by periodontopathic bacteria. This case is similar to the index case only because of its unusual form described by the authors and differs due to the specific clinical manifestation and local factors.

In conclusion, an atypical form of gingival enlargement is rarely observed in the periodontal practice. A carefully obtained systemic history and clinical examination are important, and histopathological evaluation is also needed. In our opinion, these patients should also be followed to evaluate the risk of recurrence.

REFERENCES

- Kataoka M, Kido J, Shinihora Y, Nagata T. Drug-induced gingival overgrowth – a review. Biol Pham Bull 2005; 28: 1817–21.
- De Benedittis M, Petruzzi M, Pastore L, Inchingolo F, Serpico R. Nd:YAG laser for gingivectomy in Sturge-Weber syndrome. J Oral Maxillofac Surg 2007; 65: 314–6.
- 3. Lasers in periodontics. Position paper. J Periodontol 1996; 67: 826-30.
- Chtuverdi R. Idiopathic gingival fibromatosis associated with generalized aggressive periodontitis: a case report. J Can Dent Ass 2009; 75: 291–5.
- Clocheret K, Dekeyser C, Carels C, Willems G. Idiopathic gingival hyperplasia and orthodontic treatment: a case report. J Orthodont 2003; 30: 13–9.
- Jadhav T, Bhat KM, Bhat GS, Varghese JM. Chronic inflammatory gingival enlargement associated with orthodontic therapy – a case report. J Dent Hyg 2013; 8: 19–23.
- Horowitz GG, Thondukalam AK, Guze KA. Atypical presentation of gingival overgrowth in a neurofibromatosis type 1 patient undergoing orthodontic treatment. Int J Dent Case Reports 2011; 1: 108–11.
- Dizon PDC, Ti VL, Shirozu N, Tako J, Hayakawa H, Yoshinari N et al. Atypical gingival overgrowth associated with diabetes mellitus leading to refractory periodontitis: a case report. Aichi Gakuin J Dent Sci 1999; 12: 71–9.
- Nitta H, Kameyana Y, Ishikawa I. Unusual gingival enlargement with rapidly progressive periodontitis. Report of a case. J Peridontol 1993; 64: 1008–12.