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Case Report

Complete Remission of the Gingival Overgrowth after Non-Surgical Periodontal Treatment in Epileptic Patient under Anticonvulsant Therapy

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Abstract

Several adverse reactions resulting from the administration of drugs on the stomatognathic system, particularly on the gingiva, are known. Drug-induced gingival overgrowth is often developed by the administration of immunosuppressive drugs (cyclosporin A), calcium channel blockers (nifedipine) and anticonvulsants (phenytoin, phenobarbital, carbamazepine and valproic acid). Generally, the recommended treatment for gingival overgrowth is surgical excision, usually by the gingivectomy technique; however, it is necessary to perform basic periodontal treatment prior to surgery. The purpose of this paper is to present the case of a patient who presented with gingival overgrowth after taking phenytoin to control her seizures. There was complete remission of the gingival overgrowth by basic periodontal treatment (oral hygiene instruction and sessions for scaling and root planing). The benefits of the clinical and histological effects of basic periodontal treatment on the remission of gingival growth were discussed.

Keywords: *Gingival Overgrowth; Seizures; Phenytoin; Periodontal Diseases; Oral Manifestations*

Introduction

Several adverse reactions resulting from the administration of drugs on the stomatognathic system are known. Particularly on the gingiva, the development of drug-induced gingival overgrowth is common, caused by the administration of immunosuppressive drugs (cyclosporin A), calcium channel blockers (nifedipine) and anticonvulsants (phenytoin, phenobarbital, carbamazepine and valproic acid) [1-6]. Recently, the association between gingival overgrowth and the administration of anticonvulsant drugs such as lamotrigine (61%), oxcarbazepine (71%), phenobarbital (53%), phenytoin (50%), valproic acid (44%) and carbamazepine (32%) has been verified [5-7].

Gingival overgrowth is clinically characterized by an increase in the gingiva, usually starting with the interdental papillae, with a nodular or sometimes granular aspect, which may cover the dental crowns, erythematous, usually associated with periodontal diseases and consequently presenting calculus and accumulation of dental biofilm, purulent suppuration, gingival bleeding and halitosis [1-6,8,9].

Regarding histopathological features, drug-induced gingival overgrowth is similar to inflammatory gingival hyperplasia. Etiologic factors (drugs) can be considered as variables, although the concomitant presence (as cause or consequence) of periodontal disease should be considered in the therapeutic conduct and management. Thus, periodontal disease (cause or consequence) should be treated and controlled before the institution of surgical treatment of gingival overgrowth [4,8].

Generally, the preconized treatment of gingival overgrowth is surgical excision, in various forms (conventional gingivectomy, electrosurgery, laser) [9-11]. Additionally, the dental surgeon may ask the physician to substitute the drug (etiologic factor) with another drug that does not cause gingival overgrowth [4,12]. Some studies have reported the regression or remission of gingival overgrowth by instituting basic periodontal treatment prior to surgical treatment [13-18].

Purpose of the Study

The purpose of this article is to present the case of a patient who presented with gingival overgrowth due to the administration of phenytoin for seizure control. There was complete remission of the gingival overgrowth by basic periodontal treatment (oral hygiene instruction and sessions for scaling and root planing).

Case Report

A Caucasian female patient, 41-year-old, came to the periodontal private practice complaining of swelling and generalized gingival bleeding.

Clinically, the patient had severe generalized periodontal disease, characterized by the presence of calculus and dental biofilm; gingival edema; erythematous coloration and smooth and shiny surface, with loss of the salutary aspect of "orange peel" due to inflammation; presence of purulent secretion and strong halitosis. The absence of teeth 14, 15, 18, 24, 25, 28, 36, 37, 46 and 48 was observed. The patient also presented a hyperplastic profile of the gingiva, with an evolution time of 6 months (Figure 1 and 2).

Radiographically, advanced horizontal alveolar bone loss was noted, in addition to radiopaque images adjacent to the roots, inherent to dental calculus (Figure 3 and 4).

Figure 1: Initial clinical aspect: chronic periodontitis and gingival overgrowth (frontal view).

Figure 2: Lingual view of the lower anterior teeth and gingival overgrowth (pre-treatment).

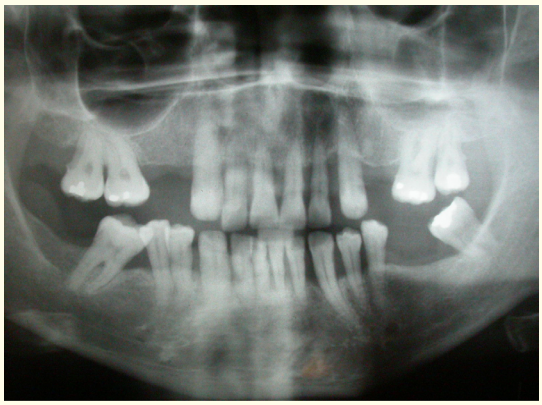

Figure 3: Initial radiographic aspects (panoramic radiograph) : advanced and generalized bone loss.

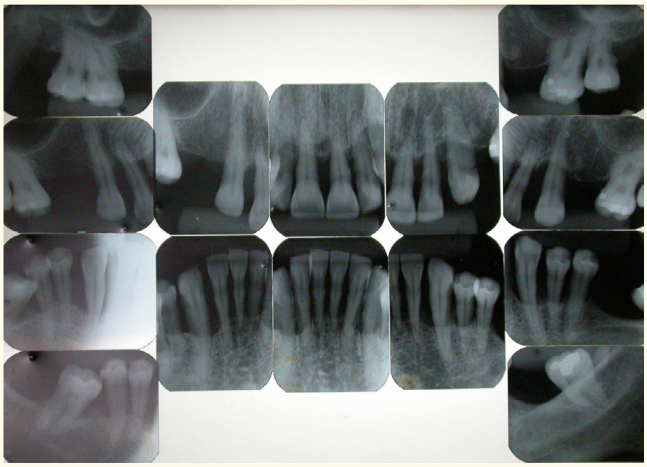

Figure 4: Periapical radiographs: details of bone loss and radiopaque images of dental calculus.

Regarding the systemic health condition, the patient reported seizures for 12 months, being controlled by phenytoin. This drug was responsible for the hyperplastic pattern of the gingiva, characterizing drug-induced gingival overgrowth. The physician was questioned about the possibility of substituting phenytoin with an alternative drug. On medical recommendation, phenytoin was gradually replaced by phenobarbital, which has a low incidence of gingival overgrowth as an adverse reaction.

Treatment planing included basic periodontal therapy, followed by surgical treatment to remove the gingival overgrowth. Basic periodontal treatment was performed, starting with oral hygiene instruction and followed by scaling and root planing. However, the case was resolved by the complete remission of the gingival overgrowth (Figure 5 and 6), avoiding the gingivectomy.

Currently, the patient is undergoing supportive periodontal therapy (periodontal maintenance) and has shown no signs of recurrence of the periodontal disease and gingival overgrowth for 24 months. The administration of phenobarbital also aided in the management of the gingival overgrowth, preventing its recurrence.

Figure 5: Final clinical aspect after basic periodontal therapy: complete remission of gingival growth after basic periodontal treatment (Front view).

Figure 6: Lingual view of the lower anterior teeth and complete remission of gingival overgrowth (post-treatment).

Discussion

Basic periodontal treatment, consisting of oral hygiene instruction and scaling and root planing sessions, indicating control of

periodontal disease, may favor remission of gingival overgrowth [13,15,16]. Several studies have reported this result, regardless of the drug causing the gingival overgrowth: nifedipine [1,4,13,15,16], phenytoin [3] or cyclosporine A [2,4,18]. These studies showed an increase in the clinical parameters of periodontal disease (Gingival, of Plaque and Bleeding Indices and Periodontal Pocket Probing Depth), as well as a significant improvement in the considerable reduction in gingival overgrowth (Hyperplasia Index) [15,18], as was observed in the present report. The justification for this finding lies in periodontal disease as one of the etiological factors of gingival overgrowth [7].

Aimetti., *et al*. (2008) treated transplant patients with oral hygiene instruction and supra and subgingival scaling procedures (with ultrasonic and manual instruments), with the purpose of reducing or eliminating gingival inflammation. Reductions in clinical parameters were observed, as well as a reduction in the inflammatory infiltrate and changes in connective tissue composition of the patients [18].

Histologically, non-surgical periodontal treatment has been shown to reduce significantly the amount of total inflammatory cells, gingival vessels and fibroblast proliferation rate in gingival overgrowth [18].

Recently, it was demonstrated the importance of oral hygiene - step by step - using conventional brushes, tuft type, interdental and dental floss, associated with periodontal treatment (scaling and root planing) in the almost complete remission of gingival overgrowth. The lesion, despite being localized, had an inflammatory etiology resulting from periodontal disease [17].

Surgical excision has been considered the main therapeutic option, especially for patients with severe gingival overgrowth [4,10,11,14]. It has been suggested that the non-surgical approach benefits the patient if it can be performed prior to the start of medication, although in many cases this may not be feasible. However, it has also been indicated for reducing the gingival inflammatory process and aiding in reducing the recurrence rate and should be adopted prior to the surgical procedure [4,14].

Additionally, replacing drugs with others that do not cause gingival overgrowth has also been reported to aid control recurrence, as well as presented by us [2,4,12].

Conclusion

Non-surgical periodontal treatment, defined by oral hygiene instruction and scaling and root planing sessions, play an important role in the management of periodontal diseases and drug-induced gingival overgrowth. In the present report, complete remission of gingival overgrowth was observed after basic periodontal treatment. It is important to report the maintenance of dental biofilm control, preventing the recurrence of gingival overgrowth. Substitution with other drugs can also aid prevent the recurrence of gingival overgrowth.

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