Case Report
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Drug Induced Gingival Overgrowth – Report of 2 Cases

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Abstract

Gingival overgrowth is a common side effect observed in patients taking anticonvulsants, calcium channel blockers and immuno-suppressants. The overgrowth associated poses both an aesthetic problem as well as hinders routine oral hygiene procedures increasing plaque retention and subsequent superimposed inflammatory enlargement. Amlodipine a routinely used calcium channel blocker is associated with few cases showing significant gingival enlargement. Management in such cases compromises of oral prophylaxis, drug substitution, and if the overgrowth persists a surgical intervention. This article describes a report of 2 cases showing Amlodipine induced gingival overgrowth and its management by drug substitution and later surgical intervention to eliminate the enlargement.

Keywords: Drug induced; Gingival overgrowth; Management

Introduction

Gingival overgrowth is a well recognized side effect of three classes of medications namely diphenylhydantoin (anticonvulsant), cyclosporine (immunosuppressant) and amlodipine (calcium channel blockers- antihypertensive). The overgrowth is usually seen within months of starting the drug. Severe inflammatory enlargement and subsequent bone loss is seen which can be reversible after discontinuation or substitution of the offending drug. If after substitution the enlargement prevails a surgical intervention is required [1-3]. Nifidipine induced gingival overgrowth was first reported in the year 1984 [4,5]. Nifidipine induced enlargements have a higher prevalence rates as compared to amlodipine induced enlargements i.e 47.8% and 3.3% respectively [6,7].

Case Presentations

Case 1

A 65 year old female reported to the clinic with the chief complaint of enlarged bleeding gums and missing teeth. She gave a history of hypertension since few years and was on amlodipine 5mg daily since then. Intraoral examination revealed a partially edentulous upper and lower arch with a massive gingival overgrowth in relation to (i.r.t) 13, and also overgrowth was seen i.r.t 24, 34, 37 and 44. 13 and 34 were grade 3 mobile. On the day of visit, extraction of 13 along with the excision of the overgrowth was done and one week later the extracted region showed excellent healing and then 34 was also extracted and the remaining areas of overgrowth were cauterized (Figure 1). Histopathology of the excised lesion showed thickened spinous cell layer, hyperkeratosis and fibroblastic proliferation (Figure 2). One week later thorough scaling and root planning was performed and a written consent was given to the physician to change the medication, on subsequent visit the patient was on Losartan. 3 months post-op showed excellent healing and subsequently upper and lower removable partial denture was given to the patient (Figure 3).

Case 2

A 45 year old male came to the clinic with the chief complaint of enlarged gums, bleeding while brushing and severe halitosis. He gave a medical history of hypertension and was on amlodipine since 5 years. Intraoral examination revealed inflamed lobulated interdental papilla chiefly in the maxillary anterior region. Oral hygiene was very poor with abundant plaque and calculus. Bleeding on probing was detected on all affected areas. Periodontal pockets were present within the range of 4-8 mm. A crown was present i.r.t 11 and lower FPD i.r.t 33-43. On the first visit full mouth scaling and polishing was performed and a written consent was given to the physician to change the medication. The physician put the patient on losartan. After 3 months there was a significant reduction in the overgrowth. Since some overgrowth was still present it was decided to surgically excise the overgrown tissue (Figure 4). A periodontal flap was raised and after thorough

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Figure 1: a) pre op, b) post extraction and surgical excision, c) healing after one week, d) healing after 3 months.

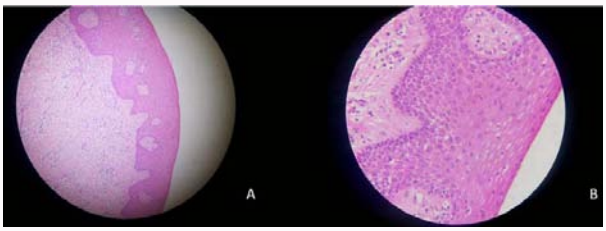

Figure 2: Histopathological features a) 1x view, b) 10x view.

Figure 3: Removable Partial Denture given.

debridement and gingivoplasty was performed i.r.t 13-23. 3-0 silk sutures and periodontal pack was given. One week post-operative showed excellent healing and a marked reduction in the overgrowth. The patient was counselled to maintain oral hygiene meticulously.

Discussion

The etiopathogenesis of gingival overgrowth is dynamic and several factors like genetics, age, inflammatory variable, concomitant administration of drugs, pharmacokinetics of the drug and growth factors influence the interaction of the drug with the gingival tissues and the subsequent overgrowth. It has been hypothesized that the there is a calcium dependent interaction between the drugs causing enlargement ie phenytoin, cyclosporine and calcium channel blockers and the gingival fibroblasts. The intracellular calcium metabolism is affected and in susceptible patients gingival fibroblasts are stimulated resulting in hyperplasia of the extracellular matrix components and excess accumulation of glycoaminoglycans resulting in overgrowth [8,9]. The present cases were complicated by

Figure 4: a) pre op, b) flap raised, c) suturing, d) healing after 1 week.

poor oral hygiene hence the existing drug induced overgrowth was enhanced by the plaque induced inflammatory component. Some reduction hence was observed after scaling and extractions. With regards to the treatment, discontinuation of the offending drug has shown dramatic improvement however recurrence has been reported on re-administration. Substitution of the drug is also a viable option. Isradipine, another dihydropyridine calcium channel blocker shows lesser prevalence of gingival overgrowth. After substitution and non surgical therapy if the overgrowth is persistent then surgical intervention is necessary to enhance the functional and aesthetic outcome. Depending upon the extent of involvement and underlying bone loss gingivectomy or a flap surgery is indicated. Topical folate application is also suggested as an adjunctive treatment modality [10]. The present cases were satisfactorily treated by drug substitution, phase 1 periodontal therapy and later surgical intervention after 3 months.

Conclusion

Patients on phenytoin, cyclosporine or calcium channel blockers must be informed about the suspected side effect of gingival overgrowth by the physician. They must be counselled by the dentist to maintain optimum oral hygiene to prevent the overgrowth. If the overgrowth occurs then the dental surgeon should meticulously plan the case starting from consent from the physician, changing the medication and later periodontal therapy- non surgical or surgical as indicated. Supportive periodontal therapy, continuous monitoring of the periodontal status and periodic professional care is of utmost importance to prevent recurrence.

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