



CASE REPORT OF AMLODIPINE INDUCED GINGIVAL HYPERPLASIA - LATE ONSET AT A LOW DOSE

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ABSTRACT

Drug induced gingival hyperplasia is reported with three main group of drugs like calcium channel blockers (CCBs), immunosuppressants and anticonvulsants. Among the CCBs, the incidence of nifedipine induced gingival hyperplasia is reported to be about 10%. Amlodipine, a third generation calcium channel blockers has been shown to promote gingival hyperplasia although in very limited cases reported. There are less data on reports of hyperplasia with amlodipine at a dose of 5 mg, even after taking for more than 6 months. Clinical manifestation of gingival enlargement frequently appears within 1 to 3 months after initiation of treatment with the associated medication. This case report describes the drug induced gingival hyperplasia and its management in a hypertensive patient taking amlodipine at a dose of 5mg.

Keywords: Gingival hyperplasia, Amlodipine.

INTRODUCTION

An increasing number of medications are associated with gingival enlargement. Currently, more than 20 prescription medications are associated with gingival enlargement.¹ Amlodipine a newer agent of dihydropyridine, used for treatment of hypertension and angina, was first reported for causing gingival overgrowth as side effect, by Seymour et al in 1994.² Recently, Lazy *et al.* had reported rapidly developed gingival hyperplasia in patient received 10 mg per day of amlodipine within two months of onset.³

Clinical manifestation of gingival enlargement frequently appears within 1 to 3 months after initiation of treatment with the associated medication.⁴ There are less data on reports of hyperplasia with amlodipine at a dose of 5 mg, even after taking for more than 6 months.⁵ But, in the present case the gingival hyperplasia occurred at a dose of 5mg after 7 months of use.

Case report

A 47 year old hypertensive female visited the hospital with chief complaints of swelling and bleeding of gums from last 2 months. Her past medication history included use of amlodipine from 7 months for high blood pressure. There was massive inflammation of gums of upper and lower jaw (Figure 1). There was no history of intake of any other drugs. Amlodipine induced gingival hyperplasia was suspected and the drug was withdrawn. Patient was switched on to enalapril for the treatment of hypertension. The patient was advised for regular follow ups. Biopsy was done and a highly vascular connective tissue is observed histologically with focal accumulation of inflammatory cells, primarily plasma cells. At the subsequent followups after 2 weeks for two visits, she was examined and interviewed. Her symptoms like pain and hyperplasia was observed to be reduced.

DISCUSSION

Even though there are previous reports of Amlodipine induced hyperplasia, the present case is interesting as it occurred with a low dose of amlodipine (5 mg) and appeared only on long term administration (7 months). Several factors may influence the relationship between the drugs and gingival hyperplasia. Those factors include age, genetic predisposition, pharmacokinetic variables, poor oral hygiene, periodontal disease, periodontal pocket depth, gingival inflammation, degree of dental plaque, duration and dose of a drug, histopathology, ultra structural factors, inflammatory changes and drug action on growth factors. The underlying mechanism behind drug induced gingival hyperplasia involves inflammatory and non inflammatory pathways. The proposed non inflammatory mechanisms include defective collagenase activity due to decreased uptake of folic acid, blockage of aldosterone synthesis in adrenal cortex and consequent feedback increase in

ACTH level and upregulation of keratinocyte growth factor. Alternatively, inflammation may develop as a result of direct toxic effects of concentrated drug in crevicular gingival fluid and/or bacterial plaques. This inflammation could lead to the upregulation of several cytokine factors such as TGF- β 1.^{6,7}

Many studies have reported gingival hyperplasia caused by 10mg OD of amlodipine.^{2,8,9} Jorgensen et al conducted a study where a series of 150 cardiac patients were followed up. It was found that amlodipine at a dose of 5 mg/day cannot induce gingival hyperplasia even if taken for more than 6 months.⁵ But in the present case a 5mg dose of amlodipine has developed the gingival hyperplasia.

Drug withdrawal resulted in improvement which is the first line step for management of drug induced hyperplasia. However rechallenge of drug was not done. The patient was counselled about the oral hygienic importance. We conclude that the hyperplasia could occur with amlodipine even at a small dose (5mg) and it could occur even after 7 months of drug administration. Hence the possibility of amlodipine induced hyperplasia should be considered for a low dose as well as a late presentation.



Fig. 1: Suspected amlodipine induced gingival hyperplasia

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