

# Non Surgical Treatment of Amlodipine Induced Gingival Overgrowth

Akanksha Singh<sup>1</sup>, Rika Singh<sup>2</sup>, R. G. Shiva Manjunath<sup>3</sup>, Pushpendra Singh<sup>4</sup>, Yugal Rajput<sup>5</sup>

<sup>1</sup>Associate Professor, Department Of Periodontology, Institute Of Dental Sciences, Bareilly-Uttar Pradesh, India

<sup>2</sup>Professor, Department Of Periodontology, Institute Of Dental Sciences, Bareilly- Uttar Pradesh, India

<sup>3</sup>Associate Professor, Department Of Periodontics, Dental College – Rajendra Institute Of Medical Sciences, Baiatu, Ranchi-Jharkhand, India

<sup>4</sup>Post Graduate Student, Department Of Skin And Venereal Disease, Rohilkhand Medical College, Bareilly-Uttar Pradesh, India

<sup>5</sup>Assistant Professor, Department of Skin And Venereal Disease, G.S.V.M. Medical college, Kanpur- Uttar Pradesh, India

Corresponding Author: Dr. Akanksha Singh

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## ABSTRACT

Gingival overgrowth is one of the most commonly encountered complication with certain drugs. Amlodipine, a calcium channel blocker used as antihypertensive drug has been found to be associated with gingival overgrowth. This case report emphasizes diagnosis and management of amlodipine-induced gingival overgrowth. Amlodipine-induced gingival overgrowth was diagnosed and treated by thorough scaling and root planing and Drug substitution. Several factors may affect the harmony between the calcium channel blocker and gingival tissues as discussed by Seymour et al. Efficient plaque control, alternative drug modification, scaling, root planing and in severe cases

**Keywords:** Amlodipine, Calcium channel blocker (Ca<sup>+2</sup>), Drug-induced gingival overgrowth.

## INTRODUCTION

Drug induced gingival overgrowth (GO) is the commonly encountered problem in susceptible individuals as a side effect of drugs. Drugs having side effect of gingival overgrowth can be classified into three categories: Ca<sup>+2</sup> channel blockers, anti-convulsants, and immunosuppressants.<sup>1</sup> Drug causing gingival overgrowth remains an interrogated condition for diagnosis and treatment and severity of the hyperplasia. As this condition is correlated directly to the patient's susceptibility and the level of plaque control. With control of local factors, gingival overgrowth reduces dramatically. Instead of this, occasionally in some of the susceptible patients exhibit gingival overgrowth which may hampers aesthetics,

mastication, speech and difficulty in maintaining oral hygiene, increasing susceptibility to bacterial infection, root caries and periodontal diseases. From a long time, amlodipine is being used with increasing frequency and also it has been reported to be associated with Gingival overgrowth (Seymour et al., 1994). Amlodipine is a di-hydropyridine calcium channel blocker used in the treatment of angina and hypertension. Ellis et al was the first to report gingival sequestration of amlodipine and amlodipine-induced gingival overgrowth (AIGO).<sup>2</sup> As the pathogenesis of gingival overgrowth is not well-understood and it remain to be a challenge for the periodontists for the diagnosis and management of case

effectively.

### CASE REPORT

A 45 year old female patient reported to the Department of periodontology with a chief complaint of swollen gums and generalized sensitivity of teeth to hot and cold beverages since 6 months. Patient was undergoing the treatment of hypertension for past 1 year and was taking amlodipine 5 mg (OD) +

telmisartan 40 mg (OD) since 1 year. Intraoral examination revealed very poor oral hygiene with generalized gingival enlargement which was covering one-third to half of the tooth surface. A diffuse gingival overgrowth involving marginal, papillary, as well as attached gingiva. Gingiva was severely inflamed with areas of spontaneous bleeding and staining of teeth [Figure 1].



Figure: 1 Pre operative on day 1



Figure: 2 After 1 month



Figure :3 After 6 months

## Investigations

Orthopantogram revealed generalized horizontal bone loss. Blood investigations were done which were in the normal limits.

## Treatment

Treatment included the substitution of Amlodipine to Telmisartan 40 mg (OD) and verapamil 40 mg (BD). Professional scaling and root planing was performed. Patient was instructed and motivated for maintenance of proper oral hygiene. At 1 month recall visit, inflammation was markedly reduced with some reduction in gingival enlargement [Figure 2].

## Follow up visit

The patient was recalled after every 3 months and at 6 month follow up visit [Figure 3] the complete resoluteness of the gingival overgrowth without the periodontal surgical procedure was observed.

## DISCUSSION

This case report is an example of a gingival overgrowth, as a side effect of the systemic administration of a comparatively new drug of the calcium channel blockers group. Amlodipine which is a third generation dihydropyridine, with a mode of action similar to nifedipine. The slow elimination provides long-term action even after a single dose is administered (5 or 10 mg). Due to this advantage amlodipine is better accepted from both patients and physicians. Apparently this wide-spread prescribed systemic administration of calcium channel blockers will increase the incidence of drug-induced gingival overgrowth. Jorgensen, 1997 had reported the prevalence of amlodipine-induced gingival enlargement as 3.3%.<sup>3</sup> Most studies show an association between the oral hygiene status and the severity of drug induced GO. This suggests that plaque-induced gingival inflammation may be important risk factor in the development and expression of the gingival changes.<sup>4</sup> In this case report the local factors such as poor plaque control and multiple retained roots at

the initial presentation may act as risk factors that had contributed to worsen the existing gingival overgrowth and therefore it complicate the oral hygiene procedures.<sup>5</sup> The interaction between the drug and the gingival tissues could be enhanced by gingival inflammation caused by poor oral hygiene.<sup>6</sup>

## CONCLUSION

It has been concluded that there was significant reduction of nifedipine-induced GO following thorough scaling and root planing and scrupulous plaque control.<sup>7</sup> Substitution of related drug has been shown to reduce the Gingival overgrowth, however the growth will recur when the drug was readministered.<sup>8</sup> Isradipine, a companion dihydropyridine calcium channel blocker has shown regression about 60% of the Gingival overgrowth previously induced by nifedipine.<sup>7</sup> In this present case report, gingival overgrowth was treated via nonsurgical periodontal therapy including oral hygiene instruction and motivation, followed by substitution of amlodipine by telmisartan 40 mg (OD) and verapamil 40 mg (BD). Therefore patient must be informed of this tendency and the importance of maintenance of the effective oral hygiene as key factors in preventing and managing gingival overgrowth associated with this drugs. Supportive followed up is necessary in an effort to monitor her gingival/ periodontal status, to assess and reinforce oral hygiene and to periodically provide professional care thus prevent the recurrence of gingival overgrowth.<sup>7</sup>

## Declaration by Authors

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