Case Report

A curious case of gingival enlargement - From seropositive diagnosis for human immunodeficiency virus to periodontal management

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Abstract:

Gingival enlargement may be a result of multifactorial etiology which includes local factors such as calculus, food lodgement, overhanging restorations, and overextended dentures as well as systemic conditions such as hormonal disturbances and blood dyscrasias. Acquired immune deficiency is a manifestation of immune disorder caused by a retrovirus Human Immunodeficiency Virus (HIV). The association of Acquired Immunodeficiency Syndrome or HIV with oral and periodontal lesions is highly significant. Seropositive patients usually present with periodontal diseases and atypical periodontal lesions. These clinical findings may prove to be a link for probing patients' systemic health. This case report describes one such case of a patient, unaware of HIV infection with localized gingival overgrowth, wherein detailed probing and investigation led to the diagnosis of underlying systemic condition as acquired immunodeficiency. Subsequently, antiretroviral therapy was started, and nonsurgical periodontal therapy was performed to resolve the gingival overgrowth.

Key words:

Anti-retroviral therapy, CD4 lymphocyte count, gingival overgrowth, human immunodeficiency virus infection, periodontal disease

INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) continues to be a global pandemic since a decade or a two. Oral manifestations are said to be early indicators for predicting the progression of Human Immunodeficiency Virus infection (HIV) to AIDS.[1] HIV infection has been associated with specific forms of periodontal disease and exacerbation of preexisting periodontal disease; however, the same has not been proved by epidemiological studies.[2,3]

This case report demonstrates one such scenario where oral manifestation acted as an important diagnostic tool for probing in to patient's systemic health thus proving a significant association of oral and general health.

CASE REPORT

A 43-year-old male patient reported to the department of periodontology in April 2019 with a chief complaint of swelling in the lower right back region of the jaw which persisted for 2 months. Initially, the patient noticed painless swelling of gums in the lower right back region of the jaw which gradually increased in size over the time, due to which there was difficulty in mastication [Figures 1 and 2]. The patient also gave a history of toothpick trauma associated with the affected region. On general examination, the patient appeared apparently healthy with no significant abnormality and normal vital parameters. The presence of swelling prompted us to check for lymph nodes which turned out to be nonpalpable and nontender. The patient also revealed that he experienced frequent fatigue and unintentional weight loss over a period of 3 months.

Intraoral examination revealed a soft, friable well-defined, gingival overgrowth, measuring

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Figure 1: Localized gingival overgrowth seen with respect to 44, 45, 46 on buccal aspect

Figure 2: Gingival overgrowth extending to lingual aspect of 44, 45, 46

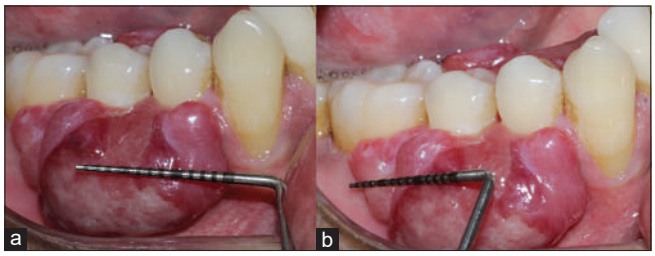

Figure 3: (a) Gingival overgrowth measuring 30 mm × 15 mm is seen. (b) Gingival overgrowth measuring 30 mm × 15 mm is seen

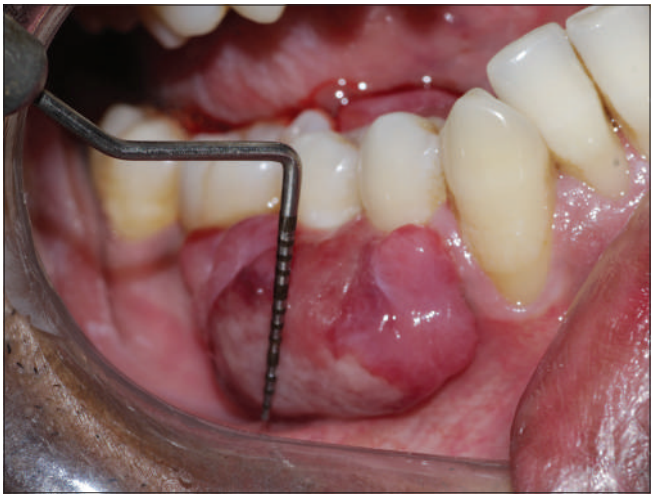

Figure 4: Gingival overgrowth measuring 30 mm × 15 mm in height is seen

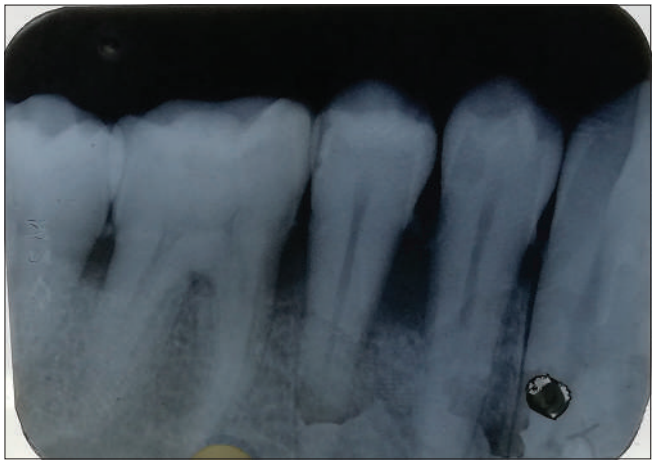

Figure 5: Intra-oral periapical radiograph showing interproximal bone loss with respect to lower right first premolar, second premolar and first molar

Figure 6: Second follow-up (after 2 months) showing reduction in overgrowth on the buccal aspect

15 mm × 30 mm with respect to lower right premolars and first molar, extending from buccal to lingual aspect [Figures 3a, b and 4]. The associated teeth, second premolar and first premolar showed Grade II mobility and Grade I mobility with a probing depth of 7 mm.

Investigations

Intraoral periapical radiograph showed moderate interproximal bone loss with respect to lower right first and second premolar and first molar [Figure 5]. The patient was subjected to hematologic investigations which included complete blood count, hemoglobin count, bleeding time and clotting time and serological examinations for HIV, and hepatitis B infection as part of routine investigation protocol. The patient returned with a positive enzyme-linked immunosorbent assay test for HIV and negative Hepatitis B Virus test. Patient's CD4 count was 196 cells/mm^3.

Treatment

As per physician's advice, patient's family members were also asked to get themselves tested for HIV infection. However, they tested negative. Before initiation of dental treatment, the patient was referred to physician for counseling. Phase

Figure 7: Second follow-up (after 2 months) showing reduction in overgrowth on the lingual surface

Figure 8: Three-month recall visit-complete regression of overgrowth seen on the buccal aspect

Figure 9: Three-month recall visit-complete regression of overgrowth seen on the lingual aspect

I of periodontal treatment plan began with scaling and root planning, oral hygiene instructions, correction of brushing technique, and recall to assess oral hygiene. This was to be followed by surgical excision in Phase II. Universal precautions were followed throughout the procedures which included good hand hygiene practices and use of protective barriers such as disposable gloves, masks, eyewear, and gown during routine periodontal care.

The patient was recalled after 4 weeks and every month thereafter to re-assess the oral condition. At the 1st recall (after 4 weeks), there was only slight reduction in the gingival overgrowth. Surgery was deferred as the CD4 count was below 200 cells/mm^3 since it is associated with postsurgical complications.[4] However, on subsequent recalls, there was drastic reduction of the gingival overgrowth [Figures 6 and 7]. Mobility associated with premolars reduced to Grade I. Moreover, probing depth was not more than 4 mm.

At 3-month follow-up, a repeat CD4 count was 313 cells/mm^3. The patient showed good oral hygiene with complete remission of overgrowth and no opportunistic oral infections [Figures 8 and 9].

DISCUSSION

"Oral health as a mirror of general health" has been stressed upon by many researchers, which can be effectively done only with meticulous diagnosis and investigations.

Although data regarding the association between CD4 counts in HIV-positive patients and periodontal disease are conflicting, low CD4 counts suppresses the immune system and increases occurrence of opportunistic infections, thus making CD4 count a risk factor for oral lesions.[5] It is only due to the advent of highly active antiretroviral therapy (HAART), there has been a significant reduction in oral manifestation from 45%–85% to about 32%–46%.[6]

In the reported case, the patient was unaware of being infected by HIV. There were no signs of any systemic disease barring frequent fatigue and weight loss. The absence of any typical oral manifestations of HIV infection prompted us to investigate further. Thus, an extensive blood investigation revealed that patient was HIV seropositive with Center for Disease Control and Prevention (CDC) clinical category C/WHO Stage 3.[5]

Periodontal involvement and localized gingival overgrowth could be attributed to suppressed immune system as a result of low CD4 count, although contribution of etiologic factors such as plaque, calculus, and history of toothpick injury could not be denied. Scaling and root planning helped in the elimination of etiologic factors but did not result in reduction of the overgrowth necessitating surgical procedure. According to CDC guidelines, complex periodontal procedures are to be postponed in cases where CD4 count is <200, since it is associated with high chances of postsurgical complications. Hence, in our case, surgical excision was deferred further.[7]

Differential diagnosis

Localized gingival enlargement are reactive lesions of gingiva which includes pyogenic granuloma, peripheral fibroma, peripheral ossifying fibroma, peripheral giant cell granuloma (PGCG), hemangioma, and Kaposi's sarcoma.[8]

The pyogenic granuloma is a smooth surfaced, ulcerated, sessile or pedunculated mass, growing from beneath the gingival margin but may penetrate interdentally. It may present as bilobular mass connected through the col area. It is highly vascular and bleeds easily. Peripheral fibroma is usually firm, pink, and uninflamed mass that grows from under the free gingival margin or interdental papilla with no interdental spread. Ossifying fibroma or peripheral odontogenic fibroma

occurs majorly on the gingiva and it has a minimal vascular component unlike a pyogenic granuloma. The PGCG occurs mostly in younger patients and is seen as an isolated epulis in the anterior region. They are purplish-red in color and have tendency to bleed. Erosion of adjacent bone along with separation of adjacent teeth is a common finding.[9] Hemangiomas are vascular malformations and are usually bluish in color which blanches under digital pressure. The differentiation of Kaposi's sarcoma from pyogenic granuloma is made from histologic features such as proliferation of dysplastic spindle cells, vascular clefts, extravasated erythrocytes, and intracellular hyaline bodies.[8]

Anti-retroviral therapy, decreases viral load and increases CD4 count, enhancing defence mechanism of the patient. A 3-month recall visit which showed increased CD4 count to 313 cells/mm^3 may also have resulted in decreased viral load thereby leading to complete resolution of the overgrowth with decreased pocket depth and mobility. Such complete remissions are rare but have been witnessed by Birendra *et al*. 2015, where anti-retroviral therapy led to regression of refractory B-cell lymphoma.[10] Similar remission was also seen in mucocutaneous Kaposi's sarcoma, wherein the lesion regressed spontaneously after 11 months of initiation of ART.[11] Thus, early initiation and patient compliance to antiretroviral therapy will decrease the risk of marked immunosuppression and will eventually help in preventing incidence, severity, and progression of periodontal disease.[12] However, in the present case, as biopsy was not performed, the definitive diagnosis of the lesion could not be established. Hence, after initiation of HAART, a biopsy is strongly recommended in such cases following all the universal precautions.

CONCLUSION

As detailed diagnosis and an extensive investigation aided in identifying the underlying systemic condition, this case report emphasizes that clinical findings may be just a tip of an iceberg waiting to be fully discovered. However, spontaneous regression of such a large overgrowth even in a healthy patient is a rare entity. Its regression in immunocompromised HIV patient signifies the importance of ART and in-turn also suggests association of immunodeficient state with the oral lesions.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Armitage GC. Development of a classification system for periodontal diseases and conditions. Ann Periodontol 1999;4:1-6.
2. Ryder MI, Yao TJ, Russell JS, Moscicki AB, Shiboski CH. Prevalence of periodontal diseases in a multicentre cohort of perinatally HIV-infected and HIV-exposed and uninfected youth. J Clin Periodontol 2016;44:2-12.
3. Winkler JR, Robertson PB. Periodontal disease associated with HIV infection. Oral Surg Oral Med Oral Pathol 1992;73:145-50.
4. Mandy FF, Nicholson JK, McDougal JS, CDC. Guidelines for performing single-platform absolute CD4+ T-cell determinations with CD45 gating for persons infected with human immunodeficiency virus. Centers for Disease Control and Prevention. MMWR Recomm Rep 2003;52:1-13.
5. Lamster IB, Grbic JT, Bucklan RS, Mitchell-Lewis D, Reynolds HS, Zambon JJ. Epidemiology and diagnosis of HIV-associated periodontal diseases. Oral Dis 1997;3 Suppl 1:S141-8.
6. Schmidt-Westhausen AM, Priepke F, Bergmann FJ, Reichart PA. Decline in the rate of oral opportunistic infections following introduction of highly active antiretroviral therapy. J Oral Pathol Med 2000;29:336-41.
7. Agrawal SM, Hashmi S, Mudgal A. Managing HIV in oral surgery. Int J Oral Care Res 2013;1:22-5.
8. Gomes SR, Shakir QJ, Thaker PV, Tavadia JK. Pyogenic granuloma of the gingiva: A misnomer?-A case report and review of literature. J Indian Soc Periodontol 2013;17:514-9.
9. Agrawal AA. Gingival enlargements: Differential diagnosis and review of literature. World J Clin Cases 2015;3:779-88.
10. Birendra KC, Afzal MZ, Wentland KA, Hashmi H, Singh S, Ivan E, *et al*. Spontaneous regression of refractory diffuse large B-cell lymphoma with improvement in immune status with ART in a patient with HIV: A case report and literature review. Am J Case Rep 2015;16:347-52.
11. Carvalho LB, Lucena LP, Honorato MC, Andrade GS, Freitas RA. Mucocutaneous Kaposi's sarcoma in an HIV-positive patient: Diagnosis and treatment. Brazilian Journal of Pathology and Laboratory Medicine. 2016;52:194-7.
12. Ryder MI, Shiboski C, Yao TJ, Moscicki AB. Current trends and new developments in HIV research and periodontal diseases. Periodontol 2000 2020;82:65-77.