

T-Cell Lymphoma of Palate with Nose and Maxillary Sinus Involvement: A Case Report

Zohreh Dalirsani¹, Nooshin Mohtasham²

Abstract

Oral cavity T-cell lymphoma occurs rarely. This case report describes a patient with such a tumor. The case was a 75 years old man presented with a painless swelling on his hard palate mucosa. He had suffered from nose-bleeding and nasal obstruction. Pathology revealed the presence of a T-cell lymphoma tumor in the palate. Though rare, the signs and symptoms of the case suggest that T-cell lymphoma should be considered in the differential diagnosis of oral cavity lesions.

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Keywords • T-cell • lymphoma • palate • nose • maxillary sinus

Introduction

Malignant lymphoma is a neoplasm originating from lymphocytes, lymphocyte precursor cells, or cells generated during the multipotential differentiation of a stem cell.¹ Approximately 80% of lymphomas originate from B lymphocytes.²

Non-Hodgkin's lymphoma (NHL) tends to invade tissues and organs that inherently do not consist of lymphoid cells.³ Non-Hodgkin's lymphoma may be located in oral soft tissues, but oral NHL usually involves B cell system, and less often T-cell.²

Palatal and nasal lymphomas are rare, and the majority of lymphomas in this region originate from B cells.⁴ Since an early detection of hard palate tumors is difficult by clinical examination, the vast majority of such tumors are detected after maxillary or sphenoid bone invasion.⁵

The present case report introduces a case of T-cell lymphoma involving the hard palate, the maxillary sinus and the nasal cavity.

This type of lymphoma is rare in oral cavity and needs to special tests for correct diagnosis.

Case Presentation

The patient was a 75-year-old male, who had referred to the Department of Oral Medicine, School of Dentistry, Mashhad University of Medical Sciences complaining of a swelling in the palate. From 20 days earlier, he had noticed that the swelling had been enlarging, and preventing maxillary denture wear. The patient did not feel any pain, but had nose-bleeding and nasal congestion for two or three times. He had been retired, and his medical history did not reveal any specific systemic condition. Also, he didn't have any history of medical surgery or he didn't take any drugs at the time of referral.

¹Department of Oral Medicine of Mashhad School of Dentistry,

²Department of Oral Pathology of Mashhad School of Dentistry Dental Research Center of Mashhad University of Medical Sciences, Mashhad, Iran.

Correspondence:

Zohreh Dalirsani DDS, MSc,
Department of Oral Medicine of Mashhad Dental, Mashhad School of Dentistry School,
Dental Research Center of Mashhad University of Medical Sciences, Mashhad, Iran.

Tel: +98 915 5002857

Fax: +98 511 8829500

Email: zdalirsani@gmail.com

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Clinical Examination

Clinical examination of the patient's oral cavity revealed a mass measuring approximately 5×4 cm on the palate. The mass was covered with normal mucosa and extended on the left side, from the soft palate to the canine tooth. The mass had also implicated the alveolar ridge and the neighboring maxillary vestibule on the left side (figure 1). On extra-oral examination a mild swelling was observed in the involved areas. The mass had a rubbery consistency in most area. The patient did not exhibit any tenderness or paresthesia. The examination of the lymph nodes of the head and neck region revealed only one movable and painless lymph node measuring approximately 1 cm in the left submandibular area. Considering the rapid the growth of the lesion and a lack of previous history, a malignant lesion was suspected.



Figure 1: Intra-oral examination shows a mass on the left palate. The mass had implicated the alveolar ridge and the neighboring maxillary vestibule on the left side.

Laboratory Findings

Laboratory tests revealed normal complete blood count (CBC), and normal serum concentrations of urea, creatinine, uric acid, sodium, potassium, bilirubin, alkaline phosphatase, alanine transaminase (ALT) and aspartate transaminase (AST).

Radiographic Examination

A panoramic radiograph revealed a decreased bone density area as a diffuse radiolucency with ill-defined borders on the left maxilla. The area was associated with the expansion of the alveolar ridge and the destruction of the lower border of the left maxillary sinus and middle septum of the left maxillary sinus as well as the destruction of the lateral septum of nasal cavity on the left side (figure 2). On panoramic and Water's views, the left maxillary sinus was opaque, and the lateral septum of

the nasal cavity on the left side was absent.

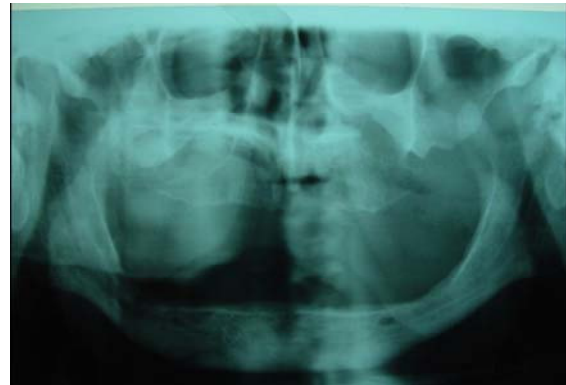


Figure 2: Panoramic radiograph of the case's oral cavity showing decreased bone density as a diffuse radiolucency with ill-defined borders on the left maxilla, with the expansion of the alveolar ridge and the destruction of the lower border of the left maxillary sinus.

Histopathologic Findings

Hematoxylin and eosin staining of the biopsy specimens from the mass demonstrated a diffuse proliferation of relatively small and atypical monoclonal lymphocytic cells (figure 3). Neoplastic cells had round and hyperchromatic nuclei with dense and coarse chromatin. The tumor cells were positive for CD3 and CD45, and negative for CD20 (figure 4).

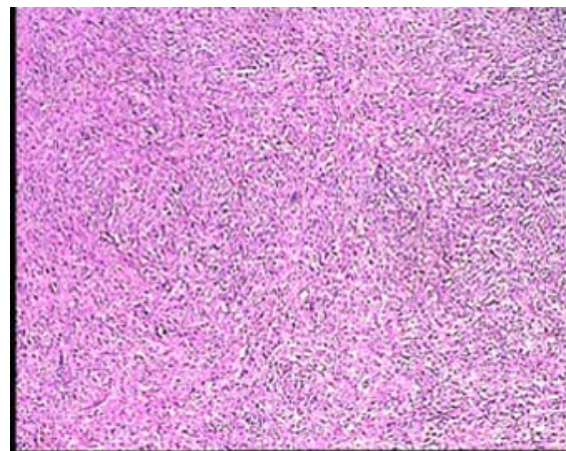


Figure 3: Hematoxylin and eosin-stained microscopic picture from the biopsy of the oral mass showing neoplastic T cells with polymorphism and atyp. Magnification: 400×.

Diagnosis

Given the histopathologic, radiographic and clinical findings, the lesion was diagnosed as T-cell lymphoma. The patient was then referred to a hematologist and an oncologist for further evaluation. Spiral CT scans of the chest, abdomen and pelvic cavity, with injected and oral contrast media and pulmonary and mediastinal windows, revealed suspected nodules in the apical segment of the upper lobe of the right lung and in the posterior basal

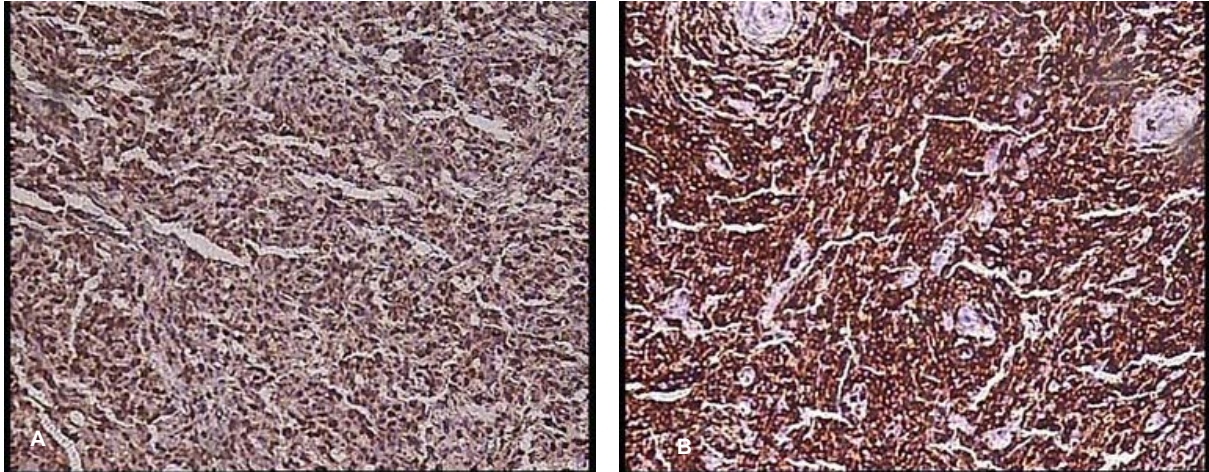


Figure 4: A microscopic pictures (100x) from the biopsy of the oral tumor Immunohistochemically stained for CD45 (A) and CD3 (B). The tumor was positive for both CDs.

segment of the lower lobe of the left lung. Moreover, CT scans of the cardiovascular system, liver, gall bladder, spleen, pancreas, adrenal glands, urinary bladder and retroperitoneal areas revealed no pathologic changes. Metastasis and lymphadenopathy were not observed as well. Thus, the tumor was diagnosed as stage one lymphoma according to WHO staging system.²

Treatment

The patient received chemotherapy in 3 phases. The medications used were cyclophosphamide, methotrexate, doxorubicin, dexamethasone and prednisolone.

After 3 chemotherapy sessions, histochemical examination of the patient's blood revealed a decrease in WBC, red blood cells, hemoglobin, hematocrite, mean corpuscular volume, mean corpuscular hematocrite, mean corpuscular hemoglobin concentration and platelet counts, which was deemed to be the side effects of immunosuppressive drugs. After 3 months, a decrease in tumor size was observed, while the patient was suffering from the complications of the treatment and respiratory infection. Unfortunately, he died after several months of treatment because of myocardial infarction.

Discussion

Malignant lymphoma can appear in all parts of the body, and may have varied radiographic manifestations.⁵ Waldeyer's ring, which consists of the nasopharynx, tonsils and the base of the tongue, is the most common location for malignant lymphoma in the head and neck region.² However, paranasal sinuses are considered rare locations for extranodal lymphomas.⁴

The present case was a T cell lymphoma invading the palatal, nasal and maxillary bones. Nasal natural killer/T- (NK/T) cell lymphomas are aggressive, locally destructive, midfacial and necrotizing lesions. Most of them were initially diagnosed as lethal midline granuloma, a term that is slowly being phased out.⁶ A 15- year study demonstrated that 74% of nasal and paranasal sinuses lymphomas were of B cell origin.⁴ The nasal cavity is the predominant site for the involvement of T-cell and NK/T-cell lymphoma, whereas sinus involvement without nasal disease is common in B-cell lymphoma.⁷ An important consideration is the origin of the tumor's T cells. It is not clear whether tumor was initiated from the maxillary sinus or palate. However, it had greatly expanded and invaded the maxillary sinus, nasal cavity and palate. The smooth surface of the mass could make the differential diagnosis of the tumor from minor salivary gland tumors or soft tissue sarcomas difficult. The rapid growth of lymphoma, compared to salivary gland tumors, is helpful in primary diagnosis; however, biopsy is necessary to confirm the diagnosis. Moreover, leukemia can cause radiolucency in the jaws, but there is usually no any jaw expansion and laboratory tests such as CBC and alkaline phosphatase that could be used in the differential diagnosis of leukemia. It is important for clinicians to diagnosis the malignant tumor such as lymphoma from benign lesions such as odontogenic cysts or tumors, which can cause jaw expansion. Rapid progression and bone destruction can indicate malignancy.

The clinical presentation of malignant lymphomas of the oral cavity varies with the origin and type of the tumor, but in most cases, it appears as a smooth mass or occasionally as an ulcerated mass similar to salivary glands

neoplasm or lymphoma.² The presence of a specific subtype of T-cell lymphoma in the oral cavity appearing as gingival swelling in both maxilla and mandible was reported in a 76-years-old woman.⁸

Histopathologic evaluation of the patient's lesion led to the diagnosis of non-Hodgkin's lymphoma with small cells. The tumor cells were positive for CD45⁺ and CD3⁺, which indicate that it was most likely of T-cell origin. It has been reported that only 21% of NHLs are of T cell or NH/T cell origins, and are positive for CD56⁺, CD43⁺, CD45⁺ and CD3⁺.⁹

Another important consideration in NHLs is the common signs and symptoms such as fever, weight loss, weakness, nocturnal sweating, increased susceptibility to infection, peripheral lymphadenopathy and splenomegaly.² One study has reported that systemic B symptoms such as fever, weight loss, weakness, nocturnal sweating, were frequently observed in NK/T-cell lymphoma.⁷ The patients in the present study did not show the above-mentioned signs and symptoms, but complained of nasal obstruction and nose bleeding which indicated the involvement of the nasal cavity. Sinonasal lymphoma may present with nasal obstruction and bleeding, the invasion of oropharynx, palate and nasopharynx.¹⁰ Furthermore, NHLs usually afflicts individuals over 40 years of age. Some studies have reported the highest prevalence for NHLs of Waldeyer's ring in the fifth and sixth decades of life.^{11,12} After diagnosing a lymphoma through physical examination, chemical examination of blood, CT scans of chest and abdomen and biopsy of bone marrow are required to determine the invasion of lymphoma.¹³ Generally, the long-term survival rate of lymphoma is weak, and patients with a non-Hodgkin's lymphoma tumor of ≥ 5 cm in diameter in the head and neck appear to have a worse prognosis than those with smaller tumors.^{12,13} The treatment of choice for localized non-Hodgkin's lymphoma is surgery and radiotherapy. In advanced cases, radiotherapy is applied following chemotherapy. In the case of diffuse neoplasm, chemotherapy is the treatment of choice.¹ Similar to other lymphomas in the head and neck region, oral lymphoma seems to respond to chemotherapy and radiotherapy.

The sign and symptoms of the present case indicate that non-Hodgkin's lymphoma should be considered in the differential diagnosis of lesions observed in the sinonasal and oral cavity. Most of oral lymphomas are of B-cell origin, however, T-cell lymphomas should be considered as well. Moreover, clinical evaluation, histopathology and proper immunohistopa-

thologic examination of the biopsy from the mass are essential for the correct diagnosis and successful treatment.

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Conflict of Interest: None declared

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