

# Leukemia: The Oral Perspective

Geetanshu Dawar

Senior Lecturer, Dept of Oral and Maxillofacial Pathology, Teerthanker Mahaveer Dental College & Research Centre, Moradabad.

Correspondence to:

Dr. Geetanshu Dawar, Dept of Oral and Maxillofacial Pathology, Teerthanker Mahaveer Dental College & Research Centre, Moradabad.  
Contact Us: www.ijohmr.com

## ABSTRACT

Leukemias are malignant neoplasms the oral symptoms of which may sometimes precede the systemic manifestations. The knowledge of such systemic diseases is of utmost importance to dental surgeons as they may help in early and prompt diagnosis as these diseases may sometimes go undiagnosed. Such patients may develop oral lesions over the course of time and have to be treated with utmost care and efficacy.

**KEYWORDS:** Leukemia, Oral Manifestations, Oral Ulceration

## INTRODUCTION

The mouth is considered to be a mirror of the body and sometimes undetected systemic diseases are diagnosed via the oral signs and symptoms as they herald prior to the systemic manifestations.<sup>1,2</sup> One such disorder being leukemia, a malignant neoplasm characterized by proliferation of abnormal white blood cells and their precursors which leads to immature cells in the circulating blood stream.<sup>3,4,5</sup> Leukemias are broadly classified into acute and chronic based on clinical behavior, depending on the cell line involved they can be divided into lymphoid (involving the lymphocytic series: lymphoblastic and lymphocytic) and myeloid (progenitor cells of the myeloid series).<sup>4,5</sup> Acute leukemia involves poorly differentiated blast cells while chronic leukemia involves the matured leukocytes cells.<sup>3</sup>

## ETIOLOGY

Leukemias have a diverse etiology ranging from viruses, chromosomal abnormalities to chronic exposure to benzol and aniline dyes and related chemicals. Chiefly the Epstein-Barr (EB) virus and Human T-cell leukemia virus-1 (HTLV-1) are closely associated. The most commonly reported chromosomal abnormality is the Philadelphia chromosome seen mostly in patients with chronic myeloid leukemia.<sup>4</sup>

## CLINICAL FEATURES

Acute leukemias are common in children and young adults while chronic leukemias are mostly seen in the older age group. Symptoms include fever, weight loss, weakness, pain in joints and muscles, generalized swelling of lymph nodes, petechial or ecchymotic hemorrhages in the skin and mucous membranes and local infections.<sup>1,3,4</sup>

**Oral manifestations :** Oral lesions can be appreciated in both acute and chronic leukemia but they are more common in patients with the acute form of the disease. According to Burket, they are most common in monocytic leukemia. He reported oral lesions in 87% of

patients with monocytic leukemia, in 40% of patients with myeloid leukemia, and in 23% of those with lymphoid leukemia.<sup>4,5</sup> Overall 65% of patients exhibit oral manifestations.<sup>2</sup>

**Petechie, ecchymosis and Gingival bleeding:** They are attributed to the thrombocytopenia due to suppression of normal hematopoietic bone marrow.<sup>6,7,8</sup> Gingival bleeding is more common in acute leukemia<sup>2</sup> and occurs as a result of the ulceration of the sulcus epithelium and necrosis of underlying tissue which is caused due to thrombosis of the gingival vessels.<sup>2,4</sup>

**Gingival Enlargement:** It is due to leukemic cell infiltration.<sup>5</sup> The enlargement is usually generalized and the gingiva appear deep red, boggy, edematous and bleeds easily.<sup>9</sup> The enlargement is continuous and involves marginal and attached gingiva and interdental papilla. It may sometimes be so extensive that the entire crowns of teeth maybe covered.<sup>1</sup>

**Oral Ulceration:** Ulcerations are seen because the host loses the ability to combat normal microbial flora. Ulcers appear deep and punched out with a greyish white necrotic base.<sup>10</sup> Ulcerations are commonly involve the gingival and the palate.<sup>2,10</sup> Palatal ulcerations may further lead to mucormycosis of the nasal cavity and paranasal sinuses.<sup>2</sup>

**Periodontal Ligament and Alveolar bone:** There is loosening of teeth as a result of necrosis of periodontal ligament. Destruction of alveolar is also noted.<sup>4</sup>

**Oral Infections :** There is an increased risk for bacterial, viral and fungal infections in leukemic patients. The most commonly observed infections are oral candidiasis, mucositis and herpes simplex.<sup>5</sup>

**Neurologic Manifestations:** They include dysphagia, inability to protrude the tongue, trigeminal neuralgia, facial paralysis, parasthesia of the face, lips and tongue, difficulty in biting food, numb chin syndrome (neuropathy of mental nerve) and trismus is also noted sometimes.<sup>2</sup>

How to cite this article:

Dawar G. Leukemia: The Oral Perspective. *Int J Oral Health Med Res* 2015;2(2):113-114.

## CONCLUSION

Oral health care professionals should have a thorough knowledge of oral manifestations of systemic diseases as the dental surgeon plays a trivial role in early diagnosis and directing the patient for apt investigations and also referring them to a specialized professional.

## REFERENCES

1. Deliverska EG, Krasteva A. Oral signs of leukemia and dental management: literature data and case report. *J of IMAB* 2013;19(4):388-391
2. Adeyemo TA, Adeyemo WL, Adediran A, Akinbami A A, Akanmu AS. Orofacial manifestations of haematological: Hemato- oncologic and immune-deficiency disorders. *Indian J Den Res* 2011; 22(5): 688-697.
3. Dean AK, Ferguson JW, Marvan ES. Acute leukaemia presenting as oral ulceration to a dental emergency service. *Australian Dental Journal* 2003;48:(3):195-197.
4. Shafer W.G, Hine M.K, Levy B.M. Shafer's Textbook of Oral Pathology. 7<sup>th</sup> edition. Elsevier Publication; 2012.
5. Greenberg M.S, Glick M. *Burket's Oral Medicine: Diagnosis & Treatment*. 10<sup>th</sup> edition. McGraw Hill Education; 2003.
6. Brenneise CV, Mattson JS, Commers JR. Acute myelomonocytic leukemia with oral manifestations: Report of a case. *J Am Dent Assoc* 1988;117:835-7.
7. Present CA, Safdar SH, Cherrick H. Gingival leukemic infiltration in chronic lymphocytic leukemia. *Oral Surg* 1973;36:672-4.
8. Pochendly C. Neurologic manifestations in acute leukemia. *NY State J Med* 1975;75:575-80.
9. Regezi JA, Scubba JJ, Jordan Richard CK. *Oral Pathology: Clinical Pathologic Correlations*. 4<sup>th</sup> edition. Elsevier Publication; 2003.
10. Neville BW, Damm DD, Allen CM, Bouquot JE. *Oral and Maxillofacial Pathology*. 3<sup>rd</sup> edition. Elsevier Publication; 2009.

Source of Support: Nil  
Conflict of Interest: Nil