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Nifedipine Induced Gingival Enlargement –A Case Report

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Case Report

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ABSTRACT

Gingival enlargement is one of the most important clinical findings in the clinical scenario. Nifedipine is a calcium channel blocker used for the management of hypertension and angina. This article reports a case of a 32-year-old female who had a drug-induced gingival enlargement caused by Nifedipine and HMG-Co-A reductase. The purpose of this case report is to emphasise the need for dentists to be aware of the frequency of occurrence of drug Induced Gingival Enlargement.

Keywords: Calcium Channel Blocker, Gingival Enlargement, HMG-Co-A Reductase, Nifedipine.

Introduction

The gingival enlargement can be seen as an interactive response due to host and environment-related factors. The aetiology of gingival enlargement or gingival overgrowth is multifactorial. It is most commonly associated with the inflammatory changes of the gingiva and the surrounding periodontium. The other etiologic factors are hereditary, malignancies, and certain drugs.[1] Drug-induced gingival lesions are preferably called "Gingival Enlargement" or "Gingival Overgrowth". These kinds of growths are seen as an adverse effect, following the administration of the various drugs that are used for the management of various systemic diseases other than the dental diseases.[2] There are various pharmacological agents associated with gingival enlargement. The most common gingival enlargement-causing drugs are anticonvulsants, Immunosuppressants, antihypertensive drugs, and miscellaneous drugs like erythromycin.[3]

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Case Report

A 32-year-old female patient reported to the department with the chief complaint of swollen gums for 7 months. Initially, Swelling was small in size which gradually increased to the present size of 2cm x1cm, present on gums in the anterior region of the jaw, gradually involving the upper and lower facial and lingual region of the jaw for 7 months. Occasionally, the patient complained of discomfort while eating. There was no history of trauma, pus, fluid, or blood discharge associated with swelling. Family history and the extra-oral examination were not consequential. Lymph nodes were normal. The patient was hypertensive. She had been on an Antihypertensive drug (Nifedipine 20mg) and on HMG Co-Enzyme reductase for the last 3 years. The intraoral clinical examination showed beadlike enlargement of the interdental papilla involving the facial and the lingual marginal gingiva of the maxillary and mandibular anterior teeth region. It was 2x1cm in size, pale pink in colour with rolled margins.

Figure 1

Figure 2

On palpation, it was non-tender, painless growth with generalized bleeding on probing and generalized moderate periodontal pseudo pockets. It was soft to firm in consistency without stippling. Based on detailed medical history, drug history, and clinical examination, a provisional diagnosis of drug Induced Gingival enlargement was made. Routine haematological tests were normal. After the incisional biopsy, 3 bits of soft tissue specimens were received. They were pinkish-red in colour, approx. 2 x 0.2 cm, 0.8 x 0.2 cm, & 0.6 x 0.2 cm in size, irregular in shape, soft to firm in consistency with rough surface texture. Haematoxylin and Eosin (H & E) stained sections revealed epithelium with elongated rete pegs. (**Figure. 3**)

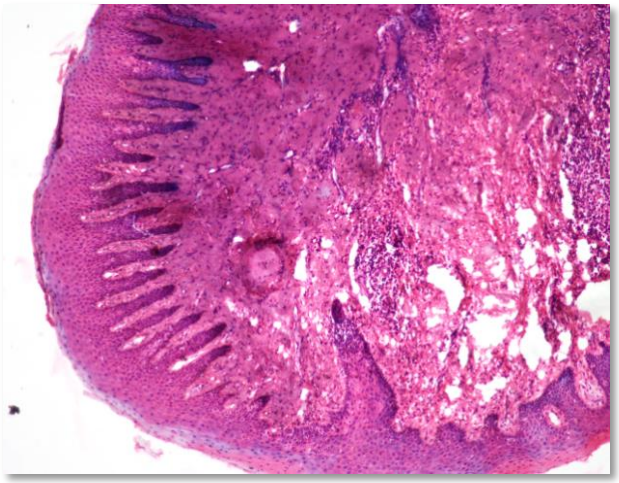

Figure 3

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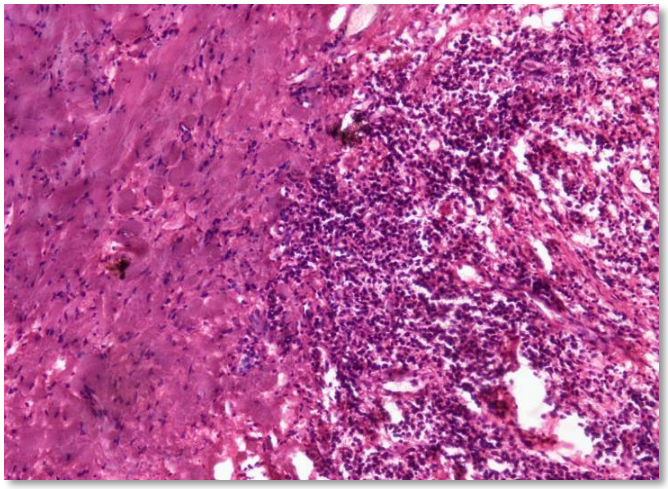

Figure 4

A mixture of dense and loose fibrous components with numerous fibroblast and chronic inflammatory cell infiltrate, chiefly lymphocytes was seen. (**Figure. 4**)

Based on histological findings a final diagnosis of drug Induced gingival hyperplasia was made and no other risk factors were identified. The patient's physician was consulted in earlier appointments and medication could not be suspended or changed. In view of this, the treatment plan consisted, initially, of conservative therapy with dental education, motivation and meticulous oral hygiene instruction, in combination with scaling, root planning and prophylaxis with regular follow up.

Discussion

The term gingival enlargement is defined as an abnormal growth of periodontal tissue.[4] Based on microscopic analysis of tissue samples the terminologies like gingival hyperplasia and gingival hypertrophy are used to describe gingival enlargement precisely. Based on clinical findings the appropriate term used most commonly is gingival enlargement. Gingival enlargement is a multifactorial disease and drugs are one of the crucial etiologic factor.[1] Drug-induced gingival enlargement is encountered many times in clinical practice. There are various drugs that can cause drug-induced gingival enlargement. Nifedipine is a calcium channel blocker most commonly used as an antihypertensive drug.[5] First reported case of Gingival Hyperplasia caused by Nifedipine was reported by Ramon et al. Nifedipine-induced gingival enlargement's prevalence was found to be ranging between 14.7 to 83%.[6,7] Drug-induced gingival enlargement begins painlessly, involving one or two interdental papillae, which present an increased stippling & ultimately a roughened or pebbled surface with lobulations. The gingival tissues are dense, resilient, and show little or no tendency to bleed.[8] Enlargement generally presents no difficulties, although it is aesthetically objectionable making it functionally compromised. There is no racial, or sex predilection, although, in one study, males were 3 times more likely than females to develop gingival overgrowth with calcium antagonists. There is no age predilection; however, phenytoin-induced gingival overgrowth appears to be more common in young patients with epilepsy.[4]

It is seen more commonly in the anterior gingiva. Onset occurs in 3 months with a change in gingival contour leading to modification of gingival size.[9] Enlargement is first observed at the interdental papilla. There is no association with periodontal attachment loss. The severity of the lesion can be reduced by maintaining proper oral hygiene. In contrast to inflammatory gingival enlargement, the gum tissues in this case are typically pale

pink in colour, firm, non-tender, and do not bleed easily. The interdental papilla becomes enlarged. Pseudo-periodontal pockets without bone loss are typically seen.[10]

Gingival overgrowth can be differentiated from one another as In phenobarbitone treated patients, the gingiva may be enlarged uniformly without lobulations of the interdental papillae, and more severe clinical lesions are seen in the posterior than anterior regions. In cyclosporine-treated patients, sometimes pebbly or papillary lesions appear on the surface of larger lobulations, which have been associated with the presence of Candida hyphae invading the gingival epithelium. Sometimes tissues become more hyperaemic and bleed more readily upon probing than tissues affected by phenytoin.[10]

The treatment of choice is surgical excision. Unfortunately, its recurrence is common. It has been found that careful and meticulous oral hygiene maintenance will result in slower development of the enlargement & will help in slower recurrence after surgical excision. Some regression of enlargement may result if the use of the drug is discontinued. Reversing and preventing gingival enlargement caused by drugs is as easy as ceasing drug therapy or substituting another drug. However, this is not always an option; in such a situation, alternative drug therapy may be employed, if possible, to avoid this deleterious side effect.[11]

If the medication cannot be discontinued, surgical removal of the excess gingival (gingivectomy) may be performed but the condition will likely recur. As this condition is somewhat dependent on the level of plaque accumulation in the teeth, effective oral hygiene maintenance may reduce the severity.[12]

It may be concluded that management can be established with a combination of non-surgical and surgical periodontal procedures. Additionally, the encouragement and maintenance of proper periodontal hygiene have an important and decisive role in its prevention.

Conclusion

Gingival enlargement is an under-recognised adverse effect of various drugs like cyclosporine, phenytoin, and the calcium channel antagonists. General Physicians and dentists should be aware of the etiologic medications that can induce gingival enlargement or hyperplasia and be able to identify changes in the oral cavity. Newer molecular approaches are needed to clearly establish the pathogenesis of gingival overgrowth and to provide novel information for the design of future preventive and therapeutic modalities.

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