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ANTIHYPERTENSIVE DRUG-INDUCED GINGIVAL HYPERPLASIA: A CASE REPORT

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SUMMARY

Calcium channel blockers used in hypertension patients, immunosuppressants used to prevent organ rejection in transplant patients, and anticonvulsants used in epilepsy patients are the three main groups of drugs known to cause drug-induced gingival overgrowth. Drug-induced gingival overgrowth can be controlled through elimination of local factors, mechanical and chemical plaque control, good oral hygiene, and ending medication or replacing it with another drug. This case reveals the pre-treatment and post-treatment clinical status of a patient who was admitted to our clinic with gingival overgrowth complaint due to the use of amplodipine for a long time due to hypertension. In this case, adequate improvement in the gingival tissue was achieved by surgical procedures conducted on the overgrown gingival tissues and careful plaque control.

Key words: *Gingival overgrowth, calcium-channel blockers, antıhypertensive drugs.*

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ANTİHİPERTANSİF İLACA BAĞLI DİŞETİ HİPERPLAZİSİ: BİR OLGU SUNUMU

ÖZ

Hipertansiyon hastalarında kullanılan kalsiyum kanal blokerler, organ nakli olan hastalarda organ reddini önlemek için kullanılan immunsupresifler ve epilepsi hastalarında kullanılan antikonvülsanlar; ilaca bağlı diş eti büyümesine yol açtığı bilinen üç ana ilaç grubudur. İlaca bağlı dişeti büyümeleri, lokal etkenlerin ortadan kaldırılması, mekanik ve kimyasal olarak plak kontrolü, iyi bir oral hijyen, ilacı kesme ya da başka bir ilaçla değiştirme ile kontrol altına alınabilir. Bu olgu, hipertansiyon nedeni ile uzun süre amplodipin kullanımı sonucu dişeti büyüme şikâyetiyle kliniğimize başvuran bir hastanın tedavi öncesi ve sonrası klinik durumunu ortaya koymaktadır. Sunulan vakada aşırı büyüyen dişeti dokularına yapılan cerrahi işlem ve dikkatli plak kontrolü ile dişeti dokusunda yeterli ölçüde iyileşme sağlanmıştır.

Anahtar Kelimeler: *Gingival büyümeleri, kalsiyum-kanal blokerleri, antihipertansif ilaçlar.*

INTRODUCTION

Although gingival overgrowth depends on many etiological factors, the primary factor is reported to be the dental plaque. Drugs, age, gender, local factors and genetic factors are other factors that may affect this condition.[1] It was observed that dental plaque causes the development of gingival overgrowth, moreover, regular plaque control and oral hygiene decrease or prevent the formation of gingival overgrowth.[2]

Calcium channel blockers have been used since 1978 to treat postmiocardial syndrome, angina pectoris and hypertension.They can be chemically classified as phenylalkylamine derivatives (verapamil), dihydropyridines (nifedipine, isradipine and amlodipine), and benzothiazepine derivatives (diltiazem).[3] The gingival overgrowth related to calcium channel blockers (nifedipine) was firstly reported by Ramon et al., in 1984.[4] In case studies to date, it has been reported that gingival overgrowth is associated with five drugs involved in calcium channel blockers. These drugs are amlodipine[5], felodipine[6], diltiazem[7], nitrendipine[8] and verapamil[9]. Amlodipine is a long-acting calcium channel blocker. It provides vasodilation in coronary and peripheral arteries by reducing

myocardial contraction and oxygen requirement.[3] It was firstly shown in 1994 by Seymour et al., to cause excessive gingival overgrowth. Although nifedipine is known to trigger gingival overgrowth in high prevalence; amlodipine has also been frequently reported as one of the potential etiological causes of gingival overgrowth.[5]

Today, the treatment of drug-induced gingival overgrowth cases are performed through initial treatment (tooth surface cleaning and root surface flattening) according to the severity and fibrotic status of the growth, oral hygiene training with periodontal flap, gingivectomy operations, conventional, electro-surgery and dental laser methods.[10]

In this case, clinical features and treatment of gingival overgrowth of a patient are presented who has been using amlodipine, one of the drugs used in the treatment of hypertension, for 5 years.

CASE REPORT

The 47-year-old female patient was admitted to Adıyaman University Faculty of Dentistry, Department of Periodontology due to bad breath, gingival overgrowth and bleeding complaints. It was learned from the medical history of the patient that she had been suffering from hypertension for 5 years, and therefore used amlodipine (Norvasc 10 mg tablet, Pfizer, Istanbul).

The patient's clinical examination showed she had a full-mouth fixed restoration. It was detected that the patient had a very poor oral hygiene, common supra and subgingival calculus and severe, generalized, dark-red-colored, painless, and lobular gingival overgrowth in the vestibule area of the maksilla and mandibula. The gums were determined to be hyperemic with bleeding on probing (Figure 1).

As a result of the medical consultation, it was learned that the patient did not have any risk in terms of periodontal initial treatment and surgical procedures to be performed and the patient's medication was replaced with an appropriate medication. The patient was given detailed information about the treatments and a signed consent form was taken from her.

The patient was referred to the Department of Prosthodontics, Faculty of Dentistry, Adıyaman University for the removal of the prosthetics. After the removal of the prosthetics, oral hygiene training was given, and subsequently, periodontal initial treatment (scaling and root planing) was performed (Figure 2). 2

months later, the patient underwent gingivectomy and gingivoplasty, and a periodontal pat was placed in the operation area. After one week, periodontal pat was taken and the operation area was washed with saline 0.9% NaCI. The patient was called back for a follow-up 10 days later (Figure 3). Gingival overgrowth treatment of the patient was completed and she was prepared for prosthetic treatment. Following the recovery period, oral rehabilitation of the patient was ensured (Figure 4).

DISCUSSION

Gingival overgrowth is a common clinical finding among gingival diseases. It is an important periodontal problem both in terms of forming a suitable area for microbial dental plaque and in terms of its non-aesthetic appearance.

It is not known exactly by which mechanism the drugs that cause gingival hyperplasia create gingival overgrowth. Clinically, drug-induced gingival overgrowths start from the interdental region mostly 1-3 months after the use of the mentioned drugs. Although it is seen in both anterior and posterior regions, it has been observed mostly in the lower and upper anterior regions and areas where inflammation is intense. No gingival overgrowth was observed in toothless areas.[11]

In a study on dogs conducted by Thomason et al., 8.5% gingival overgrowth was observed as a result of amlodipine use and gingival overgrowth began to decline at the first 2 weeks following discontinuation of the medication, completely disappearing within 6 months.[12]

Amlodipine, a calcium channel blocker, causes less growth compared to nifedipine. However, none of the anti-hypertensive drugs other than calcium channel blockers are known to cause gingival overgrowth. Therefore, the initial treatment, if possible, should be replacing the patient's medication with another drug that does not cause overgrowth.[14] With this treatment approach, gingival lesions can be healed within 1-8 weeks. However, most of the patients did not respond to this treatment method. Professional debridement has been efficient on some patients, along with scaling and root planning. Although non-surgical treatment benefits, gingival overgrowth should be removed surgically in many patients due to aesthetic and functional reasons.

In our case, subsequent to the consultation with the patient's doctor, the medication was replaced with an alternative drug, and oral hygiene

education was given together with non-surgical periodontal treatment; however, since the gingival overgrowth could not be stopped, it was surgically removed, and thus, the gum was prepared for prosthetic treatment.

CONCLUSION

The use of drugs in treatment of chronic illnesses that are causing gingival overgrowth is increasing. In patients with drug-induced gingival overgrowth, treatment is performed by replacing the drug if possible, removing local inflammatory factors such as bacterial plaque and calculus. When these treatment options are inadequate, surgery is recommended but post-surgery recurrence rates are high. Further studies are needed to fully understand the pathogenesis of gingival overgrowth and to regulate models that prevent gingival overgrowth.

Conflict of interest

There are no financial supporters of the study and the authors do not have any conflict of interest.

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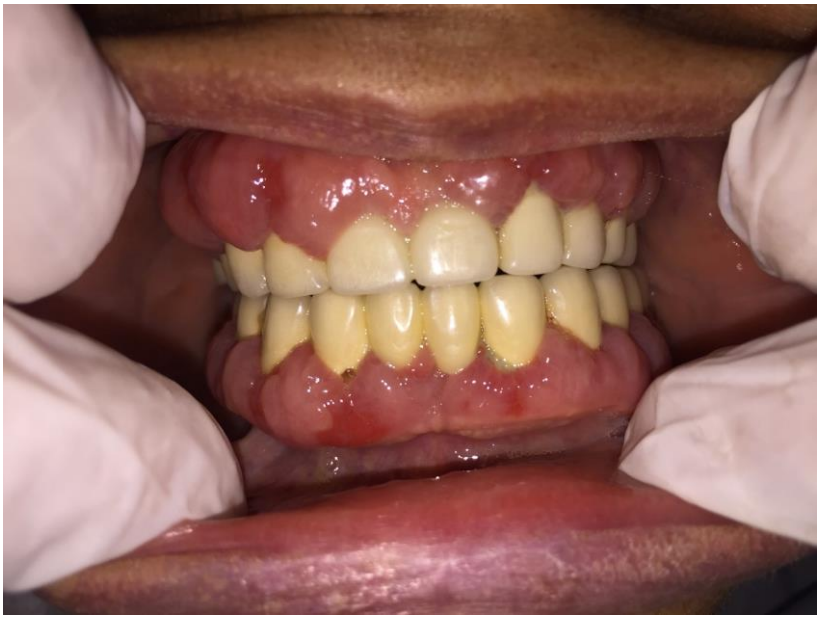

Figure 1. Image of the patient's gum condition before treatment

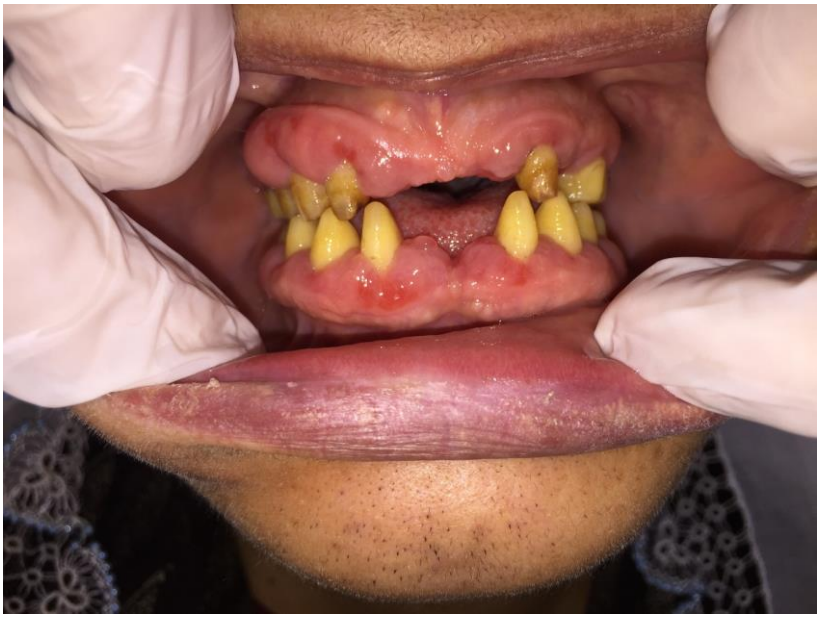

Figure 2. The patient's prostheses were removed and the first image after the initial treatment

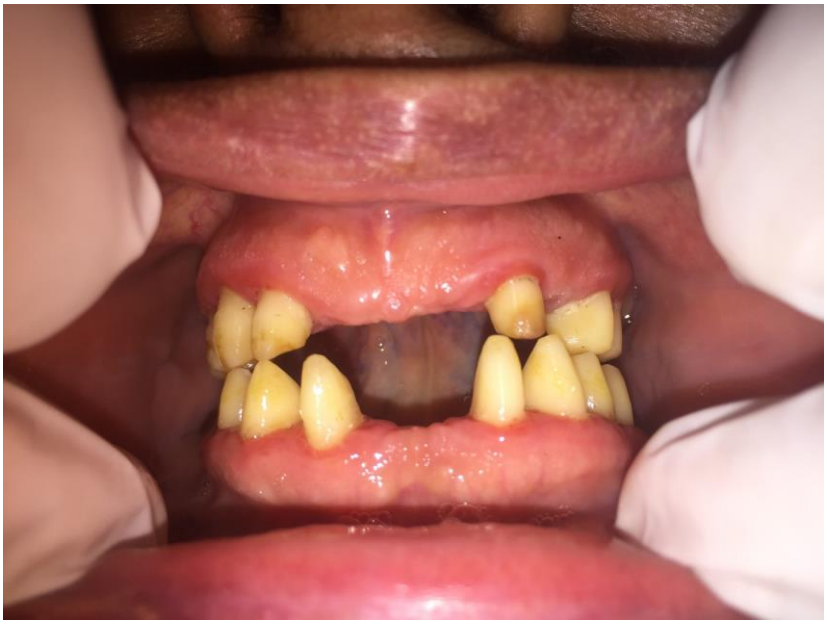

Figure 3. Image of the 10th day after gingivectomy and gingivoplasty

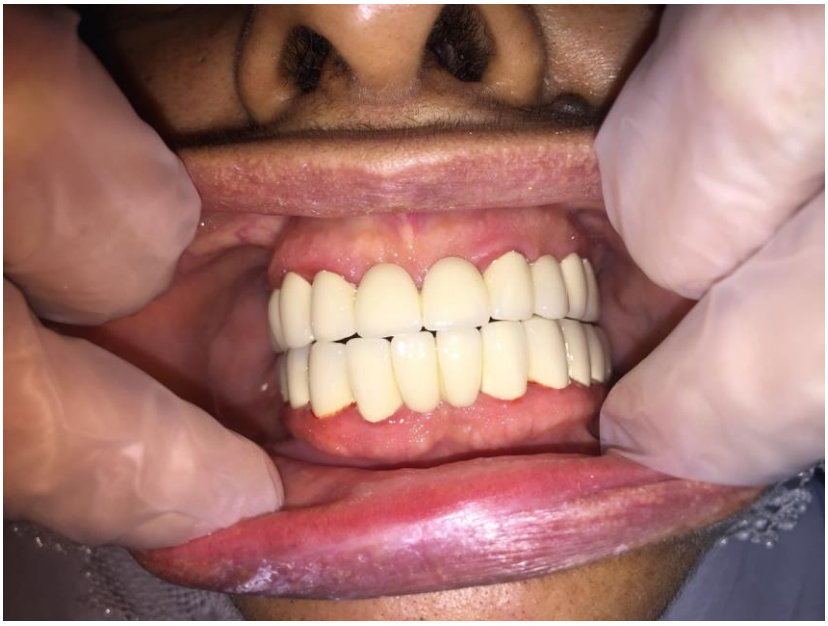

Figure 4. Image of the patient after treatment