Case study

A rare case of Mandibular Non-Hodgkin's Lymphoma presenting as swelling - a clinical dilemma

Abstract

Mandible remains a site of swelling for number of diseases including infection, cyst & tumors. Although the frequency of such lesions is variable, a few lesions with rarest occurrence without any pathognomic, clinical and radiological features may cause diagnostic predicament. Although the list of various swellings of mandible mostly inflammatory, odontogenic and occasionally salivary gland lesions, but such list is not limited to those diseases alone & may be kept open to incidence of some other diseases such as diffuse large B-cell lymphoma as in our case which is a rare form of extranodal non-Hodgkin's lymphoma that account for 0.1 – 0.2% of cases in oral cavity, and occasionally appears in the mandible. We report a case of diffuse large B-cell lymphoma in a 77-year-old male patient. The patient presented with firm, mild painful swelling on the left lower face with history of non-healing extraction socket and enlarged left submandibular lymph nodes leading to a provisional diagnosis of chronic dental infection or dentoalveollar abscess. Incisional biopsy from the lesion and immunohistochemistry study confirmed the diagnosis of diffuse large B-cell lymphoma of left mandible.

Keys word: Diffuse large B-cell lymphoma, immunohistochemistry and mandible.

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Introduction

Lymphomas are a diverse group of neoplasms affecting the lympho-reticular system. It is divided into Hodgkin's disease and Non-Hodgkin's disease. Hodgkin's type commonly presented as nodal disease, often involving cervical, axillary and inguinal nodes. Whereas non-Hodgkin's disease have extra-nodal presentation and can occur in stomach, salivary glands and rarely in oral cavity and jaw [1].Primary non-Hodgkin's lymphomas (NHL) of bone are quite rare, but among jaw lesions, they more frequently arise in the maxilla than in the mandible [1].

NHL of bone formerly referred to as reticulum cell sarcoma of bone, represents 7% of primary bone tumours and 5% of all primary extranodal NHL [2,3]. The most common histologic type is diffuse large B-cell lymphoma (DLBCL) accounting for approximately 30% of all NHL [4]. Most of DLBCL arises in lymph nodes. However, 40% of these malignancies arise in extranodal sites, most commonly the gastrointestinal tract, skin, and Waldeyer's ring [5].Lymphomas arising within the oral cavity accounts for less than 5% of all oral malignancies and approximately 85% of the lesions involve the tonsils and palate [6].Here, we reported a case of primary DLBCL of the mandible, presenting as diffuse swelling on the left body of the mandible.

Case report

A 77-year old male patient presented with firm and mild painful swelling on the left lower face with duration of two months. The swelling was gradual in onset and increases to present size with facial asymmetry. The patient had past history of loosening of left side

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tooth with extraction of 36 mobile teeth and received antibiotics for one month without any significant clinical improvement.

Extraoral examination revealed a solitary swelling extending from left parasymphsis region to body of mandible measuring 2.5×2cm in size, firm to hard in consistency with smooth, normal overlying skin surface and left submandibular lymphadenopathy (figure-1a).

On intra oral examination the swelling was extended from 32 to 37 tooth regions obliterating buccal vestibule, with non-healing 36 socket region and lateral expansion of buccal cortical plate (figure-1b). Patient had history of smoking (10years), poor oral hygiene, generalized attrition, and calculus deposit. Orthopantogram showed radiolucency with irregular destruction of bone extending 32-37 tooth regions (figure-2a). Indurated non-healing extraction socket, smoking history and atypical clinical finding raised a suspicion of malignancy. Incisional biopsy from the lesion was performed which showed diffuse sheets of round to oval tumor cells with scanty cytoplasm, vesicular nuclei with prominent nucleoli revealing features of round cell tumor possibly NHL with differential diagnosis of other round cell tumors (poorly differentiated squamous cell carcinoma, small cell osteosarcoma, neuroblastoma, ewing sarcoma) (figure-3a).

Immunohistochemistry study showed positivity for LCA, CD20, negative for CK, S100, HMB 45, Vimentin and a high proliferative index (MIB1 = 60%) confirming the diagnosis of DLBCL (figure-3b, -3c).

Due to communication breach patient reported after 2months and contrast enhanced CT (CECT) scan showed complete destruction of both buccal and lingual cortical plates with enlargement of ulcerative growth (figure-2b, -2c). Serum lactate dehydrogenase (LDH), CECT scan of thorax, abdomen and pelvis, and bone marrow biopsy were found to be normal and

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diagnosed as NHL of mandibular primary with clinical stage I. The patient was treated with radical chemotherapy followed by radiotherapy. Patient had received six cycles of chemotherapy R-CHOP regimen (Rituximab, Cyclophosphamide, doxorubicin, vincristine and Prednisolone) with proper dose schedule. After that, patient had received involved field radiotherapy (IFRT) of 40 GY in 20 fractions. The patient was disease free with clinically normal healthy oral mucosa (figure-1c) after one year follow-up.

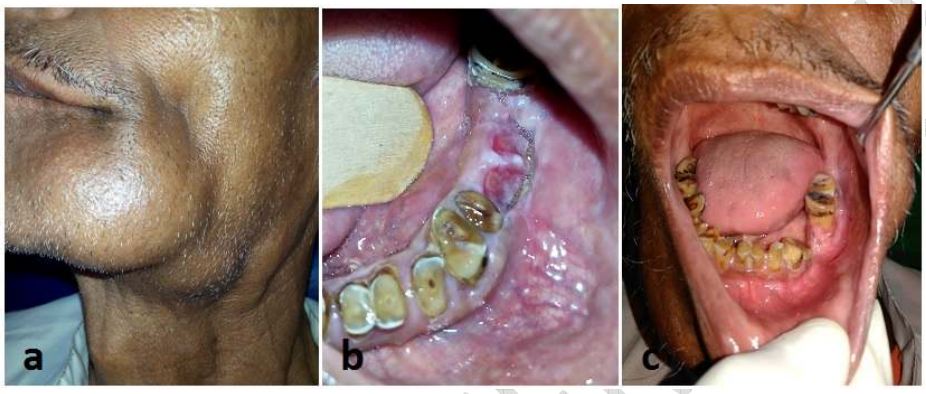

Figure-1: Showing a) Swelling over left side body of mandible, b) Non-healing socket with respect to 35-36 tooth region, and swelling of left vestibule, and c) Post-treatment normal healthy mucosa.

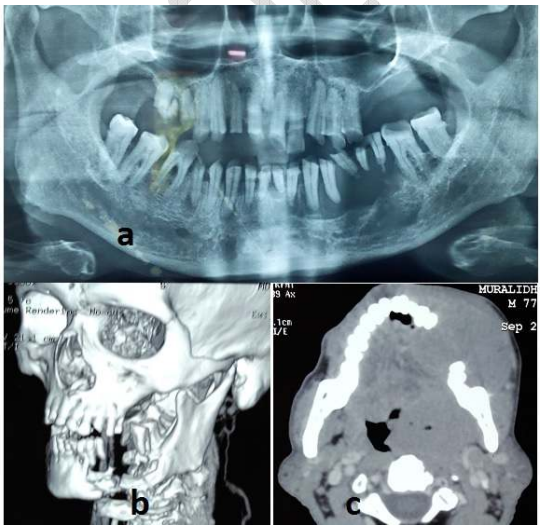

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Figure-2: a) Orthopantogram showing ill-defined radiolucency extending from 32 -37 tooth region, b) and c) CECT scan showing bicortical bone destruction with extension of the lesion.

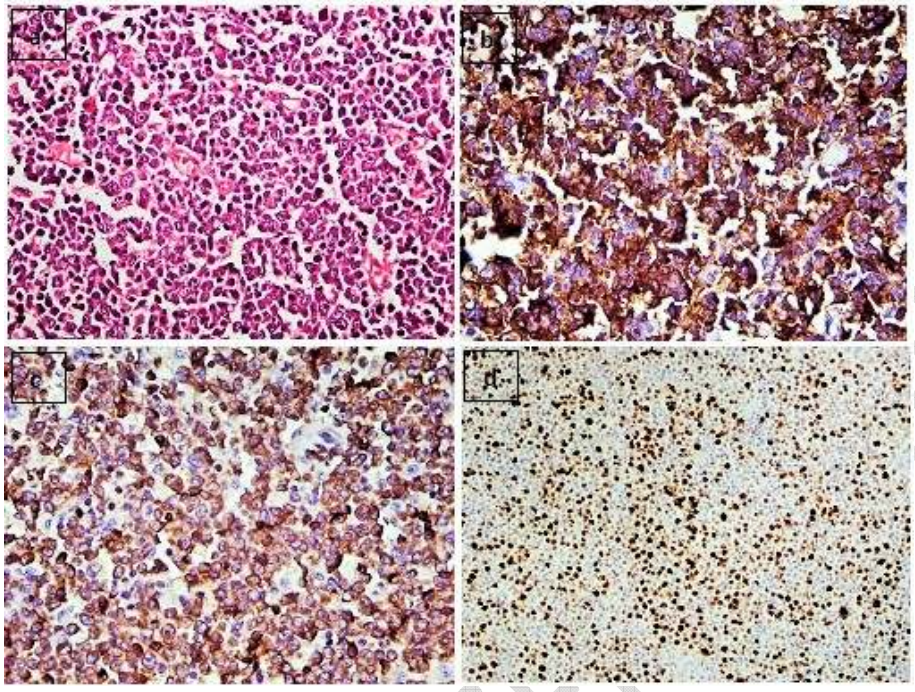

Figure-3: Showing a) histopathology (H & E stain 400X): Diffuse sheets of round to oval tumor cells with scanty cytoplasm, vesicular nuclei with prominent nucleoli Immunohistochemistry study showing b) CD20 positive, c) BCL-2 positive, d) MIB1 (60%)

Discussion

NHL is broadly classified into two broad groups: B-cell lymphoma and T-cell lymphoma. According to WHO classification (2001), DLBCL is a special entity placed under mature peripheral B-cell neoplasm group [7].

Extra nodal presentation is seen in 40% of NHL [8] and 2-3% of these found as oral cavity and jaw primary. Majority presents in the age group of 6th and 7th decades of life and commonly seen in maxilla [9]. Present case was presented at age of 77 years with a

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diagnosis of DLBCL at a rare site of location as mandible primary. To our knowledge, there are only a few cases were reported.

DLBCL is a high-grade B-cell NHL and present case is without any significant aggressiveness of the tumour. Due to little incidence and non-specific symptoms, primary NHL of the mandible or jaws is often misdiagnosed for a dental infection [10,11]. Biopsy is performed after poor response to antibiotic treatment, non-healing ulcer or extraction socket.

WHO diagnostic criteria for primary lymphoma of bone are a primary focus in a single bone with no evidence of distant soft tissue or lymph node involvement. According to Coley (1950), the criteria for diagnosis of bone primary is lymphoma presenting in an osseous site with no evidence of disease elsewhere for at least 6 months after diagnosis [10].

Parrington et al. have discussed a case of primary lymphoma of the mandible presenting after tooth extraction [12]. Leva Djavonmardi et al. have reviewed 16 cases of NHL of the jaws and found that diagnosis was usually difficult and often misleading and delayed before the first bone biopsy [13]. The present case also misdiagnosed by many dentists and physician treated as dento-alveolar abscess. Gusenbauer et al. emphasized that malignant lymphoma must be considered in the differential diagnosis of unexplained dental pain and swelling of the mandible [14]. In non-healing extraction socket with irregular bone destruction NHL is one of the differential diagnosis.

Bone swelling is the frequent clinical presentation in jaw lymphoma, often associated with teeth mobility, pain and neurological disturbance as in the present case. Histopathology usually shows sheets of chronic inflammatory cells, especially lymphocytes, mimicking an inflammatory reaction. Careful examination by a skillful pathologist is necessary. In DLBCL

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careful microscopic examination showed presence of particular types of large cancerous lymphocytes spread diffusely throughout the biopsy specimen, cells are spread about rather than in clusters and should be confirmed by immunohistochemistry study.

Localized low-grade lymphomas are treated with radiotherapy, while aggressive chemotherapy is used for diffuse high-grade ones. A combination of chemotherapy and radiotherapy is used to treat patients with localized high-grade lymphomas. The surgical approach is limited to obtain a specimen sufficient for a complete histological examination [15]. As DLBCL is an aggressive, rapidly growing neoplasm, a combination of chemotherapy and radiotherapy would be the most appropriate choice and this chemo-radiotherapy was adopted in our case with disease free for one year follow-up. The prognosis is excellent in localized disease, whereas in disseminated disease, it is less favorable [9].

Conclusion

Lymphoma of the mandible being a rare disease and may be considered in the differential diagnosis of long-standing, unhealed extraction wound. Early diagnosis and treatment for such disease result in improved survival outcome. With the rising incidence of extra-nodal lymphomas, clinician may not take laxity on any oro-facial swellings at their face values; on the contrary the histopathology consideration may be given priority to plan an appropriate treatment to yield improving results.

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