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Clinicopathologic and Histologic Correlation of Diffuse Large B Cell Lymphoma of Maxilla, A Case Report

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Abstract: ***Diffuse large B cell Lymphomas are defined as neoplasms of large transformed B cells, i.e with nuclear diameter more than twice that of a normal lymphocyte. This accounts for 30-40% of all adult Non Hodgekins Lymphomas. Intraoral lymphomas are relatively rare and often difficult to diagnose clinically. In this case report, we describe a case of Diffuse Large B cell Lymphoma affecting the palate of a 35 years old male, along with its clinical, radiological, histopathological and immunohistochemical features.***

Keywords: Lymphoma, Non Hodgekins Lymphoma, Large B cell Lymphoma, palate .

1. Introduction

Lymphomas are malignant neoplasms of lymphoreticular cells[1]. They are mainly classified as either Hodgekins Lymphoma and Non Hodgekins Lymphoma, with the later being the most common according to the most recent American Cancer Society update. Non Hodgekins Lymphoma(NHL) are a heterogenous group of lymphoproliferative malignancies which can involve both lymph nodes and lymphoid organs as well as extranodal organs and tissues[2] Follwing Squamous Cell Carcinoma ,Lymphomas are the 2nd most common neoplasm of the head and neck region which accounts for 3.5% of all intraoral malignancies. Diffuse Large B cell Lymphoma (DLBCL) is a subtype of NHL characterized by diffuse proliferation of large neoplastic B lymphoid cells with nuclear size equal to or exceeding normal macrophage nuclei or more than twice the size of a normal lymphocyte(>than 20µm) [3,4].

DLBCL may originate denovo or represent progression from a less aggressive lymphoma, such as follicular or small lymphocytic lymphoma[6].It may be associated with some viral infections, mostly by Epstein Barr virus and commonly seen in immunocompromised patients.

Lymphomas more commonly affects the middle aged and elderly (40-80yrs) people with a male to female ratio of 3:2[7].It is frequently reported in the mediastinum, gastrointestinal tract, bone marrow, central nervous system, breast and testes[8].Involvement of oral cavity is rare and account for only 2-3% of all the lymphomas reported[9]. Among various head and neck sites, Waldeyers ring, which is the area encompassed by the nasopharynx, tonsil and base of the tongue, is the most often involved by malignant lymphoma. Nose, para-nasal sinuses, orbits, and salivary glands are the other sites affected in the head and neck regions. Maxilla is more commonly affected than mandible, out of which, palate and gingiva accounts for almost 70% of lesions involving maxilla[5].Lymphadenopathy is the most common manifestation of lymphoma. The initial intraoral symptoms are development of a painless swelling, non healing ulcer, fever, sweats and weight loss. When underlying bone is involved pain and tooth mobility may develop. Radiographs usually show an ill-defined or ragged radiolucency. Although in the early stages, the radiographic changes may be insignificant. Histopathologically, NHL are characterized by proliferation of lymphocytic appearing cells that may show varying degrees of differentiation, depending on the type of lymphoma. Low grade variety consist of well differentiated small lymphocytes whereas high grade lesions composed of less differentiated cells. Due to its diverse histologic pattern, the DLBCL can be diagnosed by immunophenotyping and shows positivity to different B cell markers (CD 45, CD 20, CD 79 a) [7].

NHL can be managed by chemotherapy, radiotherapy and surgery in various combinations. The prognosis of the disease is good with a maximum of 5 year survival rate in 30% of cases [5].

Based on the above clinico-pathological, radiological, histopathological and immunohistochemical findings, a case of diffuse large B cell lymphoma involving the left side of maxilla was diagnosed and has been discussed herewith.

2. Case Report

A 35 year old male patient reported to the Oral and Maxillofacial Pathology Department of Guru Nanak Institute of Dental Sciences and Research, Panihati, Kolkata, with a chief complaint of a painful swelling involving the palate for about last 20 days. There was a history of tooth extraction about 20 days back in the lesional site with appearance of subsequent rapid progressive swelling along with gradually increasing localized intermittent pain. Medical history revealed that the patient had moderate degree of fever for last one week associated with joint pain and anorexia. Extraoraly, there was presence of palpable, slightly enlarged, moderately tender, freely movable left submandibular lymph nodes with no obvious facial asymmetry. Intraoral examination revealed the presence of a diffuse, large , lobulated, moderately tender, noncompressible, soft to firm swelling involving both buccal and palatal aspect of maxillary left premolar and molar region associated with erythematous, irregular, ragged ulcerated lesion covered by yellowish pseudomembranous slough in the left posterior ½ of hard palate. Buccally, the swelling was soft on palpation in some areas and bleeds on probbing. Oral hygiene of the patient was very poor, along with presence of halitosis. Orthopantomogram (OPG) reveled a irregular bone

resorption between the maxillary left 1st and 2nd molar associated with widening of periodontal ligament space in relation to maxillary left 1st to 3rd molar region and obliteration of mesial margin of the left maxillary antrum.(Fig-1) Routine haematological investigations did not revealed any abnormal findings. Due to poor socio-economic condition patient could not afford to do CT scan.

Based on the above clinical and radiographic findings, an incisional biopsy was performed from the representative site of the lesion. The light microscopic features revealed the presence of actively proliferating neoplastic round lymphoid cells arranged in dense, monotonous sheet like pattern showing pronounced cellular and nuclear pleomorphism, nuclear atypia, nuclear hyperchromatism, cellular atypia, increased mitotic figures in the subepithelial connective tissue.(Fig-2) After considering the microscopic features, a diagnosis of Non Hodgekins Lymphoma was established but to determine the specific lineage, immunohistochemistry was performed. Tumour cells were intensely immunoreactive for CD45 & CD79a which indicates immature blast cell proliferations. Focal positivity for CD 20 and immunonegative for CD30, CD138, BCL6, CD10(Fig-3 & Fig-4) were also noted.

Based upon these findings, the case was finally diagnosed as High grade Diffuse Large B cell Lymphoma. The patient was advised to go for further treatment and management but he was refused to do so because of his poor socioeconomic condition.

3. Discussion

Malignant Lymphomas constitute a group of neoplastic proliferation process of lymphocytes and their progenitor cells [1]. Large B cell lymphoma is the most common type of Non Hodgekins Lymphoma which shows variable clinical, morphologic, cytogenetic and genetic features[2,3].

The usual clinical presentation of a DLBCL of the oral cavity are swelling, pain, ulcer, and associated regional lymphadenopathy. A non painful lymph node enlargement and a sub mucosal lesion at the junction of hard and soft palate are highly suspicious[10].The patient under discussion was a 35 year old male, having a diffuse, large, moderately tender, non compressible, soft to firm swelling involving the left half of the maxilla(both buccally and palataly) associated with superficial ulcerations and left submandibular lymphadenopathy. These clinical findings are consistent with the observations reported by the authors of different studies[5,7,8,9,10].

The conventional radiographic findings in the early stage of the disease is not significant except ragged areas of radiolucency but in some times, marked bony expansion along with cortical plate perforations noted if there is osseous involvement of the disease. The panoramic view of the present case was not very characteristic of the disease.

The light microscopic features of high grade diffuse large cell lymphoma usually reveal monotonous diffuse sheet like arrangements of malignant lymphoid cells with pronounced cellular and nuclear pleomorphism in the sub epithelial connective tissue [9].The nature of arrangements of tumour tissue and cells in the present case was strongly mimicking the features of high grade diffuse large cell lymphoma. The advanced diagnostic procedure –immunohistochemistry most commonly used for determination of particular cell lineage of lymphoma which expressed positivity to the B cell markers like CD 45,CD 79 a, CD 20 and negativity to CD 30, CD138, BCL 6 ,CD10-this IHC findings were strongly corroborative to the DLBCL[7].

During differential diagnosis procedure, all diseases which are characterized by lymphadenopathy, such as toxoplasmosis, mononucleosis, lymphadenitis, metastatic diseases and Hodgekin's disease, must be considered and excluded. Due to it's variable clinical features DLBCL should be diagnosed properly, otherwise improper / late diagnosis may deteriorates the prognosis of the disease.

4. Conclusion

The article highlights to develop awareness regarding the clinicopathological, diagnostic and prognostic approaches of lymphoma with the emphasis given on Diffuse Large B cell Lymphoma. The prognostic outcome of the disease process depends a lot on the early and efficient diagnosis. Therefore, a thorough clinical examination followed by proper histopathology and immunohistochemical evaluation of the affected individuals are essential for early diagnosis and effective treatment.

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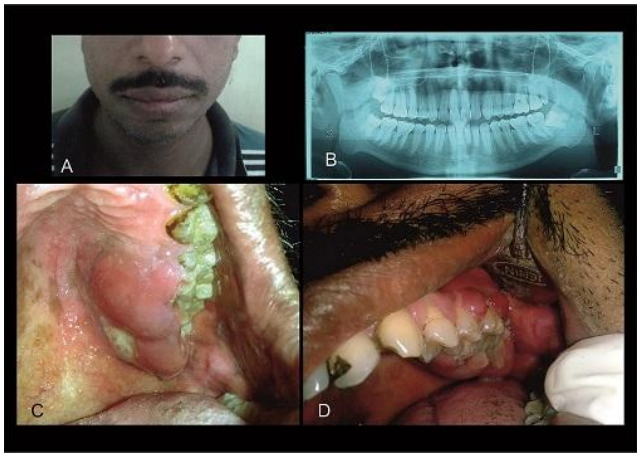

Figure 1: (A) Extra-oral photograph of the patient,**(B)** Orthopantomogram (dental panoramic radiograph)showing no abnormalities except obliteration of the mesial margin of the left maxillary antrum, **(C,D)** Intraoral photographs showing the presence of diffuse,large,lobulated swelling involving both buccal and palatal aspect of maxillary left premolar,molar region.

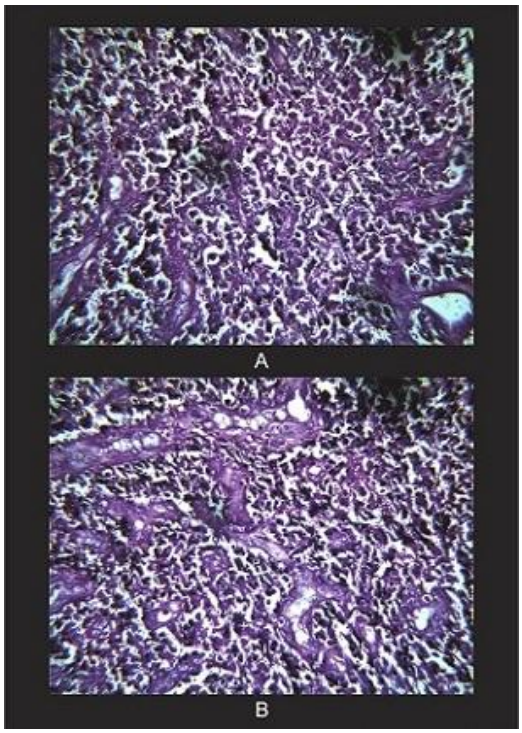

Figure 2: (A,B) High power photomicrographs showing neoplastic round lymphoid cells arranged in dense monotonous sheet like pattern along with invasion of neoplastic cells within the vascular lumen(H&E X40).

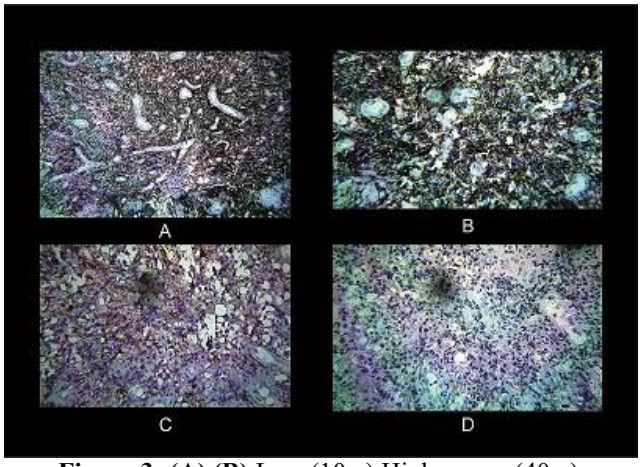

Figure 3: (A),(B) Low (10 x),High power (40 x) photomicrographs showing intense immunoreactivity of lymphoid cells to CD 45.**(C)&(D)** High power photomicrographs (40 x) showing focal immunopositivity of lymphoid cells to CD 20,CD 79 a.

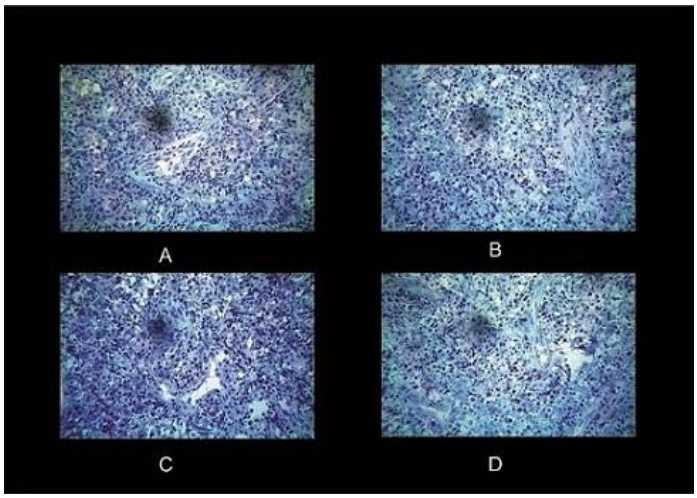

Figure 4: (A),(B),(C),(D) High power (40 x) photomicrographs showing immunonegativity of lymphoid cells to CD 30,CD10,BCL 6,CD 138.