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Diffuse Large B cell Lymphoma on the Palate in an Immunocompromised Patient

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Case Report

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Abstract: Lymphomas of the oral cavity represent 5% of all lymphomas. Diffuse large B-cell lymphoma (DLBCL) is a subtype of non-Hodgkin's lymphoma (NHL). They usually occur in immunocompromised patients. We report a case of a 28yrs old patient presented with a painless swelling on palate. Histopathologically, the cells were large and round with scanty cytoplasm. The nuclei were hyperchromatic with prominent nucleoli. Based on clinical history, histopathologic features and immunochemistry markers (CD20, CD45, and CD3) the diagnosis of Diffuse Large B-Cell Lymphoma was given.
Keywords: Diffuse large B-cell lymphoma (DLBCL), non-Hodgkin's lymphoma (NHL), HIV, Immunochemistry, CD20, CD45, CD3

INTRODUCTION

Lymphomas are a heterogeneous group of malignancies of the immune system. Non-Hodgkins lymphoma (NHL) are a group of neoplasms that originate from the cells of the lymphoreticular system [1]. Non-Hodgkin's lymphomas (NHLs), in contrast to Hodgkin's disease, usually manifest outside of the lymphoid system. Skin, abdomen, lung, central nervous system, and oral cavity are common locations [2]. Diffuse large B-cell lymphoma (DLBCL) is the most frequently diagnosed type of non-Hodgkin lymphoma (NHL) and is the fifth most frequent cancer, accounting for 30– 40% of all cases reported[3]. NHLs of the oral cavity are rare and account for only 3–5% of the lymphomas reported [3]. They can be primary or secondary to extension from Waldeyer's ring[3]. DLBCL is a heterogeneous neoplasm with variable clinical, morphologic, immune phenotypic, cytogenetic, and genetic features [3].

DLBCL is characterized by a diffuse proliferation of large neoplastic B cells with nuclear size equal to or exceeding normal macrophage nuclei, or more than twice the size of a normal lymphocyte [3]. Oropharyngeal lymphomas are often complication of HIV-infected persons or immunosuppressed transplant recipients. Hodgkin and non-Hodgkin lymphoma in AIDS patients may appear even under potent antiretroviral therapy (2% of oral neoplasms in AIDS patients)[2]. However, non-immunosuppressed patients of any age can be also affected. We report a case of DLBCL on maxillary gingiva in a HIV seropositive patient.

CASE REPORT

A 28 year old male patient reported to the dental wing in a medical hospital with the chief complaint of painful palatal swelling since 3 months. The patient gave history of seropositivity for HIV. The swelling was insidious in onset and gradually increased in size. On examination the lesion was non tender showing lobulated growth approximately measuring 2.5cm x3.5cm arising from left anterior gingiva extending on buccal and palatal side. Buccal, the lesion extended from 23-24 and palatably from 21 -27 crossing the midline (Figure 1). The surface was lobulated, reddish white in color and soft to firm in consistency.

The lesion was excised and sent for histopathologic examination which revealed diffuse round hyperchromatic cells in the scanty connective stroma (Figure 2).The cells were large with eosinophilic cytoplasm and nuclei were hyperchromatic with

prominent nucleoli. Numerous abnormal mitotic figures were seen. Macrophages with ingested material were interspersed with the lesional cells. (Figure 3). The lesion was diagnosed as round cell tumor. Clinicopathlogic features were consistent with lymphoma. Immune histochemical analysis of the lesional cells showed positivity for CD 45 (Figure 4), CD 20 (Figure 5), and negative for CD 3. The final diagnosis of diffuse large B-cell lymphoma was made.

Fig-1: Non tender lobulated growth present on the palate

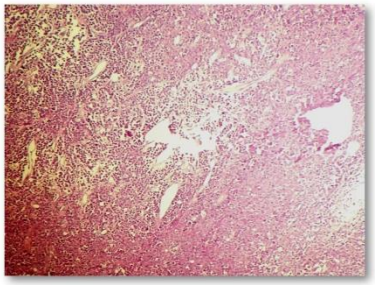

Fig-2: Diffuse arrangement of round, hyperchromatic cells in scanty connective tissue stroma with few vascular spaces (H&E stain x40)

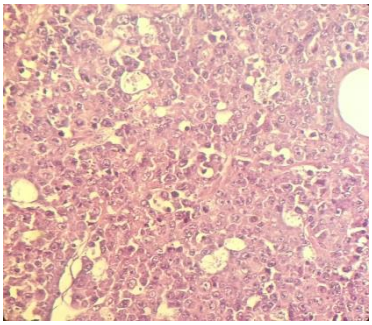

Fig-3: Large hyperchromatic cells with prominent nucleoli and few cells with abnormal mitotic figures. Macrophages with ingested material were interspersed with the lesional cells (H&E stain x100)

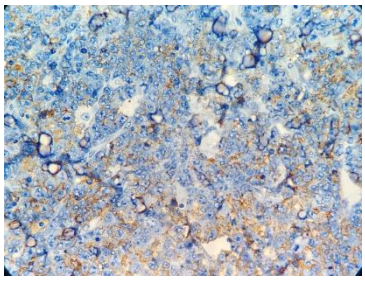

Fig-4: Lesional cells showing positivity for CD 45

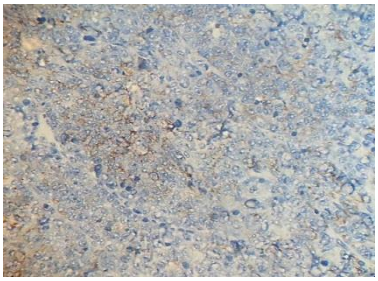

Fig-5: Lesional cells showing positivity for CD 20

DISCUSSION

NHL arises primarily within the lymph nodes; however extra nodal presentations are common in patients with NHL.Oral manifestations presented in only 3-5% of cases of NHL and are rarely the initial manifestation of the disease. [1]DLBCL rarely manifests as a primary malignancy in the head and neck region (1%). DLBCL has been reported in the oral cavity in the buccal mucosa, hard palate and gingiva [2]. The presence of DLBCL in the head and neck may be associated with undiagnosed HIV infection since they account for 2% of oral neoplasms in patients with AIDS [2]. The present case was diagnosed as DLBCL in a HIV patient.

The immunophenotype of diffuse large B-cell lymphomais variable; therefore it indicates that this comprises a heterogeneous group of tumors. More than 25% of LBCL have a translocation t (14; 18), and most of them express bcl-2 with or without a translocation present. Chromosomal rearrangements affecting the bcl-6 gene (regulator of germinal centre formation) at 3q27 are seen in 30% of LBCL extranodal tumors [2]. Immunohistological analysis showed DLBCL positive for CD10, CD45, and negative for CD3, CD5 marker [3].

Equal sex distribution is usually reported with few cases showing female predominance, but can be frequent in homosexuals, injecting drug users than in other patients liable to HIV [3]. Non immunosuppressed patients of any age can be affected; however, most patients are middle aged to older adults, with male preponderance. In the group of HIV-infected individuals, patients with lymphoma are almost all men, who are overall younger [4]. First symptoms of a large B-cell lymphoma of the oral cavity are a painless swelling, a non healing ulcer.

DLBCL was sub classified based on cytomorphologic features into centroblastic, immunoblastic and anaplastic. Centroblasts are medium to large in size with oval to round nuclei and fine vesicular chromatin patterns. They have two to four nucleoli opposed toward the nuclear membrane, and rarely may have multilobulated nuclei, which can predominate in extranodal disease. The tumor can be monomorphic (90% centroblasts) or polymorphic with admixed immunoblasts (centroblasts 90%). Immunoblots display a uniform cytology and almost all cells exhibit prominent central nucleoli with distinct rims of basophilic cytoplasm. In the anaplastic variant, the tumor cells are variably large cells with bizarre pleomorphic nuclei [1, 3, 5].

DLBCL can be classified as germinal center B-cell like (GCB) and non-germinal center B-cell like (non-GCB) lymphomas based on gene expression profiles and by immunohistochemical
expression of CD10, BCL6 and MUM-1[3].

Median survival was 34months in immunocompetent *vs*. 9 months in HIV-positive patients [6]. Early clinical stage and a complete response tochemotherapy were associated with longer survival. There was no apparent difference in survival with regimens more intensive than cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP)[6]. Møller *et al.* found that age and clinical stage influence the survival of patients with DLBCL [7]. Ho *et al.* also reported that the prognosis is influenced by clinical stage and histologic grade because large cell lymphomas are considered aggressive and have a poor prognosis [8]. Centeroblastic DLBCL has better prognosis than immunoblastic and anaplastic DLBCL.

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