Oral Lymphoma- A Short Review

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Abstract

The malignant neoplasm of the lymphocyte cell lines are lymphomas. They are mainly classified as Hodgkin's or non-Hodgkin's lymphoma (NHL).The etiology is still unknown. Various treatment modalities causes acute and longer-term side-effects affecting the clinical decision-making for dental treatment. Therefore, people with lymphoma should have regular follow-up.

Key words: *Hodgkins and NonHodgkins Lymphoma, prophylactic antibiotic.*

Introduction

Lymphoma is a solid neoplasm arising from an lymphoid tissues and spreads to distant lymphoid glands and organs[(1)].It occurs when the abnormal lymphocytes increasesin number.Lymphoma is a heterogenous malignant disease of the lymphatic system which is characterised by proliferation of lymphoid cells or their precursors[(2)].Oral cavity lymphomas represent the third most common malignancy in the oral cavity, surpassed by squamous cell carcinoma and malignancies of the salivary glands. Lymphomas in the oral cavity are rare; only 3% of all lymphomas in the general population and 4% on patients with AIDS[(3)].The manifestations of oral lymphomas are often difficult to diagnose because they mimic the clinical features of other diseases such as periodontal disease, osteomyelitis, and other malignancies[(4)]. The treatment modalities includes monoclonal antibodies, chemotherapy, radiotherapy, corticosteroids and haematopoietic stem cell transplant (HSCT).

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ETIOLOGY

In most of the cases, the cause of lymphoma is unknown. However, people with medical condition affecting their immune system have a predisposition to develop lymphoma. Patient under highly active antiretroviral therapy are at highest risk of NonHodgkin's lymphoma (NHL) due to insufficient immunological response[(5)]. Organ transplantation and its associated immunodepression is also a risk factor for lymphoma[(6)]. Patients with Sjögren'ssyndrome are at increased risk of developing NHL in which mucosa associated lymphoid tissue lymphoma is mainly involved[(7)].

CLASSIFICATION

Lymphomas presents various degrees of aggressiveness and can be divided into two large groups: Hodgkin's lymphoma (HL) and non-Hodgkin's Lymphoma (NHL). Hodgkin's lymphoma occurs mainly in the lymph nodes (>90%)and only 4% of the cases involves extranodal areas[(8)]. The histopathological examination of Hodgkins lymphoma shows the presence of Reed-Sternberg cells which are binucleate cells with a generally abundant cytoplasm and two large nucleoli (one in each core) that appear like'owl eyes'[(9)]. Hodgkin's lymphoma can be further classified into classic HL or lymphocyte-predominant HL with incidences of 95% and 5% respectively. The classic type has a bimodal age distribution with an early peak in young people (ages 20–24) and another peak in elderly patients aged 80–84.

The lymphocyte predomiant type occurs at any age but mostly occurs between 30 and 50 years of age.

Non-Hodgkin's lymphoma is classified by the types of lymphocyte, either B-lymphocyte (major type) or T-lymphocyte. The behaviour of a NonHodgkins lymphoma either high grade or low grade determines the treatment.NHL represents 40% of all lymphomas in the extranodalsites[10].

Classification

I. Classical Hodgkin's lymphoma (main type of Hodgkin's lymphoma)

• Nodular sclerosis Hodgkin's lymphoma (most common type)

• Mixed cellularity Hodgkin's lymphoma

• Lymphocyte-rich classical Hodgkin's lymphoma

• Lymphocyte-depleted classical Hodgkin's lymphoma

II. Nodular lymphocyte-predominant

Hodgkin's lymphoma (NLPHL)

• This much rarer type of Hodgkin's lymphoma involves large, abnormal cells that are sometimes called popcorn cells because of their appearance

• Early diagnosis raises the chance of better cure

ORAL MANIFESTATIONS

Patients complaints of localized or diffuse soft tissue swelling, pain, mucosal ulceration or discoloration, paresthesias, anesthesia, and loosening of teeth.The most common clinical manifestation of NHL arenonhealing, painless ulceration[11].NHL can affect both bony and soft oral tissue, palate and the mandible are most commonly affected.It is rare to find extranodalNHLs in the gingiva[12]. ClinicallyBurkitt's lymphoma (BL) occurs more often in children and is relatively rare in middle-aged or elderly adults. BL is more common in males, and the most affected areas were mandible followed by the maxilla. The swelling, pain, dental displacements, and facial asymmetry are the main findings.In the oral cavity, this tumour can progress rapidly and present itself as an exophytic mass or a facial swelling involving the jaws[13]. The tumour begins in the posterior maxilla and then spreads to the four quadrants which leads to increased tooth mobility, intraoral masses, lip numbness, and tooth pain because of infiltration in the pulp[14].Intraoral lymphomas may appear as first sign of infection in 50% of the cases. The oral manifestation includes asymptomatic soft swelling with or without ulceration affecting the tonsils, palate, buccalmucosa, gums, tongue, floor of the mouth, salivary glands, and retromolar region[15]. Alveolar bone loss with oedema and pain may also occur which often mimics periodontal diseases.

TREATMENT

The treatment depends on the type and stage of the lymphoma. The main aim is to achieve complete remission from the lymphoma[16].

The main treatment modalities for patients with lymphoma are:

1. Monoclonal antibodies (MABs);

2. Chemotherapy;

3. Radiotherapy;

4. Corticosteroid;

5. Haematopoietic stem cell transplant

(HSCT).

Monoclonal antibodies-The treatment of lymphoma with antibody therapy targets an antigen on the lymphoma cells[17]. It works by binding to antigen CD20.Rituximab, ofatumumab, and obinutuzumab are antiCD20 agents.Rituximab is commonly used for the treatment of B-celllymphoma[17]. It can also be used in maintenance therapy during the remission phase of lymphoma where it is typically given every two to three months for a period of two-years[18]. Currently, there are many monoclonal antibodies in clinical trials to target thelymphoma cells and reduce adverse effects to normal cells[19].

Chemotherapy- Lymphomas are relatively sensitive to chemotherapy. The type of chemotherapeutic regimen depends on several factors such as type and location of the lymphoma,age and fitness of the patient. The most

common chemotherapy regimens used are ABVD Adriamycin, bleomycin, vinblastine and dacarbazine, BEACOPP (bleomycin, etoposide, doxorubicin (Adriamycin©), cyclophosphamide, vincristine (Oncovin®), procarbazine and prednisolone.

Corticosteroids-Synthetic corticosteroids, such as prednisolone, methylprednisolone, and dexamethasone, are used alone or as part of a lymphoma treatment regimen[20]. They help by increasing the overall effectiveness of chemotherapy and therefore reducing the number of cycles needed and the negative side-effects. There are many reported side-effects to long-term use of corticosteroids.

Radiation is used significantly in the treatment of patients with lymphoma,particularly in early and advanced stages of HL, NLPHL, high grade NHL and occasionally with low-grade types of NHL. These types of lymphoma are very sensitive to radiation.

Haematopoietic stem cell transplant (HSCT) is considered as a part of lymphoma treatment for fit younger patients <65 years and also for people with relapsed or a refractory form of lymphoma[19]. There are two types of stem cells transplant: autologous and allogeneic.Stem cells are collected from the affected patient, and is given back to the same patient after high-dose chemotherapy. In allogeneic stem cell transplants, patients receive donor stem cells after high-dose of chemotherapy[21].

Conclusion

A holistic approach is required to manage people with lymphoma. Following treatment, good care should be taken by the patient. Oral manifestation starts regressing after the seventh day of treatment from chemotherapy. A good medical history, detailed clinical and imaging evaluations, and attention to the patient's signs and symptoms are crucial for the correct diagnosis and appropriate treatment, which in turn can lead to better patient prognosis.

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References

1. Scully C, Diz Dios P, Kumar N. Special Care in Dentistry. London: Elsevier, 2007.
2. Mawardi H, Cutler C and Treister N (2009) Medical management update: Non-Hodgkin Lymphoma Oral Surg Oral Med Oral PatholOral Radiol Oral J Endod 107(1) 19–33 DOI: 10.1016/j.tripleo.2008.08.054.
3. Levine AM (2000) AIDS-related lymphoma:clinicalaspactsSeminOncol 27(4) 442–53 PMID: 10950371.
4. Richards A et al (2000) Oral mucosal non-hodgkin's lymphoma ± a dangerous mimic Oral Oncology 36(6) 556–8 DOI: 10.1016/ S1368-8375(00)00047-6 PMID: 11036251.
5. Cesarman E. Pathology of lymphoma in HIV. CurrOpinOncol 2013; 25: 487−494.
6. Knight JS, Tsodikov A, Cibrik DM, Ross CW, Kaminski MS, Blayney DW. Lymphoma after solid organ transplantation: risk, response to therapy, and survival at a transplantation center. J ClinOncol 2009; 27: 3354−3362.
7. Chiu Y-H, Chung C-H, Lin K-T, Lin C-S, Chen J-H, Chen H-C et al. Predictable biomarkers of developing lymphoma in patients with Sjögrensyndrome: a nationwide population-based cohort study. Oncotarget 2017; 8: 50098−50108.
8. Inchingolo F et al (2011) Non-hodgkin lymphoma affecting the tongue: unusual intra-oral locatio Head Neck Oncol 3(1) 1–5 DOI: 10.1186/1758-3284-3-1.
9. Ishimaru T et al (2005) Hodgkin's lymphoma of the mandibular condyle: report of a Case J Oral MaxillofacSurg 63(1) 144–7 DOI: 10.1016/j.joms.2004.06.050 PMID: 15635570.
10. Kemp S et al (2008) Oral non-Hodgkin's lymphoma: review of the literature and World Health Organization classification with reference to 40 cases Oral surg Oral med Oral Pathol Oral RadiolEndod 105(2) 194–201 DOI: 10.1016/j.tripleo.2007.02.019.
11. Richards A, Costelloe MA, Eveson JW, Scully C, Irvine GH,Rooney N. Oral mucosal non-Hodgkin's lymphoma: a dangerous mimic. Oral Oncol 2000;36:556–8.
12. Castellano S, Carbone M, Carrozzo M, Broccoletti R, Pagano MAC, Vasino MAC, Gandolfo S. Onset

of oral extranodallarge B-cell non-Hodgkin's lymphoma in a patient with polycythemiavera: a rare presentation. Oral Oncol 2002; 38:624–6.

13. Chihuam GG et al (2014) Plasmablastic lymphoma: a case of rectal disease with bonémarrown involvement in a HIV positive patient VerGastroenreol Peru 34(4) 347–50.
14. Takahashi H et al (1992) Primary malignant lymphoma of the salivary glands: a tumor of mucosa-associated lymphoid tissue J Oral Pathol Med 21(7) 318–25 DOI: 10.1111/j.1600-0714.1992.tb01019.x PMID: 1522534.
15. 102.Ardekian L et al (1999) Burkitt's Lymphoma oh the oral cavity in Israel J Cranio-MaxillofacSurg 27(5) 294–7 DOI: 10.1054/ jcms.1999.0074.
16. Marcus R, Sweetenham JW, Williams ME, eds. Lymphoma: Pathology, Diagnosis, and Treatment. Cambridge: Cambridge University Press, 2013.
17. Cartron G, Solal-Céligny P. Monoclonal Antibodies for Lymphoma. Springer, 2013: p345−361.
18. van Oers MH, Klasa R, Marcus RE, Wolf M, KimbyE, GascoyneRD et al. Rituximab maintenance improves clinical outcome of relapsed/resistant follicular non-Hodgkin lymphoma in patients both with and without rituximab during induction: results of a prospective randomized phase 3 intergroup trial. Blood 2006; 108: 3295−3301.
19. Lymphoma Association. Supporting people affecting by lymphatic cancer 2016 (25/09/2017). Available from: https://www.lymphomas.org.uk
20. Ezdinli EZ, Stutzman L, Aungst CW, Firat D. Corticosteroid therapy for lymphomas and chronic lymphocytic leukemia. Cancer 1969; 23: 900−909.
21. Hatzimichael E, Tuthill M. Hematopoietic stem cell transplantation. Stem Cells Cloning 2010; 3: 105−117.