



## CASE STUDY

### NON HODGKINS LYMPHOMA OCCURRING AS PRIMARY BONE LESION

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#### ABSTRACT

Non-Hodgkin lymphoma is cancer that begins in cells of the immune system. The immune system fights infections and other diseases. Non -Hodgkin lymphoma begins when a lymphocyte (usually a B cell) becomes abnormal. Hodgkin's disease is much less common than non-Hodgkin's lymphoma and accounts for only about 1%. A non hodgkins lymphoma occurring as a primary bone lesion is a rare entity in mandible. A case report of one such case with differential diagnosis and management in 65 year old male patient is reported.

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## INTRODUCTION

Non -Hodgkin lymphoma begins when a lymphocyte (usually a B cell) becomes abnormal. Hodgkin's disease is much less common than non-Hodgkin's lymphoma and accounts for only about 1%. The new cells divide again and again, making more and more abnormal cells. The buildup of extra cells often forms a mass of tissue called a growth or tumor in general, the risk factors for non-Hodgkin lymphoma include the following: Weakened immune system, Certain infections, Human T-cell leukemia/lymphoma, Infection with HTLV-1 increases a person's risk of lymphoma and hepatitis C infection. Symptoms like Swollen, painless lymph nodes in the neck, armpits, or groin. One such case of non hodgkins disease with primary intra osseous manifestations is reported.

### Clinical presentation

A 65 year old Caucasian Indian male came to us with a chief complaint of painless gradually increasing swelling in the right lower back tooth region since 1 month. Patient also complained of altered sensation on his right lower lip region for 15-20 days. Patient has lost all his teeth due to extraction. Patient was a known diabetic and hypertensive since 6-7yrs and 1-2 yrs respectively. Patient gave a history of loss of weight and even recurrent fever. Clinically mild swelling was present in the right lower 3<sup>rd</sup> of the face region in the parasymphiseal

area. Paraesthesia was present on right lower lip unilaterally. Bilateral solitary submandibular lymphadenopathy was present and it was firm, mobile and nontender. Intraorally vestibular swelling resulting in its obliteration was present in the right mandibular premolar molar area measuring approximately 1.5 × 3 cm in size with a diffuse border and smooth normal appearing surface. Clinical expansion of buccal cortical plate was seen. It was soft and slightly tender (Fig 1). Considering the clinical features a working diagnosis of primary intra alveolar malignancy since it was in accordance with clinical criteria for its diagnosis. Orthopantomography revealed a illdefined radiolucency in the right premolar molar area with ragged borders and radiodense areas within it. It had a moth eaten appearance. It eroded the residual alveolar ridge and also slightly thinning of lower border of mandible was evident. Inferior alveolar nerve canal lining was not visible. There was complete destruction of buccal and lingual cortical plates (Fig 2). This was suggestive of a malignant lesion.

### Differential diagnosis

1. Chronic rarefying osteomyelitis
2. Osteoradionecrosis of jaw following radiation therapy,
3. Neuralgia induced cavitation osteonecrosis are painful phenomena associated with trigeminal neuralgia and atypical neuralgia.
4. Gaint cell hyaline angiopathy is a rare pathologic might present as a exophytic mass attached to the periosteum.
5. Primary intra osseous carcinoma commonly

6. Gingival carcinoma
7. Central mucoepidermoid carcinoma
8. Central clear cell carcinoma
9. Odontogenic ghost cell carcinoma
10. Ameloblastic carcinoma
11. Malignant ameloblastoma
12. Metastatic diseases of jaw.
13. Fibrosarcoma of bone is a rare malignant primary tumor of bone.
14. Ewings sarcoma
15. The variants of Histiocytosis X
16. Multiple myeloma
17. Non hodgkins lymphoma occurring as a primary bone lymphoma
18. Burkitts lymphoma
19. Hodgkins lymphoma
20. Leukemia

### Diagnosis

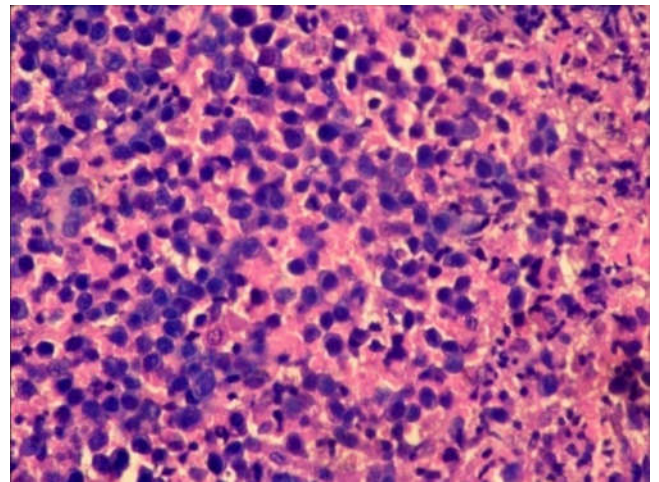
Patient was negative for HIV and HBsAg. Complete hemogram parameters were all under normal limits. FNAC was done and this suggested a tumorous lesion in the mandible. An intra oral incisional biopsy was performed, which gave a diagnosis of lymphoma. Specimen was positive for CD 45 which was suggestive of lymphoma (Fig 4). Delineation of lesion was further carried out by IHC using CD3 and CD20. Specimen was positive for CD3 (Fig 5) and negative for CD20 which was suggestive of T cell type of lymphoma. The final diagnosis was established as primary bone lymphoma of mandible of T cell type.



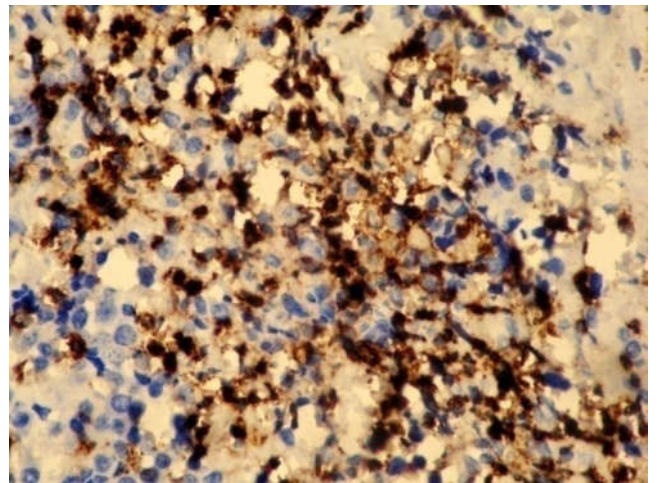
**Fig.1. Clinical manifestation- intraoral photograph showing swelling in 46,47 and 48 region**



**Fig.2. OPG reveals ill defined radiolucency involving inferior alveolar canal**



**Fig.3. Photomicrograph – Positive for CD45**



**Fig.4. Photomicrograph – Positive for CD 3**

### Management

Later patient was referred to the cancer hospital. Patient was put on CHOP therapy. He was advised 6 cycles at an interval of 3 weeks. CHOP included cyclophosphamide, doxorubicin, vincristine and prednisolone.

### DISCUSSION

Non hodgkins lymphoma occurring as primary bone lesion represents only 5% of all NHL types. (Joaquim Bosch-Barrera *et al.*, 2009) Primary bone lymphoma (PBL) more commonly arises in long bones followed by axial skeleton and only 2-4% of cases occurs in mandible which makes mandible a rare location. (Beal *et al.*, 2006) Coley *et al.* (Joaquim Bosch-Barrera *et al.*, 2009) has given the clinical criterias for diagnosing PBL and as per these criteria a PBL should be:

1. Clinically a primary focus in a single bone on admission.
2. Unequivocal histological proof for the bone lesion (not from metastasis)
3. Metastasis present on admission only if regional or if the onset of symptoms of primary tumor preceded the appearance of the metastasis by at least 6 months.

PBL more commonly occurs in maxilla than mandible. (Raghavendra Kini *et al.*, 2009) In the oral cavity NHL more

commonly occurs in the waldeyers ring. (Sankaranarayanan *et al.*, 2005) It more commonly occurs in males with male to female ration of 3:2. PBL more commonly occurs in 50-55 years of age making it a disease of elderly. (Raghavendra Kini *et al.*, 2009) Primary bone lymphoma of NHL type commonly arises from cells of B lymphocyte series. Our case was of T cell type and one of its kinds in published data occurring centrally. Mandibular PBL may be of intermediate or high grade malignancy but it remains localized. (Masanori Someya *et al.*, 2005) The main stay of therapy for NHL is radiotherapy and chemotherapy. Surgical therapy may depend on the size of the lesion. If a small lesion present on gingival then it can always be treated with complete surgical excision having known that no dissemination is present. Primary bone lymphomas are usually treated by chemotherapy. Mandibular PBL may be treated either with chemotherapy or radiotherapy, if surgery then hemi mandibulectomy or maxillectomy could be performed. However chemotherapy is the better option for central lesions. (Masanori Someya *et al.*, 2005) Prognosis of PBL of mandible is excellent except for disseminated cases where it is less favorable. (Raghavendra Kini *et al.*, 2009)

### Conclusion

Most of the cases what we see as a illdefined radiolucency could be a intra alveolar carcinoma but possible rare lesions like NHL and clear cell carcinoma should also be thought. Metastatic spread to jaw bones is another important lesion to be ruled out. Hence the general examination of the patient becomes very important. NHL when disseminated has to be treated vigorously. When localized it becomes very important that u diagnose the case as soon as possible, so that

unnecessary surgery could be avoided and also the dissemination of this lesion could be prevented. This would improve the prognosis of the case.

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