ORIGINAL RESEARCH PAPER

Oral Medicine

HIGH GRADE PLASMABLASTIC LYMPHOMA OF MAXILLARY SINUS ASSOCIATED WITH HIV: A RARE CASE PRESENTATION WITH REVIEW

KEY WORDS: maxillary sinus, plasmablastic lymphoma, pedo patient

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ABSTRACT

Background: Plasmablastic lymphoma is a rare aggressive lymphoma commonly associated with HIV infection represent a diagnostic and therapeutic challenge for clinicians for its distinct clinical features. PBL involving the paranasal sinuses and oral cavity as primary extranodal site in children is rare and can be misdiagnosed clinically and radiographically as sinusitis and odontogenic infection. Careful evaluation of patient and proper investigations is required for early and correct diagnosis so that patient will receive the treatment in early stage which has a good prognosis. Here, we are presenting a unique case of PBL involving the maxillary sinus and oral cavity in a 13-year-old known HIV patient mimicking dental abscess.

INTRODUCTION:

Non-Hodgkin's lymphoma is a malignant lymphoma which arises within the lymphatic tissue and progress to an extranodal mass. Malignant lymphoma may be Hodgkins and non hodgkins lymphoma. Hodgkins lymphoma involves lymphnode region and may spread to other lymph node groups and bone marrow. NHL is a heterogeneous group of malignancies characterized by an abnormal clonal proliferation of T cells, B cells or both. The majority of the adult NHLs are of B-cell origin (80–85%).[1] NHL occurs in 3% of individuals with HIV disease and 1.66% in HIV sero negative group.[2]

Plasmablastic lymphoma (PBL) is a clinicopathological entity that was initially described in 1971 and is now considered a distinct subtype of diffuse large B-cell lymphoma (DLBCL) seen more commonly in patients with HIV infection.[3] Its hallmarks include extensive local invasion, rapid dissemination and recalcitrance to treatment.[4] Following table presenting the differentiating features of plasmablastic lymphoma between HIV positive and negative patient.

Features of plasmablastic lymphoma		HIV (+ve)	HIV (-ve)
Incidence		2.6% of all HIV-related lymphomas	3% of cases of NHL
Etiology		HIV, EBV	Solid organ transplantation or elderly patients or previously existing lymphoproliferative or autoimmune disorders or immunocompetent or EBV
Age	Most common	4th decade (7-86 yrs)	5th decade (14-98 yrs)
	Least common	Children	
Sex		Male (5.8:1)	Male (2.6:1)
Site	Most common	Oral cavity/jaw- 58% GIT- 12%	Nasal cavity and sinus- 17% Lymph node- 20%
	Least common	Skin- 6% Paranasal sinus- 9%	
Oral lesions	Incidence	58%	16%
	Site	Gingiva and palate	
Sinus lesions	Incidence	9-13%	17%
Tumor markers		Ki67, VS38c, CD38, MUM1, and CD138 (syndecan-1)	Lower expression of EBER, ki67
Complications		High rate of relapse and death	Reduced response to chemotherapy
Prognosis		Prognosis with most patients dying within 2 years	Worse prognosis with median survival time of 6 to 19 months

Here we have presented rare case of plasmablastic variety of non-Hodgkin's lymphoma involving maxillary sinus in a known HIV pedo patient.

Case presentation:

A 13-year-old male known HIV patient came with the chief complaint of pain and swelling over upper left back teeth region for 15 days. Swelling was sudden in onset and peanut sized initially which was rapidly increased to attain present size of 6*5cm. Pain was continuous and dull aching in nature. On extraoral examination, 5*6 cm sized diffuse swelling present over left middle third of face with normal overlying surface which was soft to firm in consistency, tender on palpation causing obliteration of nasolabial fold and mild proptosis of left eye. No regional lymphadenopathy was seen. (Figure 1)

On intraoral examination, 3*4cm sized well defined swelling present on left side of hard palate. Another 1*2cm sized swelling present over upper left buccal sulcus irt 22 to 26 with smooth normal overlying surface. (Figure 2) Swelling was soft to firm in consistency and tender on palpation. Grade 2 mobility was noted irt 24, 25. Teeth were not carious and no pus discharging sinus or fistula was present. Clinical findings were suggestive of malignancy. Kaposi's sarcoma, non-hodgkin's lymphoma was considered in clinical differential diagnosis.

OPG showed 2*3 cm sized ill-defined radiolucent lesion present irt upper left posterior teeth region extending from 23 to 26 with loss of continuity of floor of maxillary sinus. These findings were suggestive of malignant tumour. (Figure 3)

CECT showed homogenously enhancing soft tissue density lesion in left maxillary sinus, left nasal cavity with bony destruction of wall of left maxillary sinus, left nasal turbinate, floor of nasal cavity, hard palate, alveolar process of maxilla with extension into oral cavity, premaxillary soft tissue and left gingivo-labial sulcus supporting the diagnosis of malignancy. (Figure 4)

Biopsy showed malignant round cells with eosinophilic cytoplasm, vesicular nucleus and prominent nucleoli. At place tumour cell shows plasmacytoid appearance with mitosis seen. These features favoured non-Hodgkin's lymphoma high grade type. (Figure 5) IHC showed positive for CD138, LCA, CD79a, M1B1 and strongly positive for MUM1. IHC showed negative for CD10, CD20, PAX5, and CD2. (Figure 6) This showed plasmablastic variety. Considering all these findings the final diagnosis of **non-Hodgkin's lymphoma- plasmablastic variety** high grade type was made. The patient was referred to Gujarat cancer research institute for further treatment. Surgical excision of the lesion was done and the patient was under chemotherapy with 1 year follow up.

DISCUSSION:

PBL is an aggressive subtype of diffuse large B-cell lymphoma, characterized by proliferation of large neoplastic cells with immunoblastic/plasmacytic morphology. PBL occurs more commonly in immunocompromised patients in the setting of transplant or HIV positivity.[4,5,6] Oral involvement of PBL can be given clue to the diagnosis of HIV in many cases.[3]

PBL was reported in 21 pediatric cases[6], of which 18 were male (85%) with a median age at presentation of 10 years. 18 were HIV-positive and 3 were HIV-negative. More than 80% of pediatric PBL cases presented with advanced stage. In reported case, patient was 13 years old male with known HIV positive and under antiretroviral therapy.

None of the symptoms are particularly specific for oral PBL.[7] Oral lesions may appear as nontender swellings commonly affecting the vestibule, gingiva or posterior hard palate and develops slowly, mimicking a dental abscess of endodontic or periodontal origin[1] or it may present as a localized painful and rapidly growing neoplastic mass with mobility, early loss of teeth, delayed healing of extraction sites or paresthesia which may infiltrate the adjacent bone.[7] In our case, it was manifested as painful swelling involving buccal and palatal mucosa with mobility of teeth mimicking dental abscess or infected cyst.

The sudden onset of swelling with rapid growth and sudden mobility of teeth without odontogenic etiology in a known HIV patient gave us clue to the diagnosis of malignant lesion. Though clinically it may look and palpate like dental abscess, we should suspect malignancy also. As it was known case of HIV, apart from non-Hodgkin's lymphoma other malignancies such as Kaposi sarcoma, sarcomatous malignancy or sinus origin malignancies can be suggested.

NHLs of paranasal sinuses have a tendency to invade adjacent structures, such as the orbit, pterygomaxillary fossae or oral cavity. Sinus lesions shows presence of nasal obstruction, pain, history of epistaxis, malodorous, bloody nasal discharge, cheek swelling, diplopia, proptosis, facial malformations, rhinosinusitis, skin paresthesia and loss of maxillary teeth.[8,9,10] In reported case, patient had ill-defined unilateral cheek swelling along with mild proptosis, nasal obstruction, skin paresthesia, mobility of maxillary teeth (24, 25) with intraoral swelling.

For the confirmation the site of origin and to assess the extension of the lesion, sinus radiographic imaging like PNS, CECT were important. Radiography of NHL of paranasal sinuses shows opacification, bone destruction and invasion of adjacent structures such as the orbit, pterygomaxillary fossae or oral cavity.[9] Similar findings with involvement of nasal, oral, eye and ethmoidal sinus were noted in our case. Thus confirmed the diagnosis of malignancy originated from maxillary sinus in reported case as oral malignancy will not be this much extensive.

The neoplastic cells are large with abundant cytoplasm and central oval vesicular nuclei with prominent nucleoli as noted in large immunoblasts.[5,7] Similarly, malignant round cells with eosinophilic cytoplasm, vesicular nucleus, prominent nucleoli which showed plasmocytoid appearance with mitosis seen in reported case.

The immunophenotype is similar to that in plasma cell neoplasms, positive for CD79a, IRF-4/MUM-1, BLIMP-1, CD38 and CD138. Oral PBL is characterised by minimal or no expression of leucocyte common antigen (LCA). The neoplastic cells are negative for B-cell markers CD19, CD20 and PAX-5. CD138 being a member of the transmembrane heparan sulphate proteoglycan family plays a role in plasma cell adherence to bone marrow stromal matrix. T-cell markers are usually negative, including CD3, CD4, CD5, CD7, CD8, CD10, CD30 and CD56. Strong expression of the post-germinal centre-associated markers MUM1 and CD38 are usually present. Immunohistochemistry with the antibody MIB-1, which detects the proliferation marker Ki-67, shows that most or all neoplastic cells are positive.[5,7] Similarly in our case, IHC showed positive for plasmacell neoplasm markers of CD138, LCA, CD79a, M1B1 and strongly positive for post-germinal centre-associated marker of MUM1.

The differential diagnosis includes immunoblastic DLBCL and other lymphoid neoplasms with plasmacytic features such as ALK-positive DLBCL. Immunoblastic DLBCL is positive for CD20, CD79a and PAX-5, but rarely exhibits reactivity for CD138, which are positive for BPL.[11]

Treatment usually consists of chemotherapy with or without consolidation radiation and hematopoietic stem cell transplantation. Various chemotherapy regimens including CHOP, R-CHOP, and CODOX-M/IVAC. One of the newly emerged therapeutic options for PBL is bortezomib, which is a proteasome inhibitor and a cornerstone in myeloma therapy.[11] In our case patient was treated by surgical excision followed by chemotherapy.

PBL generally has a poor prognosis with most patients dying within 2 years from initial presentation.[11] In our case, patient was under follow up since 1 yr.

CONCLUSION:

This case highlights the continued role of dental practitioners in the early detection of NHL arising from maxillary sinus. The clinical features of oral lymphomas mimic other pathological entities of the oral cavity and often misdiagnosed as benign dental conditions such as dento alveolar abscess or infected dental cyst. If the lesion has sudden onset, rapid growth and sudden mobility of teeth without odontogenic etiology in a high risk patients like HIV, clinician should suspect malignancy. A careful clinical evaluation supported by radiographic and histopathological investigations will help in identifying the disease at an early stage, resulting in better prognosis.

Legends of figures:

Figure 1:

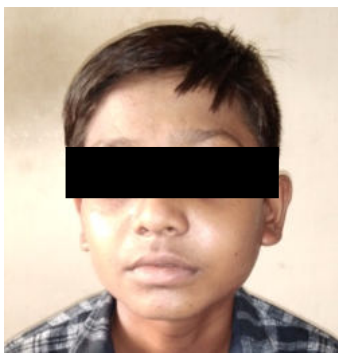
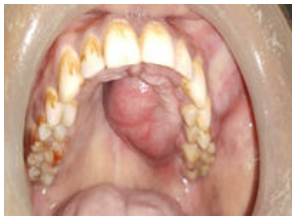


Figure 2:



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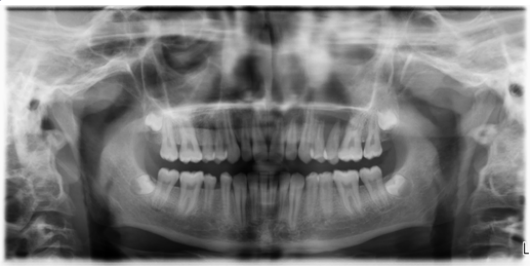
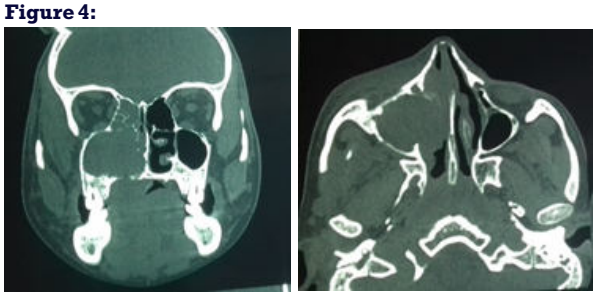


Figure 4:



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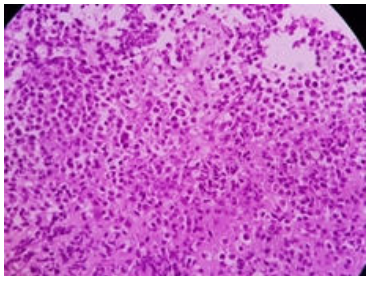
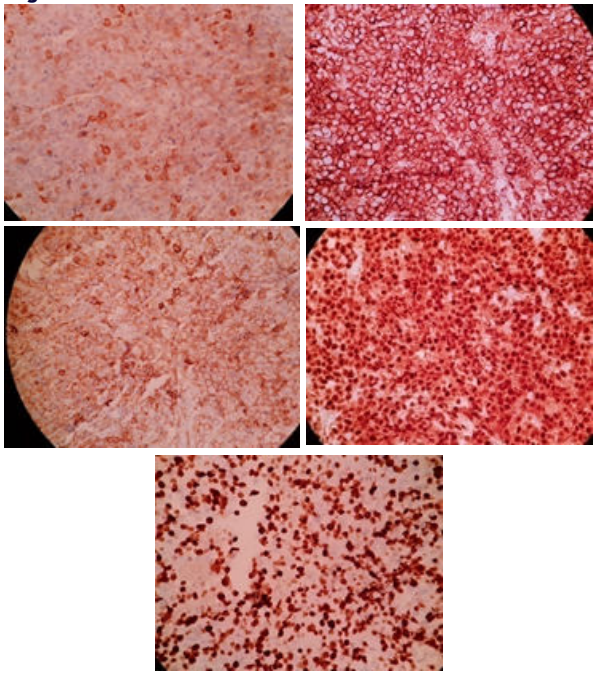


Figure 6:



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