ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 05, pp.51179-51182, May, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE REPORT

SHORT TERM, LOW DOSE AMILODIPINE INDUCED SEVERE DRUG INDUCED GINGIVAL ENLARGEMENT – A CASE REPORT

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ARTICLE INFO

Article History:
Received 09th February, 2017
Received in revised form
30th March, 2017
Accepted 16th April, 2017
Published online 31st May, 2017

Key words:
Amlodipine,
Gingival enlargement,
Chronic periodontitis,
Management

ABSTRACT

This case report describes a case of amlodipine induced gingival enlargement in a pre existing periodontitis case. The uniqueness in this case is that the patient exhibited severe enlargement in spite of using the drug at lower dosage within short span of time. The gingival enlargement complicates the periodontal maintenance and aggravates other periodontal diseases. Drug induced enlargements pose a greater problem to dentists as they interfere with oral hygiene practices. So both the dentists and the general practitioner should be aware this adverse reaction to Amlodipine for effective case maintenance.

Citation: Syed Kuduruthullah, Jananni, M. and Sivaramakrishnan, M. 2017. "Short term, low dose amilodipine induced severe drug induced gingival enlargement – A case report", *International Journal of Current Research*, 9, (05), 51179-51182.

INTRODUCTION

Gingival enlargement refers to the increase in size of the gingiva which is a common feature of gingival diseases. Various etiologic and contributing factors have been listed like inflammation, hormonal changes, systemic diseases, drug associated and tumors. In general enlargements tend to accumulate more plaque and hinder the oral hygiene procedures thus accelerating the periodontal destruction, interfere with speech, mastication and pose an esthetic problem (Marshall, 1993). Among these, drug induced gingival overgrowth is of greater concern to the dentists. Various literature reports more than 20 drugs that can cause gingival enlargement (Ciancio, 2004). Though many drugs have been associated with gingival overgrowth, the most common classes of drugs known to cause gingival overgrowth are (1) Anticonvulsants (2) Calcium channel blockers and (3) Immunosuppressants (Kataoka, 2005). Amlodipine is a drug that belongs to calcium channel blockers group that is often associated with gingival enlargement. It is a long acting, second generation dihydropyridine that is used in treatment of hypertension and related cardiovascular disorders (Routray, 2003). The first reported case of gingival overgrowth due to amlodipine usage was reported by Seymour *et al*, 1994 (Seymour, 1994). The time of occurrence of gingival enlargement following drug use is reported as 6 months (Meraw, 2011). This case report describes a sudden onset diffuse gingival enlargement in an due to use of amlodipine complicated by periodontal inflammation.

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Case Report

30 year old female patient reported with the complaint of swollen gums with unpleasant odor and bleeding. The patient had bleeding gums and unpleasant odor for the past 3 years and the enlargement for the past one month. The enlargement started in the anterior teeth and progressively increased in size and involved the posterior teeth also. On detailed medical examination the patient was a diagnosed as hypertensive before a month and was started on medication. amlodipine 5 mg once daily. On general examination, the patient was well built, conscious, cooperative and well oriented. Detailed history revealed the patient had mobile teeth and migration of teeth for past 3 – 4 years, but no noticeable gingival enlargement. Patient did not resort any professional

management. Because of the mobile teeth, the patient had stopped using tooth brush and had been brushing with tooth paste and fingers for the past 3 years. Intraoral examination revealed poor oral hygiene.

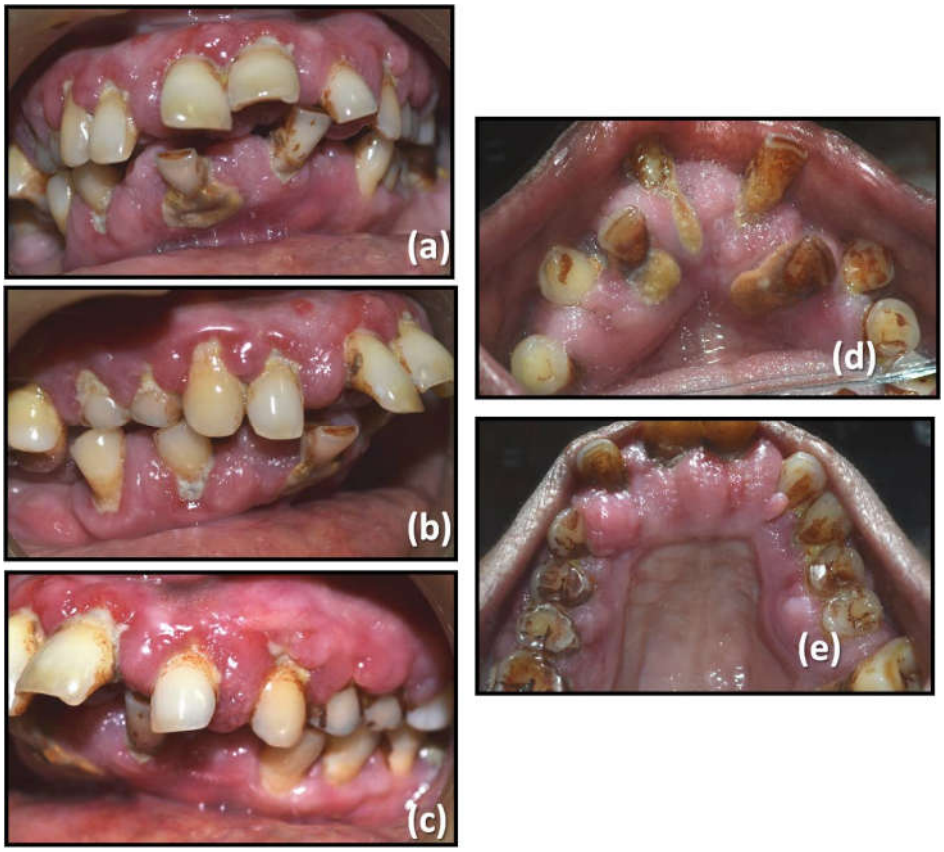

Figure 1a – 1e. Initial, pre operative presentation

Figure 2a – 2e. Presentation after 1 month of drug discontinual

Taking history and findings into consideration, the case was diagnosed generalized chronic periodontitis. Patient reported occurrence of gingival enlargement only for the past 1 month period. Gingival examination revealed diffuse gingival hyperplasia in both maxillary and mandibular arch. The swelling involved the marginal gingiva, attached gingiva and the interdental papilla covering almost one third to one half of all the teeth. It did not extend into the vestibules. The

enlargement was nodular with marked inflammatory component. The gingiva was generally firm in consistency and soft in areas with inflammatory components. Anterior teeth in both the arches were displaced due to the enlargement. The anterior teeth in the lower arch exhibited grade III mobility. Considering all positive findings, the case was diagnosed as amilodipine induced gingival hyperplasia associated with chronic periodontitis, (Figure 1a – 1e).

Management

After physician consult, amilodipine was discontinued and was substituted with single dose of Enalapril. Full mouth disinfection approach was planned for management of periodontal status. Thorough scaling and root planing was performed. In addition, tongue cleaning was done with chlorhexidine gel and mouth rinsing was done with 0.2% chlorhexidine rinse. Following this hopeless teeth were extracted and oral hygiene instructions were given. Additionally the patient was advised to take amoxicillin 500 mg 7 days thrice daily and follow up was monitored.

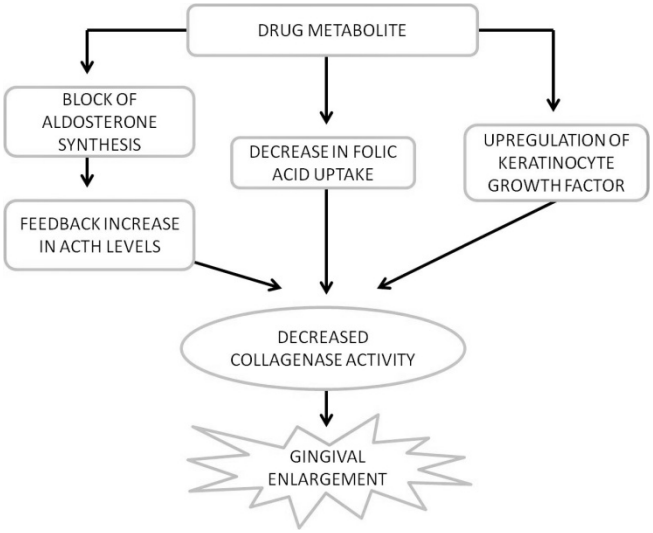

Figure 3. Non inflammatory pathway for gingival enlargement

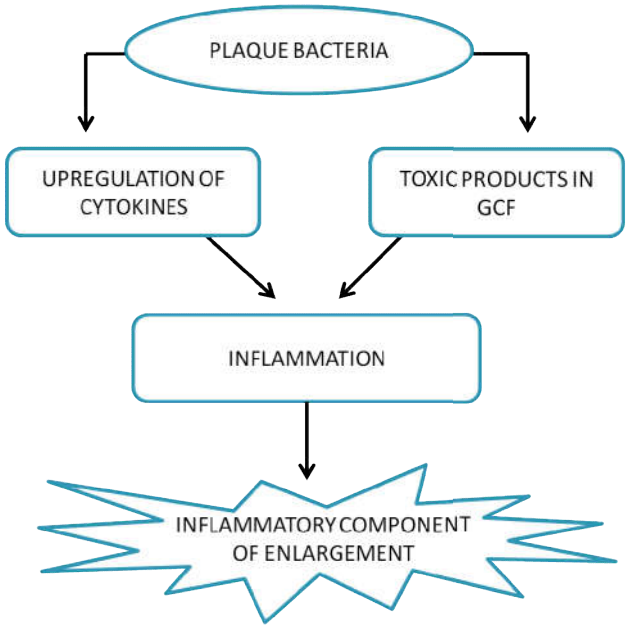

Figure 4. Inflammatory pathway for gingival enlargement

Post Operative

The patient was recalled after a month for review. After a month there was considerable reduction in the gingival overgrowth and probing depth indicating improvement in periodontal status also. (Figure 2a – 2e). The follow up was upto 1 months postoperatively due to the non compliance of patient for further treatments.

DISCUSSION

Antihypertensive drugs are often accompanied by the side effect of gingival hyperplasia. The incidence of gingival hypertrophy with nifedipine therapy has been reported to be as high as 20%. The prevalence of amilodipine induced hyperplasia is found to be 1.7% to3.3% (Jorgensen, 1997). Though there are reports of amilodipine induced enlargements in literature, this case is unique as it presents the drug effect in a pre existing case of chronic periodontitis. Also, the dose of amilodipine (5 mg) here is lesser compared to other known reports (Suku, 2011; Lafzi, 2006; Chaturvedi, 2011). Only few reports are available for the incidence of gingival enlargement associated with low dose amlodipine (Taib, 2007) One study concludes that there can be no gingival enlargement in cases who are on low dose of amlodipine (< 10 mg) (Jorgensen, 1997). The extent of enlargement in this case despite the low dose of amilodipine might be due to the undue response to existing inflammation. Clinically drug induced overgrowth begins in the interdental papilla and extends to involve the other parts of gingiva. The enlargement is usually fibrotic. The present case also had a fibrotic enlargement, but complicated with areas of inflammation. The enlargement is attributed to two mechanisms: Non inflammatory (Figure 3) and Inflammatory (Figure 4). The pathogenesis is still not clearly understood and the treatment is limited to drug substitution, oral care and maintenance. As immediate line of treatment the patient was advised to consult physician and change the drug prescription. The patient was put on a single dose enalopril. Concomitantly the periodontal management was also initiated. Oral hygiene importance was emphasized and the patient was also put on maintenance program with periodic recall. The association between oral hygiene and severity of drug induced gingival enlargement is well documented. Plaque induced inflammation is an important risk factor in development of gingival changes (Barclay, 1992; Ikawa, 2002).

In the present case, the oral hygiene was poor with large plaque and calculus deposits. The induced inflammatory component can be considered as a risk factor explaining the exaggerated response. At three month recall, there was marked reduction in the gingival enlargement. The inflammatory component also resolved. It has been proved that proper oral hygiene, plaque control and good professional care (Scaling and root planing) results in significant reduction of gingival overgrowth (Jorgensen, 1997). This explains the reduction in inflammatory component and improvement in periodontal parameters. Discontinuation of the related drug has been shown to reduce the GO, however the growth will recur when the drug is readministered (Lederman, 2007). In this case replacement of amlodipine with enlopril was advised and in a short span of three months marked reduction in enlargement was observed. But long term monitoring is required for definitive conclusive remarks.

Conclusion

Amlodipine is a commonly prescribed medication for hypertension in family medicine. Gingival overgrowth is an often overlooked, but potential side effect of this drug. This case report highlights the possibility of adverse effect of amlodipine at lower concentrations and with short term use complicated by inflammatory component. It also emphasizes the importance of oral hygiene in resolution of enlargement. The clinician and the physician must be aware of the adverse effects for effective maintenance. Drug substitution with proper oral prophylaxis gives better results.

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