

Oral cavity non-Hodgkin's lymphoma: Clinicopathological aspects

Shweta N Kalyankar

Department of Pathology, Padmashree Dr. D.Y. Patil Medical College, Pune, Maharashtra, India.

Correspondence to: Shweta N Kalyankar, E-mail: k.shweta3@yahoo.com

Received August 28, 2014. Accepted September 19, 2014

Abstract

Background: Although oral cavity squamous cell carcinoma is a major health problem in India, oral cavity non-Hodgkin's lymphoma (NHL) is very rare. The diagnosis of oral lymphomas may be challenging because frequently there is a low index of clinical suspicion, leading to misdiagnosis and/or delayed treatment.

Aims and Objectives: To analyze clinicopathological aspects of patients with NHL of the oral cavity diagnosed at our institute.

Materials and Methods: This was a retrospective observational study. We included consecutive patients who were diagnosed with oral cavity NHL at our institute over the past 10 years.

Results: Nine patients (six men and three women) were diagnosed with primary NHL of the oral cavity at our institute in the past 10 years. Oral tongue was the most common site followed by alveolus. All patients had presented with gradually increasing ulcerative mass in the oral cavity. None of the patients had B symptoms. Plasmablastic lymphoma was the most common type of NHL followed by diffuse large B-cell lymphoma.

Conclusion: Involvement of the oral cavity by lymphoma is rare. Plasmablastic lymphoma was the most common oral cavity NHL in our patients.

KEY WORDS: Non-Hodgkin's lymphoma, oral cavity, plasmablastic

Introduction

The oral cavity consists of the lips, floor of mouth, oral tongue (the anterior two thirds of the tongue), buccal mucosa, upper and lower gingiva, hard palate, and retromolar trigone. In India, according to the GLOBOCAN 2012 data, oral cavity squamous cell carcinoma was the most common cancer in men accounting for 53,842 cases (11.3% of all cancer cases), and it was the third most common cause of cancer-related deaths after lung and stomach cancer. In women, oral cavity cancer stood fifth in terms of incidence and cancer-related mortality following breast, cervix, colorectal, and ovarian cancer.^[1]

Oral cavity mass can be the rare presentation of a number of conditions, including infections such as bacterial osteomyelitis, invasive fungal infection, and syphilis; inflammatory diseases

particularly Wegener's granulomatosis; and neoplasms particularly non-Hodgkin's lymphoma (NHL).^[2] Diagnosing the underlying cause requires consideration of several factors as well as gram stain, fungal stain, culture, and histopathologic examination of biopsy specimen and immunohistochemistry studies.^[2]

Involvement of the oral cavity by NHL is very rare. The oral cavity constitutes only 2% of all extranodal lymphomas.^[3] There is paucity of literature regarding clinicopathological aspects of the oral cavity NHL because of the rarity of this entity. We herein present the clinicopathological aspects of nine cases of primary extranodal lymphomas of the oral cavity diagnosed at our institute.

Materials and Methods

This was a retrospective analysis of patients who presented with oral mass and on evaluation were diagnosed with primary NHL of the oral cavity at our institute. The study included patients who were diagnosed between 2002 and 2012. The case files of individual patients were analyzed for information regarding age and gender, presenting features, site of involvement in the oral cavity, immunohistochemistry report, and retroviral positivity status.

Access this article online

Website: <http://www.ijmsph.com>

DOI: 10.5455/ijmsph.2015.030120148

Quick Response Code:



Results

A total of nine patients (six men and three women) were diagnosed with primary NHL of the oral cavity in the past 10 years. The median age at presentation was 45.2 years (range 29–65 years). The sites of involvement in the oral cavity were oral tongue in five patients, alveolus in two, gingivobuccal sulcus in one, and hard palate in one. All the patients presented with gradually increasing ulcerative mass in the oral cavity. None of the patients had B symptoms. All the patients had aggressive NHL. Five patients were diagnosed with plasmablastic lymphoma. Three patients had diffuse large B-cell lymphoma (DLBCL). One patient was diagnosed to have peripheral T-cell lymphoma, not otherwise specified (PTCL, NOS) of the hard palate. On serological testing, three patients were found to be HIV positive. All of them had plasmablastic lymphoma (two of oral tongue and the other one of alveolus) (Table 1).

Discussion

The incidence of oral cancer is high in India due to high prevalence of tobacco addiction either in the form of smoked tobacco (bidi, cigarette, chillum, hookah) or in the form of smokeless tobacco (gutkha, khaini, paan masala). Almost 95% of the oral cavity tumors are squamous cell carcinomas. Primary extranodal lymphoma of the oral cavity is very rare. Oral cavity constitutes only 2% of all extranodal lymphomas.^[3] The diagnosis of oral lymphomas may be challenging because frequently there is a low index of clinical suspicion, leading to misdiagnosis and/or delayed treatment.

In Western literature the median age of patients with NHL of the oral cavity is 59 years (range 3–88 years), and men are more commonly affected than women.^[4] In one of the Indian studies, the median age of patients with primary extranodal NHL of the oral cavity was reported to be 46.2 years with M/F ratio of 3:2.^[5] In our study, the median age was found to be

44.2 years (range 29–65 years) with a male preponderance (six men and three women).

van der Waal *et al.*^[4] have mentioned palate and gingiva as the most common sites for lymphomas of the oral cavity. In the study of Shah *et al.*^[5], gingivobuccal complex was the most common site in 12 of 15 patients. In our study, oral tongue was the most common site of lymphoma of the oral cavity.

In the oral cavity, lymphoma usually presents as an extranodal, soft-elastic, asymptomatic lesion.^[6] However, all our patients were symptomatic with gradually increasing ulcerative mass in the oral cavity. Most NHLs of the head and neck do not have “B” symptoms.^[4] However, Enrique *et al.*^[7] noted B symptoms in 27% patients with NHL of the head and neck in his series of 31 cases. In this study, none of the patients had B symptoms, and all the patients had presented with gradually increasing ulcerative mass in the oral cavity.

In immunocompetent individuals, the most common lymphoma in the head and neck region is DLBCL subtype, although other subtypes of lymphoma such as mantle cell lymphoma, marginal zone B-cell lymphoma, Burkitt's lymphoma, lymphoblastic lymphoma, PTCL, and anaplastic large cell lymphoma can also occur.^[8] In this study, three of the six immunocompetent patients had DLBCL. According to Teruya-Feldstein *et al.*^[9], the most common histological subtype found in immunocompromised individuals is plasmablastic variety. In this study, three patients were found to be HIV positive; all of them had plasmablastic lymphoma (two of oral tongue and one of alveolus).

In our study, plasmablastic lymphoma was the most common lymphoma of the oral cavity. Median age at presentation of plasmablastic lymphoma was around 50 years, and plasmablastic lymphoma was most frequently present as mass in the oral cavity but other extranodal involvement was also seen such as paranasal sinus, orbit, skin, bone, soft tissues, and gastrointestinal tract.^[10] Immunophenotypic plasmablastic cells are positive for CD138, CD38, and MUM1. Leukocyte common antigen and CD20 positivity uniformly seen in DLBCL

Table 1: Patient characteristics

Age (years)	M/F	Site	IHC report	Diagnosis
26	M	RT gingivobuccal sulcus	LCA + , CD138 + , CK-, CD20- ,CD 30-, HMB-	Plasmablastic lymphoma
55	M	Oral tongue	CD20 + , LCA + ,CD30-, HMB-, CD3-	DLBCL
35	F	Alveolus	LCA + , CD138 + , CK-, CD20-, CD30-	Plasmablastic lymphoma
55	M	Oral tongue	LCA + , CD138 + , CD20-, CD30-, CD3-, CD7-	Plasmablastic lymphoma
58	M	Oral tongue	LCA + , CD138 + , CK-, CD20-, CD30-, HMB-	Plasmablastic lymphoma
65	F	Alveolus	CD20 + , LCA + , CK-, CD30-, HMB-, CD3-	DLBCL
49	F	Oral tongue	LCA + , CD138 + , CK-, CD20-, CD30-, HMB-	Plasmablastic lymphoma
29	M	Oral tongue	CD20 + , LCA + , CK-, CD30-, HMB-, CD3-	DLBCL
35	M	Hard palate	CD3 + , CD5 + , Bcl2 + , CD20-, CD10-, EMA-, ALK-	PTCL,NOS

ALK, anaplastic lymphoma kinase; ART, antiretroviral therapy; CK, cytokeratin; CR, complete remission; CT, chemotherapy; DLBCL, diffuse large B-cell lymphoma; DF, disease free; EBRT, external beam radiotherapy; ECOG, Eastern Cooperative Oncology Group; EMA, epithelial membrane antigen; HMB, human melanoma black; LCA, leukocyte common antigen; PS, performance status; PTCL, NOS, peripheral T-cell lymphoma, not otherwise specified; RT, radiotherapy.

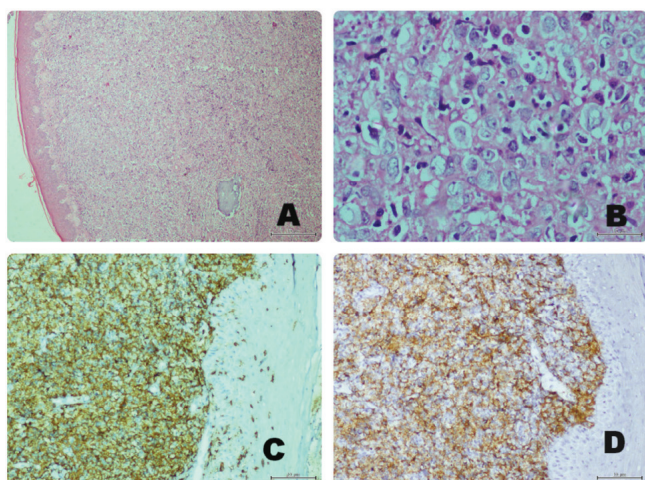


Figure 1: (A) Squamous epithelium of the oral cavity with malignant lymphoid cells in subepithelium (H&E, $\times 100$ low power). (B) Large neoplastic lymphoid cells with prominent nucleoli (H&E, $\times 450$ high power). (C) CD20 positivity (IHC-HRP polymerase, $\times 100$). (D) LCA positivity (IHC-HRP polymerase, $\times 100$).

cases is usually weak to scant in PBL. Cytoplasmic immunoglobulin, most frequently IgG and either kappa or lambda light chain expression, is seen in 50–70% of cases. Expression of epithelial membrane antigen and CD30 are frequently seen. Ki-67 index is usually very high ($> 90\%$).

In our study, five patients were diagnosed with plasmablastic lymphoma. In all of them, CD 138 was positive and

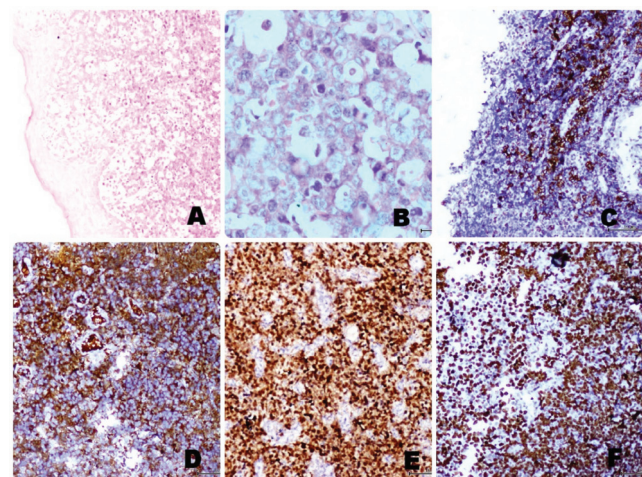


Figure 2: Plasmablastic lymphoma: (A) Squamous epithelium of the oral cavity with malignant lymphoid cells in subepithelium (H&E, $\times 100$ low power). (B) Malignant cells with tingible body macrophages (H&E, $\times 450$ high power). (C) CD138 positive cells (IHC-HRP polymerase, $\times 100$). (D) Kappa positive cells (IHC-HRP polymerase, $\times 100$). (E) MUM1 positive cells on IHC. (F) Ki-67 high proliferative index $> 90\%$, $\times 100$.

Ki-67 index was very high ($> 90\%$). (Panels 1 and 2 show microscopic and immunohistochemistry features of DLBCL and plasmablastic lymphoma.)

Conclusion

Although prevalence of carcinoma of the oral cavity is very high in our country, the incidence of primary extranodal NHL is very rare. High index suspicion is required for diagnosis of this rare disease as delayed diagnosis ultimately affects the prognosis. Plasmablastic lymphoma was the most common NHL of the oral cavity in our patients.

References

1. GLOBOCAN 2012 (IARC). *Section of Cancer Information*. Available at: <http://globocan.iarc.fr>.
2. Bhatt VR, Koirala B, Terjanian T. Extranodal natural killer/T cell lymphoma, nasal type presenting as a palatal perforation and naso-oral fistula. *BMJ Case Rep* 2011;2011:bcr1120103511.
3. Kobler P, Borcic J, Filipovic ZI, Nola M, Sertic D. Primary non-Hodgkin's lymphoma of the oral cavity. *Oral Oncol Extra* 2005;41:12–14.
4. van der Waal RI, Huijgens PC, van der Valk P, van der Waal I. Characteristics of 40 primary extranodal non-Hodgkin lymphomas of the oral cavity in perspective of the new WHO classification and the International Prognostic Index. *Int J Oral Maxillofac Surg* 2005;34:391–5.
5. Shah GH, Panwar SK, Chaturvedi PP, Kane SN. Isolated primary extranodal lymphoma of the oral cavity: A series of 15 cases and review of literature from a tertiary care cancer centre in India. *Indian J Med Paediatr Oncol* 2011;32:76–81.
6. Epstein JB, Epstein JD, Le ND, Gorsky M. Characteristics of oral and paraoral malignant lymphoma. A population based review of 361 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2001;92:519–25.
7. Enrique A, Quesada JL, Lorente J, Lopez D. [Hodgkin and non-Hodgkin lymphomas in otorhinolaryngology]. *Acta Otorrinolaringol Esp* 2004;55:387–9.
8. Hicks MJ, Flaitz CM. External root resorption of a primary molar: "Incidental" histopathologic finding of clinical significance. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2001;92:4–8.
9. Teruya-Feldstein J, Chiao E, Filippa DA, Lin O, Comenzo R, Coleman M, et al. CD20-negative large-cell lymphoma with plasmablastic features: A clinically heterogeneous spectrum in both HIV-positive and -negative patients. *Ann Oncol* 2004;15: 1673–9.
10. Spina M, Tirelli U. HIV-related non-Hodgkin's lymphoma (HIV-NHL) in the era of highly active antiretroviral therapy (HAART): Some still unanswered questions for clinical management. *Ann Oncol* 2004;15:993–5.

How to cite this article: Kalyankar SN. Oral cavity non-Hodgkin's lymphoma: Clinicopathological aspects *Int J Med Sci Public Health* 2015;4:53-55

Source of Support: Nil, **Conflict of Interest:** None declared.