Introduction

Kaposi’s sarcoma (KS) is associated with stage-3 human immunodeficiency virus (HIV) infection which is known as acquired immunodeficiency syndrome (AIDS). KS is the most common malignancy associated with AIDS. KS is associated with patients under antiretroviral therapy, organ transplantation, or immunocompromised.

In 1994, Chang and Moore underwent genetic investigation and discovered a new virus which they named as KS-associated herpes-virus (KSHV) which was also known as human herpesvirus 8 (HHV-8). All KS contain viral DNA from HHV-8. Mode of transmission is sexual contact, organ transplantation, and maternal breastfeeding. It is common in homosexual partners. Stomatognathic manifestations appear as macules, papules, or tumors to be violet or purple in color. According to EC Clearinghouse classification, KS is one of the lesions which is strongly associated with HIV infection and KS being one of the most common manifestations of HIV infection, primary health care physicians should be well aware of the stomatognathic manifestations, as it may help the physician to take universal precautions while treating the patient and treat under high-risk category with a specific protocol.

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**Case Report**

A 40-year-old female patient reported to the dental OPD with chief complaint of pain in the lower right and left side of jaw since 2 months. Patient reported that she noticed multiple ulcerations in the attached and marginal gingiva on the right and left mandibular region since 14 months. Initially, ulcers healed by themselves, but with time the exacerbation of ulcers increased and presently the ulcerations did not heal for months. History of pain with the similar kind of ulcers was evident which was dull, aching, nonradiating in nature with no aggravating or relieving factors. Noted a history of bleeding while brushing. No history of any sensory loss, exfoliation of tooth, intraoral burn, or pus discharge from the affected areas.

Medical history revealed that the patient was HIV positive and is under antiretroviral treatment (ART) for the last 10 years since 2009. Presently, the CD4 count for the patient was 250. History of fatty liver associated with splenomegaly since 2 years and was under treatment. Patient was married and her husband was also HIV positive patient since 2001 before marriage and was under HAART therapy. Patient had 2 sons who were not affected. No history of any smoking or smokeless tobacco. On general examination, patient was well oriented to time place and person. Temperature was afebrile, pulse 78/min, blood pressure 110/85 mmHg, and respiratory rate 15/min. Build was lean and gait was normal. On extraoral examination, no gross facial asymmetry present. Noted hyperpigmentation on the left malar region [Figure 1]. Swelling present on the lower right chin region, on inspection size 2 cm × 1 cm approximately, shape roughly oval, surface covered with crustations, reddish in color, margins well defined. On palpation, the inspector findings were confirmed. Consistency was soft, tenderness was present, and no bleeding or pus discharge on manipulation; similar swelling of smaller size was present 1 cm anterior to it [Figure 2]. Lips were competent and TMJ movements bilaterally were smooth and synchronous. A single right submandibular lymph node was palpable of size 1 cm × 0.5 cm approximately, shape roughly oval, firm in nature, fixed to the underlying structure, and tender on palpation. On intraoral examination, there were multiple ulcerations present with the lower anterior region and right side of jaw extending anteroposteriorly from 35 to 46 region. Consistency was soft to firm in nature; surface was covered with yellowish slough surrounded by erythematous halo. Ulcerations were seen both buccal [Figure 3] and lingual side [Figure 4] of the alveolus in the same region. Similar ulceration was seen in the maxillary jaw extending anteroposteriorly from 21 to 24 region on the lingual side, and erythema with a bluish hue with swelling was seen on the buccal side of maxilla [Figure 5]. Gingiva was normal with no bleeding on probing and no clinical pockets. With the clinical examination, the provisional diagnosis was KS affecting the maxillary and mandibular jaw.

Patient was advised to get the CD4 count and routine blood report. The report revealed CD4 count was 220 cells/mm$^3$, hemoglobin was 10.2 g%, and total white blood cell count was 8400/mm$^3$. The other blood investigations were within normal range.

Histological examination from the ulcerative area from the right side of gingiva revealed angiomatoid slit like vascular spaces containing red blood cells surrounded by spindle cells [Figure 6]. The spindle cells were arranged in fascicles and their nuclei did not show any atypical features or mitotic activity. In between tumor cells, deposition of hemosiderin pigment and infiltration by mononuclear cells were identified which were suggestive of KS.

The treatment advised was oral prophylaxis and antiretroviral therapy (lamivudine 150 mg BD, stavudine 30 mg BD and efavirenz 600 mg HS) with chemotherapy. There was no improvement in patient’s condition and she died within 9 months.

**Discussion**

In developing countries like India, stomatognathic manifestations are used for screening of life-threatening diseases like HIV. The first report of AIDS-associated KS in India was described in the
year 1993; since then very few case reports of AIDS-associated KS are described in Indian literature [Table 1].[4–8] Shroff et al. in 1993 reported a case of AIDS-associated KS, in which patient was treated with intraleisonal injection of vincristine and Alpha interferon (sublingually) with some regression of skin lesions. Kumarasamy et al. in 1996 described a case of Indian drug user showing cutaneous lesions of KS, the outcome of this patient is not known. In 2002, Chandan et al. reported a case of AIDS-associated KS in an Indian heterosexual male. Krishna and Reddy reported a case of KS in a 39-year-old male. This patient was previously diagnosed case of malignant schwannoma; subsequently, on follow-up visits, he showed antibodies to HIV1 and multiple noduloulcerative lesions on limb.[7] Shenoy et al. described a case of KS in a patient with severe thrombocytopenia.[8] Pires et al. presented a case of KS where they described that presentation of KS as erythematous maculae on the dorsum of the nose with progressed to face, treated with chemotherapy associated with ART.[9] Cáceres et al. reported a case of 44-year-old male patient with disseminated dermatosis with high reddened converging lesions into plaques, acquiring violaceous color.[10] The low prevalence of KS in our country may be explained due to the low prevalence of HHV 8 in our population.
Conclusion

KS can be diagnosed by the dentist through oral examination, confirming the diagnosis with histopathological examination. It is mandatory for the Dental surgeon to have knowledge about the oral manifestations due to HIV positive patients. There are various treatment protocols for the treatment of KS, and it is up to the decision of the dental surgeon to decide the most appropriate therapy for each case. The association of systemic chemotherapy with local intralesional injections favors the remission of lesions being an effective therapeutic option.

Declaration of patient consent

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

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Conflicts of interest

There are no conflicts of interest.

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