

# Oral manifestations of lymphoma: a systemic review

Literature review by Lillian Han

## Introduction

Lymphoma presents with two forms: Hodgkin's lymphoma (HL) and non-Hodgkin's lymphoma (NHL).

- Hodgkin's lymphoma
  - o Mainly occur in the lymph nodes (>90%).
  - o Histopathological exam shows the presence of Reed-Sternberg cells (owl eyes).
  - o Bimodal age distribution: early peak in young people (age 20-24) and another peak in elderly patients (age 80-84).
- Non-Hodgkin's lymphoma
  - o Diagnosed in extranodal sites in 40% of cases. GI tract is the most common site (50% of patients), followed by head and neck which varies from 11-33%.
  - o Clinical evolution is slow and predictable.
  - o Can occur at any age, but most often in patients between 30-50 years of age.
  - o Patients with AIDS have a higher risk of developing NHL (100-200 times the risk of the general population). AIDS related lymphomas have a rapid progression and have a poorer prognosis.
- The most recent and widely used classification: Revised European-American Lymphoma (REAL) classification.
- The most widely used lymphoma tagging classification system: Ann Arbor classification which is based on the number of regions of the involved lymph nodes.
- Treatment of lymphoma in the head and neck region is complex. Examples include:
  1. Radiotherapy: limited role in the primary treatment of NHL and only successful when gingival lesions are present.
  2. Chemotherapy with or without radiation: most often used modality, recommended in disseminated disease stages III or IV.
  3. Growth factors that limit myelosuppression.
  4. Bone marrow transplant and monoclonal antibodies which act against the surface antigens of affected cells.
- Lymphomas occurring in the oral cavity are often difficult to diagnose because they present clinical features that mimic other diseases such as periodontal disease, osteomyelitis and other malignancies.

## Materials and Methods

- The review included articles published until December 31, 2015 in the following databases: Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS),

Medline (via PubMed), Embase, and the Cochrane library (Cochrane reviews and Cochrane trials).

- The review included 76 patients described in case reports and 906 patients presented in retrospective studies over the span of 45 years.

## Results

- Prevalence: Diffuse large B-cell NHL (DLBCL) > small cell NHL > Burkitt's lymphoma
- Main clinical manifestations:
  - o Intraoral findings: ulcerations, pain, swelling, tooth mobility
  - o Extraoral findings: facial asymmetry, cervical/submandibular/submental lymphadenopathy
- Common Location: tonsils, salivary glands, maxilla.
- Imaging findings: radiolucent lesion with diffuse boundaries, loss of lamina dura, thickening of periodontal ligament, bone resorption and tooth displacements.
- More frequent in males than females.
- 40% of the clinical cases were initially misdiagnosed and were treated by extraction, periodontal treatment, and antibiotics, delaying proper treatment.

## Discussion

- Owing to the challenging nature of studying and treating these patients, the articles revealed a shortage of studies addressing the oral manifestations of lymphoma with limited details about clinical manifestations and radiographic findings.
- Imaging is important for diagnostic and prognostic purposes, but no imaging result was available for 815 cases of lymphoma in the head and neck region.
- Among the 163 cases with radiologic findings, most showed radiolucent areas with diffuse edges, thickening of periodontal ligament space, and loss of lamina dura. Bony changes in lymphoma patients may be cause of the release of osteoclast-activating factors from the lymphoid cells.
- More than 90% of the AIDS related NHL are B cell origin. DLBCL is the most frequent histological subtype (70-80%), followed by Burkitt's lymphoma (7-20%). The Epstein-Barr virus (EBV) is found on 60-80% of the DLBCL and 50% of Burkitt's lymphoma (BL).
- Plasmablastic lymphoma (PBL) is an aggressive and rare subtype of DLBCL, commonly found in patients with HIV. The EBV is strongly associated with PBL. The HHV-8 is also another oncogenic virus associated with PBL.
- BL occurs more often in children, more common in males, and the most affected area is the mandible followed by the maxilla. There are 3 clinical subtypes: the endemic type (African), the sporadic type (abdominal mass), and the immunodeficiency type. The main

intraoral and extraoral exam findings include swelling, pain, dental displacements, and facial asymmetry.

- Intraoral lymphomas may appear as an infection in 50% of the cases. It may also present similarly to squamous cell carcinoma. The diagnosis can only be established through biopsy.
- The differential diagnosis of dental infections and benign or malignant lesions is essential for proper treatment.

#### Conclusion

- Lymphomas occurring in the oral cavity are often misdiagnosed, delaying proper treatments.
- A good medical and dental history, detailed clinical examination, radiographic evaluations, and any necessary biopsies are crucial in arriving at the correct diagnosis and guiding the patient to the appropriate treatment.

#### Reference:

Bernardes Silva *et al* (2016) **Oral manifestations of lymphoma: a systemic review**. *Ecancer* **10:665**