Intraoral plasmablastic non-hodgkin’s lymphoma associated with human immunodeficiency virus

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ABSTRACT

Plasmablastic Lymphoma of oral cavity is an aggressive rare form of Non Hodgkin’s Lymphoma which is an Acquired Immuno Deficiency Syndrome defining condition. Head and neck region is the second most common area for extranodal NHL’s primarily involving gingiva and palate, which often presents as a diagnostic problem. We report a case of PBL in a 19 year old female patient later diagnosed as Human Immunodeficiency Virus (HIV) positive. She presented with expanding painful ulceroproliferative lesion involving left mandible and gingiva of 20 days duration. Histopathological examination and immunohistochemical analysis confirmed the diagnosis. Uncommon discovery of multiple bony lesions in whole body CT and hypercalcemia raise a question about Multiple Myeloma (MM). Literature showed very few cases with osteolytic lesions and none of the cases reported multiple bone lesions in skull. Our case report stresses the importance of differentiating this extremely rare case of PBL with skull lesions from MM.

Key words: Human immunodeficiency syndrome, multiple myeloma, non-hodgkin’s lymphoma, plasmablastic lymphoma

CASE REPORT

A 19-year-old female presented to the outpatient department with a chief complaint of worsening swelling in the lower left back tooth region for the past 20 days. The swelling was preceded by severe, continuous, radiating tooth pain associated with a severe mobility. The swelling has been gradually increasing in size since its appearance from...
3 months and it is associated with difficulty in mouth opening. No history of fever, loss of appetite, or weight loss was elicited. The patient did not find any pain relief after medication. No history of bleeding or discharge from the swelling was noted. The patient complained of paresthesia associated with the swelling for 2 weeks.

General physical examination revealed that the patient was moderately built, poorly nourished, asthenic, and showed pallor indicating anemia. The patient was febrile during examination. Extraoral examination revealed a solitary, unilateral, oval-shaped diffused swelling in the left lower one-third region of the face confined to the angle of mandible and submandibular region, extending anteriorly to the submental region with indistinct edges [Figures 1 and 2]. The skin overlying the swelling was stretched without any secondary changes. It is firm and tender on palpation without local rise in temperature. It is a nonreducible, noncompressible, nonfluctuant, and nonpulsatile swelling showing no evidence of translucency. The left submandibular lymph node is enlarged, hard, and movable on palpation.

Intraoral examination revealed a solitary, oval-shaped ulcerative proliferative lesion in the lower gingivobuccal sulcus confined to the teeth 35, 36, and 37 measuring approximately 5 cm × 4 cm in size and extending anteriorly from the mesial aspect of 35 till the distal aspect of 37. On palpation, the edge of the ulcer was raised with the ulcer base resting on the attached and marginal gingiva in relation to 35, 36, and 37. The floor is covered by granulation tissue with inflammatory exudates [Figure 3]. It is soft and tender on palpation, without any induration of the edge and showed bleeding on touch. It caused obliteration of the vestibule. Involved teeth, i.e., 35, 36, and 37 showed grade III mobility. A provisional diagnosis of Kaposi’s sarcoma was performed.

The differential diagnosis, NHL, poorly differentiated squamous cell carcinoma, and Hand–Schuller–Christian disease was considered. On blood investigations, the patient was reactive to HIV I and II by enhanced chemiluminescence ELFA and Tridot assay and negative for hepatitis B surface antigen. Orthopantomogram revealed an ill-defined radiolucency extending anteroposteriorly from the distal aspect of 34 till the distal aspect of 37 and superoinferiorly from the crest of mandible with complete destruction of the trabeculae causing thinning of the lower border of the mandible. Multiple punched out radiolucencies were seen in the mandible bilaterally extending throughout the length of the ramus and body [Figure 4]. Posterio-anterior skull, skull true lateral [Figure 5], and pelvic radiograph [Figure 6] also showed multiple radiolucencies, giving a typical appearance of multiple myeloma (MM).

Whole body computed tomography scan revealed ill-defined radiolucency in relation to 35, 36, and 37 with lingual cortical erosion extending up to the lower border of the mandible. Multiple irregular lytic lesions were seen extending throughout the ramus and body of the mandible [Figure 7]. Such lesions were also seen in the left maxillary sinus, wall of the right orbit, and skull. Multiple
lung nodules, soft tissue lesions in liver, and sigmoid colon were detected giving an impression of end-stage neoplasia. Owing to the presence of multiple bony lesions throughout the body, we further subjected the patient to additional investigations [Table 1].

Serum creatinine, blood urea nitrogen, and uric acid levels were elevated indicating a significant renal failure. Elevated serum alkaline phosphatase level indicated altered liver function. Elevated serum calcium further raised a question about MM; although Bence Jones proteins were negative.

A fine-needle aspiration cytology and incisional biopsy of the lesion were advised. The histopathology report revealed monomorphic proliferation of round-to-ovoid cells with a plasmacytoid morphology, areas of mature small lymphocytes, and tangible body macrophages. Anisocytosis and nucleosis of the plasmacytoid cells with mitotic figures are seen [Figure 8]. A histopathological diagnosis of NHL of plasmablastic type was formulated. Immunohistochemistry was performed [Table 2]. It was positive for leukocyte common antigen (LCA), CD138 [Figure 10], and Kappa. Ki67 index was > 90%, thus confirming plasmablastic NHL.

The patient was further subjected to bone marrow aspiration cytology followed by bone marrow biopsy. The bone
nucleus and prominent nucleoli. Residual hematopoietic areas showed myeloid hyperplasia with an increase in neutrophil, eosinophilic series, and megakaryocytes, creating an impression of metastatic marrow.

Considering the status of the patient, she was referred to KIDWAI Memorial Institute of Oncology, a tertiary center, where she was started on Highly Active Anti Retroviral Therapy (HAART), and palliative pain relief was provided. She progressed into renal failure and expired within a span of 4 months.

DISCUSSION

PBL was first described by Delecluse et al. in 1997. The WHO has classified PBL as a Non-Hodgkin’s B-cell Lymphoma, which occurs predominantly in HIV-positive patients. AIDS-related lymphomas often occur extranodally and were seen as aggressive clinical course. PBL is characterized as a DLBCL, typically known for its aggressive nature and plasmacytic differentiation.

The sites of intraoral presentation are gingiva, palate, and tongue rarely. It usually presents as a nontender, soft-to-firm swelling of the area involved with overlying ulcerations; commonly causing gingival swelling associated with a tooth. It erodes the adjacent bone, causes the disappearance of lamina dura, presenting as solitary ill-defined radiolucency. In our case, the lesion involved the left posterior mandible and the gingivobuccal complex, causing lingual bone erosion and associated tooth mobility.

Kane et al. proposed minimum diagnostic criteria for PBL in developing countries with limited resources, the criteria were as follows:

1. Predominant population of plasmablasts exhibiting high nuclear-to-cytoplasmic ratio, moderate amount of amphophilic cytoplasm, and round nucleus with prominent nucleolus
2. High mitotic and/or apoptotic index
3. Absence of neoplastic plasma cells in the background.

In addition to morphological criteria, they defined a diagnostic immunophenotype consisting of CD20 negativity, LCA (±), diffuse positivity for CD138/Vs38c, light chain restriction, and a high Ki-67 index (>60%). Considering Kane et al. criteria, the investigations done in our case fulfilled all the morphological and immunophenotypic criteria. Immunoglobulins are mostly of IgG type having κ or lambda light chains. Our case showed positivity for kappa light chains. Apart from the markers mentioned in the Kane’s criteria, CD38 and MUM1 positivity and CD79a and PAX-5 negativity are characteristic of plasmablastic NHL.

PBL should be differentiated from other AIDS-related lymphomas. Immunoblastic DLBCL is positive for CD20,
It is found in the bone marrow of patients with PBL and, more than half of the HAART to traditional

Dickkopf-1 is elevated in

Although the number of AIDS-affected individuals declined by one-third in Southeast Asian countries, there is a reported increase of NHL in India. NHL is the second most common

CONCLUSION

According to Chao. C et al., more than half of the HIV-positive patients with NHL died within 2 years of diagnosis, compared with 29% of the HIV-negative NHL patients, having HIV associated with a nearly 6-fold increase in 2-year mortality rate. Patients with PBL and HIV infection have an overall survival rate of 14 months despite treatment, henceforth proving the aggressive and fatal nature of the disease. Authors of our case report conclude that multiple bone lesions result in unfavorable prognosis.

Declaración de paciente consentimiento

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.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Hanna E, Wanamaker J, Adelstein D, Tubbs R, Lavertu P. Extranasal lymphomas of the head and neck. A 20-year experience. Arch Otolaryngol Head Neck Surg 1997;123:1318-23.

2. Kaur T, Nayak R, Hosmani JV, Hugar D. Plasmablastic lymphoma, an oral manifestation of AIDS related complex in an HIV positive patient: A case report. Int J Contemp Dent 2010;1:64-7.

3. Raphael H, Bortisch B, Jaffe ES. Lymphomas associated with infection by the human immunodeficiency virus (HIV). In: Jaffe ES, Harais NL, Stein H, Vardiman JW, editors. World Health Organization Classification of Tumors of Hematopoietic and Lymphoid Tissues. 4th ed. Lyon: IARC Press; 2008. p. 260-3.

4. Kane S, Khurana A, Parulkar G, Shet T, Prabhakar K, Nair R, et al. Minimum diagnostic criteria for plasmablastic lymphoma of oral/sinonasal region encountered in a tertiary cancer hospital of developing country. J Oral Pathol Med 2009; 38: 138-144.

5. Vega F, Chang CC, Medeiros LJ, Udden MM, Cho-Vega JH, Lau CC, et al. Plasmablastic lymphomas and plasmablastic plasma cell myelomas have nearly identical immunophenotypic profiles. Mod Pathol 2005;18:806-15.

6. Matsuhashi Y, Tasaka T, Uehara E, Fujimoto M, Fujita M, Tamura T, et al. Diffuse large B-cell lymphoma presenting with hypercalcemia and multiple osteolysis. Leuk Lymphoma 2004;45:397-400.

7. Takasaki H, Kanamori H, Takabayashi M, Yamaji S, Koharazawa H, Taguchi J, et al. Non-Hodgkin’s lymphoma presenting as multiple bone lesions and hypercalcemia. Am J Hematol 2006;81:439-42.

8. Kaiser M, Mieth M, Liebisch P, Oberländer R, Rademacher J, Jakob C, et al. Serum concentrations of DKK-1 correlate with the extent of bone disease in patients with multiple myeloma. Eur J Haematol 2008;80:490-4.

9. Ramirez-Amador V, Esquivel-Pedraza L, Lozada-Nur F, De la Rosa-García E, Volkow-Fernández P, Siciliano-Bernal L, et al. Intralésional vinblastine vs 3% sodium tetradecyl sulfate for the treatment of oral Kaposi’s sarcoma. A double blind, randomized clinical trial. Oral Oncol 2002;38:460-7.

10. Chao C, Xu L, Abrams D, Leyden W, Horberg M, Tower W, et al. Survival of non Hodgkin’s lymphoma patients with and without HIV infection in the era of combined anti-retroviral therapy. AIDS 17, 24(11): 1765-70, 2010.