Original Article

Drug Influenced Gingival Enlargement Presenting As A Lymphoplasmacytic Lesion: A Case Report

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Abstract

Gingival enlargement [GE] can be attributed to dental plaque induced inflammatory disease which may be further influenced by hormonal , nutritional , blood dysgrasia associated factors and systemic drug use. Anticonvulsants, immunosupressants, and calcium channel blockers are known to influence the clinical progression of plaque induced inflammatory GE . GE influenced by CCB Amlodipine may develop within months of administration and present with connective tiisue lymphoplasmacytic infiltrates on histopathologic evaluation. Lymphoplasmacytic infiltrates are also seen in plasma cell disorders, plasma cell gingivitis, leukemia, hodgkins lymphoma, multiple myeloma and hepatitis C infection may pose as possible differential diagnoses. In this case report an Amlodipine induced GE which presented with the histopathological features of a lymphoplasmacytic lesion was managed by non-surgical periodontal therpay and drug substitution leading to the subsequent resolution of both the clinical lesion and lymphoplasmacytic infiltrate upon histopathologic investigation during follow up period over one year.

Key-words: Gingival overgrowth, Calcium channel blocker, Amlodipine

Introduction:

Anticonvulsants, calcium channel blockers, and immunosuppressants are known to influence clinical course of plaque induced inflammatory gingival enlargements [GE] in genetically predisposed patient sub-sets referred to as responders [1,2]. Dihydropyridine calcium channel blocker [CCB] Amlodipine used in therapy of hypertension has been reported in literature to be associated with GE at daily dose of 5 to 10 mg with less prevalence as compared to that of nifedipine [3,4].

CCB drugs nifedipine and amlodipine influenced GE are attributed to having reactive fibroblast species that exhibit enhanced collagen and glycosaminoglycan synthesis in response to elevated pro-inflammatory cytokines

Transforming growth factor beta, Interleukin 6 and Interleukin 1 beta seen in plaque induced gingival inflammation [4,5,6,7,8]. Defective collagenase activity , decreased folic acid uptake, decreased aldosterone synthesis, and increase in adrenocorticotropic hormone and keratinocyte growth factor levels are other non-inflammatory mechanisms associated with CCB influenced GE [4,5,6,7,8]. CCB induced GE could be detected clinically within months of administration presenting as localized or generalized, soft and oedematous or fibrotic nodular lobulated growths involvement of the marginal and interdental gingiva affecting the anterior teeth more as compared to posterior teeth posing aesthetic problems and difficulty in performing oral hygiene [9]. Diagnosis is established through histopathology and treatment involves oral prophylaxis, dug substitution and folic acid supplementation. Histopathologic features of CCB include lymphoplasmacytic infiltrates which are similar to that seen in other lymphoplasmacytic lesions such as plasma cell disorders, plasma cell gingivitis, leukemia, Hodgkin's lymphoma, multiple myeloma and hepatitis C infection. Therefore, detailed clinical correlation is needed to rule out other differential diagnosis in the management of CCB influenced GE.

Observation:

An otherwise asymptomatic moderately well-built and nourished 49-year female patient had reported with a chief complaint of swelling in the gums in all regions of both jaws since the past 2 months [Figure 1a].

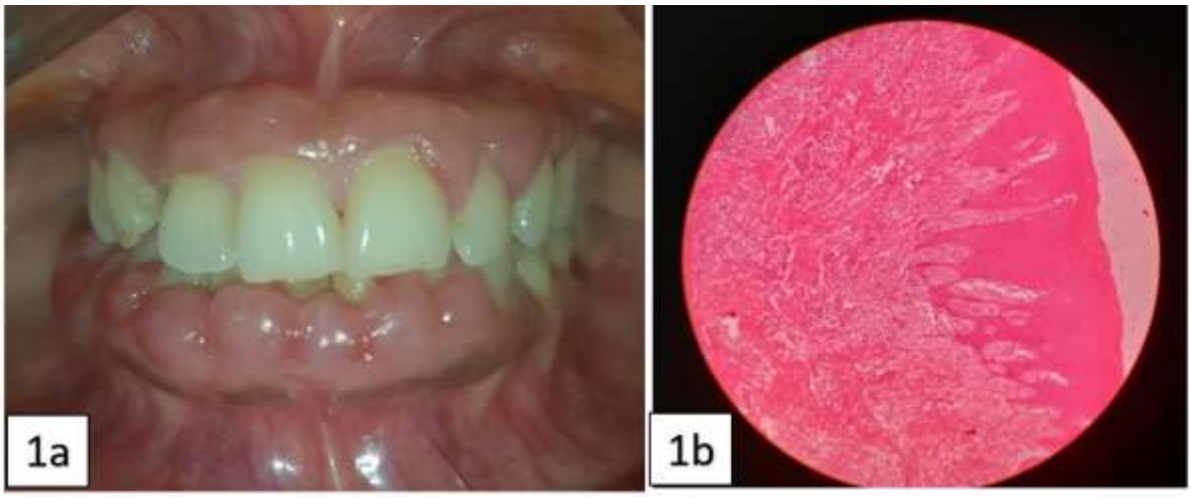

Figure 1 :
a. Clinical presentation at the time of first report
b. Histologic impression upon biopsy at time of first report

The GE first appeared in the interdental papillae and then the marginal gingivae and gradually progressed to the present extent over 2 months associated with bleeding on the slightest provocation on speaking, eating and brushing. The patient was in good health until diagnosed with hypertension and vertigo 3 months prior and was taking 2.5 mg of Amlodipine ever since. Meclizine 16 mg for vertigo was prescribed once daily for two weeks after which it was discontinued. The patient reported no relevant family history. Patient gave personal history of having irregular periods which was attributed to menopause upon medical opinion. The patient reported chewing tobacco occasionally for 2 years and had stopped the habit at the time of report. There was no abnormality detected or signs of lymphadenopathy upon Extra oral examination. Intra oral examination revealed the teeth with a considerable number of debris and calculus deposits with generalized marginal and interdental papillary GE being painless, soft and oedematous, reducible, non-pulsatile, lobulated, smooth textured demonstrating no stippling and associated with profuse bleeding on probing. Radiographic examination through pantomography revealed generalized moderate horizontal pattern bone loss suggestive of periodontitis with severe vertical bone loss with 45 [Figure 2].

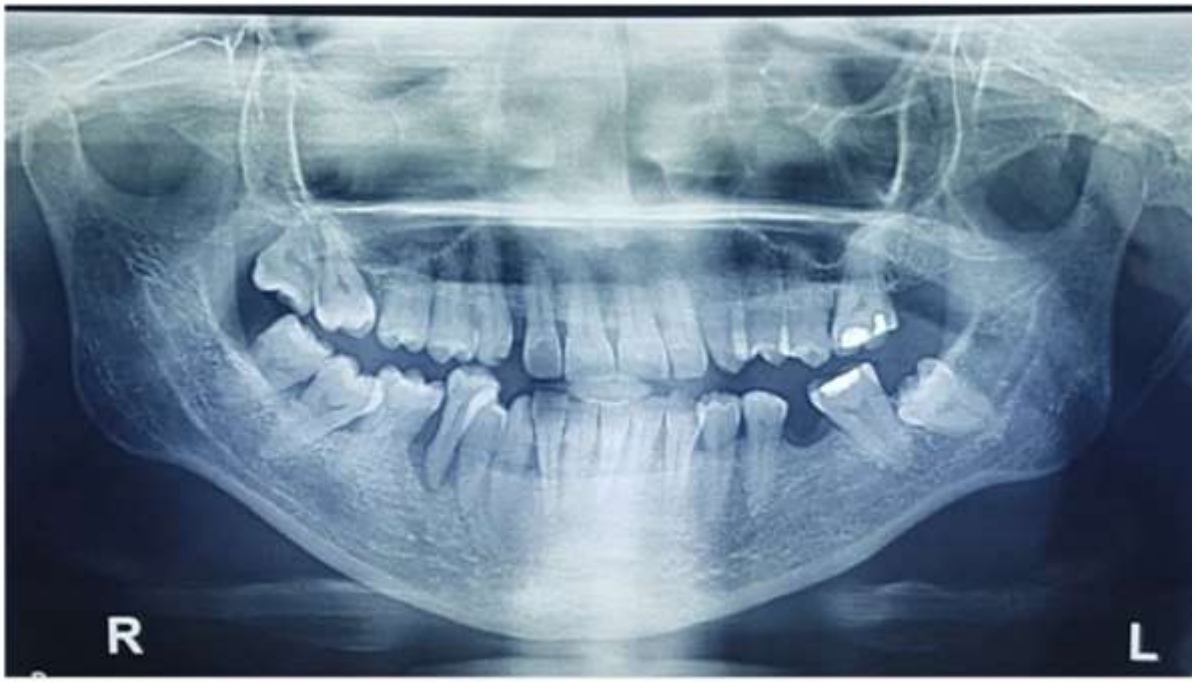

Figure 2: Radiograph taken at the time of first report

The patients Hemogram, Urine analysis, bleeding time and clotting time were within normal range. A differential diagnosis of amlodipine influenced gingival overgrowth and peripheral giant cell granuloma with 45 was arrived upon. Histopathologic examination through biopsy of the lesions from both the mandibular anterior gingivae and gingivae irt 45 was suggestive of a lymphoplasmacytic lesions [Figure 1b]. Serological tests were non-reactive for HIV and Hepatitis B and C. As per clinical history the lymphoplasmacytic infiltrate was attributed to the influence of Amlodipine. A medical opinion was sought for drug substitution and the consultant physician substituted 2.5 mg of Amlodipine with 40 mg of Telmisartan on a daily basis. A thorough scaling and root planing was performed with systemic antimicrobial Amoxycillin trihydrate 500mg TD and Metronidazole 400mg BD for 7 days. The patient was advised to use undiluted chlorhexidine gluconate mouth-rinses 0.2% w/v with topical application of 1% metronidazole and chlorhexidine combination gels twice daily following brushing after meals. Upon follow up there was reduction in gingival inflammation, GE and episodes of induced gingival bleeding. At 6 months follow up with biopsy the gingival enlargement demonstrated a significant reduction in size, inflammation and reduction the lymphoplasmacytic infiltrate [Figure 3a & 3b].

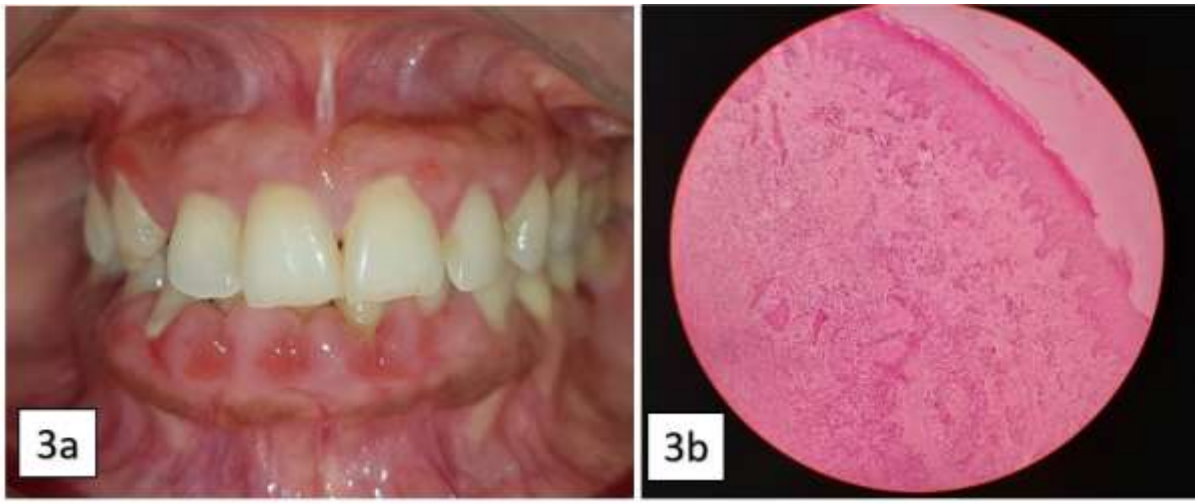

Figure 3 :
a. Clinical presentation at the time of 6 month follow up
b. Histologic impression upon biopsy at 6 month follow up

The patient was asked to continue the same oral hygiene regimen. At 12 months follow up the GE had considerably reduced in size and demonstrated firm and fibrotic consistency bearing clinical semblance of chronic inflammatory fibrotic GE [Figure 4].

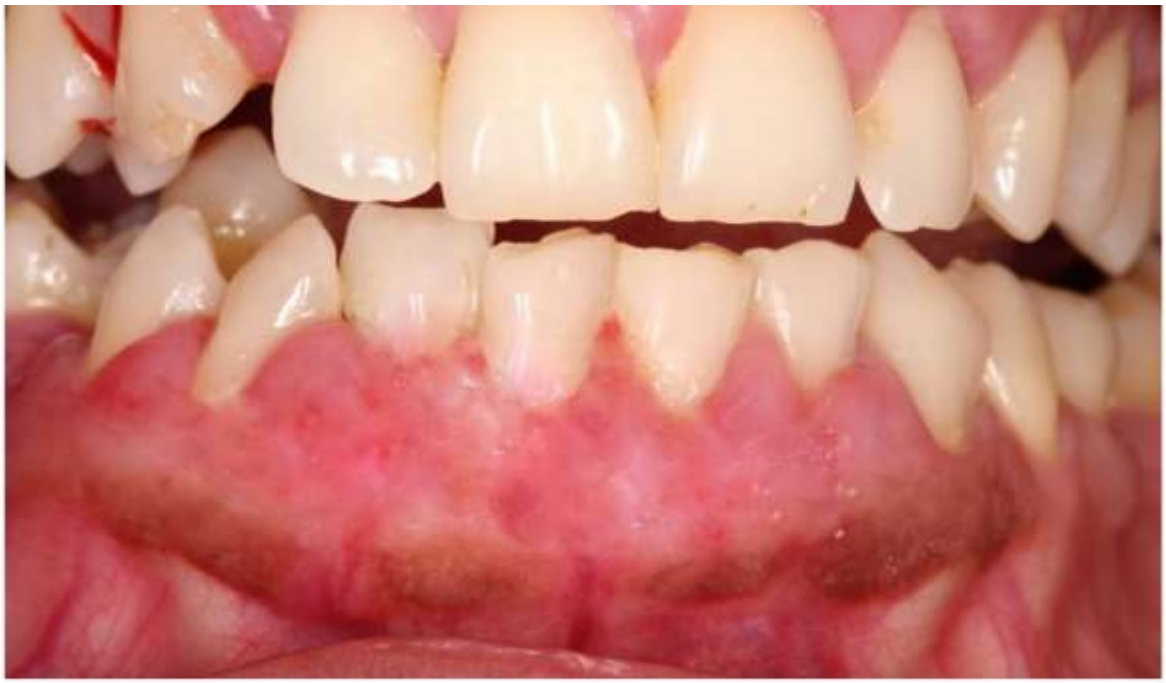

Figure 4 :Clinical presentation at 12 month follow up

45 having hopeless periodontal prognosis was extracted with healing being uneventful. The patient was advised surgical correction but failed to report for the same and was lost to further follow-up.

Discussion:

Histopathological impression of CCB induced GE is characterized by para-keratinized epithelium with epithelial ridges penetrating deep into the highly vascularized connective tissue demonstrating fibrosis, hyalinization, dense collagen and glycosaminoglycans with mild-to-moderate lymphoplasmacytic inflammatory infiltrate dominated

by plasma cells and to a lesser extent lymphocyte [9,10]. Lymphoplasmacytic infiltrates in connective tissue are also seen in various other lesions such as lymphoplasmacytic lymphoma, plasma cell gingivitis, plasma cell granuloma, leukemia, multiple myeloma, and hepatitis B or C infections. Owing to the possible differential diagnosis that may be arrived upon histopathologic examination, a clinical correlation of symptoms, signs and clinical course of gingival enlargement lesions in addition to other hematological investigations is needed to arrive upon a final diagnosis. In this case the presence of a normal hemogram, bleeding and coagulation parameters ruled out blood dysgrasia of leukemia, non- reactive serological reports ruled out viral influence, absence of Bence Jones proteins in urine ruled out multiple myeloma, absence of lymphadenopathy and Reed Sternberg cells ruled out non-Hodgkin's and Hodgkin's lymphoma respectively. Radiographic features suggestive of periodontitis indicated plaque induced pathology. The lesion irt 45 was associated with vertical bone loss and endodontically involved did give clinical impression of plasma cell granuloma but did not demonstrate any distinct histopathologic features as compared to other sites and had resolved following extraction of 45[11,12,13]. The resolution of the GE and the lymphoplasmacytic infiltrate on drug substitution and non-surgical periodontal therapy therefore reiterated that this condition was indeed influenced by Amlodipine.

Conclusion:

In this case report an Amlodipine induced GE presented with the histopathological features of a lymphoplasmacytic lesion which subsided by non-surgical periodontal therapy and drug substitution thus ruling out other conditions with similar histological presentation.

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