IOSRJournalofResearch&Methodin Education(IOSR-JRME)
e-ISSN:2320–7388, p-ISSN: 2320-737x Volume14, Issue 3Ser.1(May.– June.2024), 01-04
www.iosrjournals.org

Management Of Amlodipine Induced Gingival Overgrowth Via Non-Surgical Approach

Debalina Nath, Shailendra S Chauhan, Satendra Sharma, Aditya Sinha, Gaurav Shubham

[1],5*Post Graduate Student, Department of Periodontology, Kanti Devi Dental College and Hospital, Mathura, Uttar Pradesh, India.*

[2]*Professor and Head of Department, Department of Periodontology, Kanti Devi Dental College and Hospital, Mathura, Uttar Pradesh, India*

[3]*Reader and MDS, Department of Periodontology, Kanti Devi Dental College and Hospital, Mathura, Uttar Pradesh, India.*

[4]*Professor and MDS, Department of Periodontology, Kanti Devi Dental College and Hospital, Mathura, Uttar Pradesh, India.*

Abstract:

Gingival enlargement is one of the most common complication, that are also associated with certain drugs. The pathogenesis of drug –induced gingival enlargement is uncertain. Ca channel blockers are a group of anti-hypertensives drugs,and the patients who are hypertensives used to take Ca channel blocker, which is antihypertensives . Seymour et al. reported the gingival overgrowth attributed to amlodipine and also discussed that several factors may affect between the Ca channel blocker and gingival tissues which are efficient to plaque control, alternative drug modification, scaling & root planning. Amlodipine induced gingival overgrowth was diagnosed & treated thorough scaling & root planing, currettage and drug modification.

Keywords: *Amlodipine, Ca Channel Blockers, Gingival Overgrowth*

Date of Submission: 24-04-2024 Date of Acceptance: 04-05-2024

Introduction:

The term ‘gingival overgrowth’ refers to an abnormal growth of the gingival tissues around the teeth that occurs due to various adverse effects of some drugs including anti-convulsants (mainly phenytoin), immune-suppressants (mainly cyclosporine) and Ca channel blocker (mainly nifedipine). Ca channel blockers are the drugs developed for the treatment of cardiovascular conditions such as- Hypertension, angina pectoris, coronary artery spasms, cardiac arrhythmias and are considered as one of the etiologic factors for drug induced gingival overgrowth. [1] With the control of local factors gingival overgrowth reduces conspicuously. Instead of this, patients who are susceptible to gingival overgrowth, that may

impedes aesthetics, mastication, difficulty in speech & maintaining oral hygiene, increased susceptibility to bacterial infections, root caries & periodontal disease. Amlodipine is being used for longer in time, where there is a increasing in frequency rate and also reported the first for causing the gingival overgrowth attributed to amlodipine, Seymour et al. (1994). Ellis et al. was the first to report AIGO & sequestration of amlodipine.[2] Amlodipine is a dihydropyridine derivative of new anti-anginal CCBs that acts by decreasing myocardial contractility and oxygen demand and that dilates coronary arteries and arterioles which are being used for the treatment of hypertension & angina .[3]

Case Report:

A 43 old female patient reported to the department of Periodontology, with a chief complaint of swollen and bleeding gums and generalized sensitivity of teeth to hot & cold beverages since 3 months. Patient is hypertensives since 10 years and was undergoing the treatment ofAyurvedic medicine since 10 years. From last 3 months, she was started antihypertensives drugs, taking [Amlodipine 5mg (OD) + Telmisartan 40 mg (OD)] since 3 months.[4]After that she noticed small bead like nodular enlargement of the gums that gradually progressed to the present size covering almost the entire front teeth.
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 pink in colour with erythematous area and lobulated surface. Margins of the gingiva were rolled out with loss of normal gingival scalloping. On palpation gingiva was firm and resilient in consistency, which was severly inflamed with spontaneous bleeding and staining of teeth. The probing of gingival sulcus revealed presence of pseudopockets and elicited the bleeding. [5]

Figure:1 Preoperative view

Figure:2 Buccal view (Right Side)

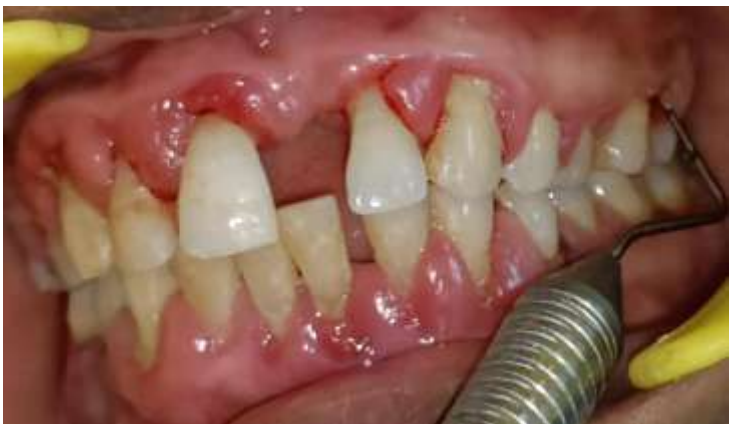

Figure:3 Buccal view (Left Side)

Figure:4 Post-operative view on maxillary arch (1 monthsfollowup)

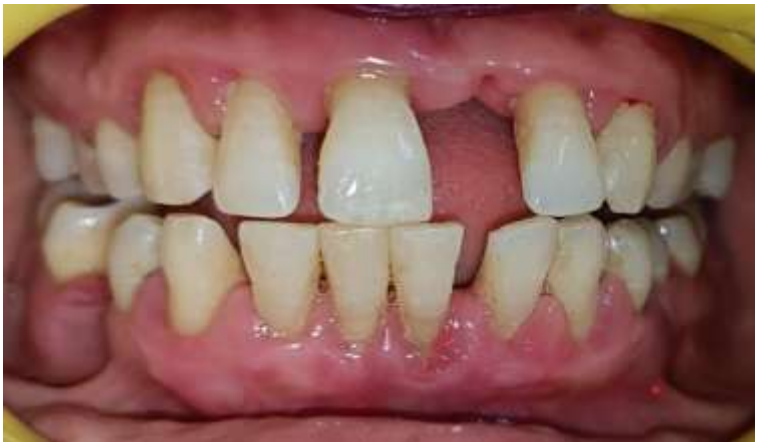

Figure:5 Post-operative view (2 monthsfollowup)

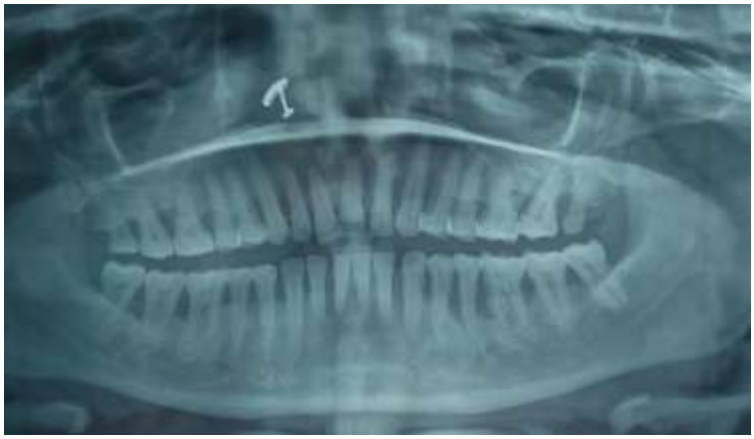

Figure:6 OPG View

Investigations:

OPG revealed generalized horizontal bone loss.
Blood investigations such as – CBC , BT, CT were done which were in the normal limits.

Treatment:

The treatment of the patient was started with non-surgical approach. After thePhase-1 therapypatient was advised Chlorhexidinemouthrinse andMetrohex-plus gel. Patient isrefered to consulted physician regarding drug substitution.Treatment included the substitution of Amlodipine to Telmisartan 40mg (OD). After 2 weeks of recall visit professional scaling & root planning and currettage was performed. Patient was instructed and motivated for maintaining good oral hygiene with the use of chlorhexidine mouth rinses . At 4 weeks , 6 weeks & 8 weeks of recall visit, inflammation was markedly reduced & also the reduction of gingival enlargement.

Discussion:

The widespread use of calcium channel blocker began in 1980s. The dihydropyridones (e.g. nifedipine) tend to be more commonly associated with the gingival enlargement than with other sub groups of calcium channel antagonists such as amlodipine.Amlodipine is a 3rd Gen. dihydropyridine derivative of new Ca channel blocker (CCBs), with a mode action similar to Nifedipine, which commonly causes gum hypertrophy. Generally, amlodipine induced gingival overgrowth occurs within 3 months of drug's initiation, when the dose rate is 5-10 mg/day. And the half-life of Amlodipine has long (30-50)hrs.Jorgensen (1997) reported the prevalence of amlodipine induced gingival overgrowth as 3.3% .[6] 43 years old female patient, the enlargement occurred after 3 months of taking the drugat a dose of 5 mg once a day. So, the time duration of gingival hypertrophy occurs due to variety of multifactorial causes such as- genetic susceptibility , interleukins , MMPs & host response to drug induced gingival fibroblasts. When the gingival tissues grows , it can create pockets and making the host are more susceptible to bacterial infections, dental caries& periodontal disease. So, the first step for managing gingival hypertrophy, to stop the offending drug and replace it with an alternative. And, the patient was instructed and motivated for maintaining good oral hygiene practices and professional plaque cleaning .[7]

Conclusion:

Gingival enlargement was treated via non-surgical approach including mechanical instrumentation and full mouth currettage was performed, and the patient was instructed & motivated for maintaining a good oral hygiene, followed by substitution of amlodipine by Telmisartan 40mg (OD). Meticulous oral hygiene maintenance by patient that also may be responsible for gingival overgrowth. 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.

References:

[1] Newman, Carranza; Drug-Induced Gingival Overgrowth Clinical Periodontology – 10thEdition.
[2] Akanksha Singh , Rika Singh , R. G. Shiva Manjunath , Pushpendra Singh, Yugal Rajput ; Non-Surgical Treatment Of Drug-Induced Gingival Overgrowth. International Journal Of Health Sciences And Research Vol.13; Issue: 6; June 2023
[3] William W. Hallmon &Jeffrey A. Rossmann ;The Role Of Drugs In The Pathogenesis Of Gingival Overgrowth: A Collective Review Of Current Concepts. Periodontology 2000, Vol. 21, 1999, 176-196
[4] Nitesh Kumar Sharma , Roopa D.A. ; Non-Surgical Management Of Amlodipine Induced Gingival Overgrowth : International Journal Of Dental Sciences And Research, 2014, Vol. 2, No. 6, 137-140
[5] Triveni, M. G., Rudrakshi, C., Mehta, D. S.; Amlodipine Induced Gingival Overgrowth :Journal Of Indian Society Of Periodontology 13(3):P 160-163, Sep–Dec 2009.
[6] Seymour RA, Ellis JS, Thomson JM. Pathogenesis Of Drug Induced Gingival Overgrowth. J ClinPeriodontol. 1996;23:165–75.
[7] Jorgensen MG. Prevalence Of Amlodipine Related Gingival Hyperplasia. J Periodontol1997;68:6