

Management of Non-Hodgkin's Lymphoma in Maxillofacial Region with Chemotherapy

Ayesha Moin, Akshay D. Shetty

Department of Oral and Maxillofacial Surgery, Sri Rajiv Gandhi College of Dental Sciences, Bengaluru, Karnataka, India

Abstract

Malignant lymphomas form a heterogeneous group of neoplasms of the lymphoid tissue with different clinical courses, depending on the treatment and prognosis. Lymphoma is a malignant neoplasm of the lymphoid tissue; it is broadly classified into Hodgkin lymphoma (HL) and Non-HL (NHL) depending on the presence or absence of the Reed–Sternberg cells. The main types of lymphomas are (1) HL and (2) NHL. This case report describes about primary NHL involving the mandible. Chemotherapy was advised by the oncologist, and a total of 14 cycles were suggested at the gap of every 2 weeks. The treatment regimen followed was classical Cyclophosphamide hydrodaunorubicin oncovin Prednisolone (CHOP) therapy. NHL can be managed by chemotherapy, radiotherapy, and surgery in various combinations. NHL arising in bone is best treated by chemotherapy and may not require radiotherapy. Survival and prognosis are excellent in localized disease, whereas disseminated disease seems less favorable.

Keywords: Chemotherapy, CHOP therapy, non-Hodgkin's lymphoma, radiotherapy, Reed–Sternberg cells

INTRODUCTION

Malignant lymphomas form a heterogeneous group of neoplasms of the lymphoid tissue with different clinical courses, depending on the treatment and prognosis.^[1]

Lymphoma is malignant neoplasm of the lymphocyte cell lineage; it is broadly classified into Hodgkin lymphoma (HL) and non-HL (NHL) depending on the presence or absence of the Reed–Sternberg cells. NHL is further subclassified into B- or T-cell types. NHL comprises a heterogeneous group of lymphoid neoplasm with a spectrum of behavior ranging from relatively indolent to highly aggressive and potentially fatal.^[2]

Primary lymphomas of the oral cavity are uncommon.^[3] The oral cavity, including the palate, gingiva, tongue, buccal mucosa, floor of the mouth, and lips, is the primary site of approximately 2% of all extranodal lymphomas.^[4] The most common clinical appearance of NHL in the mouth is a nonhealing, painless ulceration.^[5] NHL can affect both bony and soft oral tissue, with the most frequent localization being the palate and mandible. However, it is rare to find extranodal NHLs in the gingiva.^[6]

Hodgkin's disease often presents as nodal disease, commonly involving cervical, axillary, and inguinal nodes. Whereas

non-Hodgkin's disease may develop extranodally, outside the lymphoid system. Among the jaw lesions, the maxilla is more frequently involved than the mandible.^[7]

About 24% of the NHL occur in extranodal sites; quarter of these occur in the head and neck region.^[8]

NHL often show up in extranodal sites of the head and neck^[9] but intraoral locations are less frequent, especially when they are the only manifestations of this disease.^[10] This is why the diagnosis is frequently postponed and the treatment would be hindered.

This case report describes about primary NHL involving the mandible.

CASE REPORT

A 34-year-old female presented to the Department of Oral and Maxillofacial surgery with a complaint of swelling on the left side of the face which initiated 8 months back, was

Address for correspondence: Dr. Ayesha Moin,
Sri Rajiv Gandhi College of Dental Sciences, Bengaluru, Karnataka, India.
E-mail: ayeshamoin11@gmail.com

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small in size and gradually increased to the present size. The patient also complained of dull pain in the region of lower left back teeth region for 8 months for which consultation from a dental practitioner was sought, but did not subside. The patient also complained of burning sensation of the mouth and pain during night time with a history of difficulty in mouth opening, mastication, and speech. The medical history and family history were not contributory. However, the patient had deleterious habit of chewing pan since 1 year with a frequency of four times a day. The patient was examined at an institution in Chennai before she reported to our institution. In the previous institution, the biopsy and computed tomography neck were performed.

On inspection, a gross solitary swelling was noted on the left side of the face involving upper, middle, and lower one-third of the face approximately 15 cm × 20 cm in size superiorly extending from the lower eyelid to inferiorly beyond the lower border of mandible approximately 4 cm, crossing midline up to the right lower border of the mandible medially, and laterally 5 cm posterior to the ear lobe with deviation of nose to the right side and elevation of the left ear lobe. Skin over the swelling was stretched and shiny with prominent vasculature, and erythematous region noted below the lower border of the mandible.

On palpation, there was local rise in temperature and swelling was firm to hard in consistency. Tenderness noted on the left zygomatic region.

Intraoral examination

Mouth opening was limited (10 mm). Intraoral swelling was present extending from left premolar to posteriorly up to the retromolar region. Mucosa over the swelling was pale with ulceration and pseudomembranous area approximately measuring 6 cm × 8 cm.

On palpitation, tenderness was present over the mucosa in relation to left premolar to posteriorly up to the retromolar region. Vestibular tenderness and obliteration noted in relation to 34, 35, and 36.

A diagnosis of high-grade NHL Stage III was made based on the clinical, radiographic, and histopathological examination.

As an investigation, orthopantomogram was advised that did not show any significant changes in the bone. Incisional biopsy was performed from the left buccal mucosa for investigation which gave a report of diffuse large B-cell lymphoma. The report also mentioned about mildly hypercellular marrow with no evidence of lymphoma. Trepine biopsy was performed which mentioned about the high-grade NHL.

Computed tomography neck findings

A large ill-defined heterogeneously enhancing soft tissue lesion noted in the left side with adjacent subcutaneous fat stranding (inflammation). Loss of fat plane with the left masseter, medial and lateral pterygoid and suspicious involvement of the deep lobe of parotid and the left

submandibular gland. Few nonenhancing area showing necrosis and intratumoral neovascularity. Underlying mild cortical erosion of the body and ramus of the mandible with mild periosteal reactions. Inferiorly loss of fat plane with the left floor of mouth and anterior belly of left digastric. Anteriorly extending up to the angle of mouth with loss of fat plane with the left buccinator. Superiorly, the component lateral to the ramus extends up to the left zygomatic arch, and the component medial to the ramus extends up to the skull base with no obvious intracranial extension. Hypodense lesion in the superficial lobe of the left parotid.

Nodes

- Level 1A – few small nodes, largest node ~10 mm shows necrosis
- Level 1B – left and right multiple necrotic nodes largest ~16.5 mm
- Level 2A – multiple nodes bilaterally (closely spread on the left), largest left node ~23 mm, and right largest ~10 mm
- Level 2B – left up to 7.5 mm, right ~6.5 mm
- Level 3 – left ~8.5 mm, right nil significant
- Level 4 – left – nil significant, right ~10 mm
- Level 5 – nil significant
- Left lateral pharyngeal ~10.5 mm
- Supraclavicular nil significant
- The level 2 nodes compress the left internal jugular vein causes complete collapse of the lumen.

Treatment received

Chemotherapy was advised by the oncologist, and a total of 14 cycles were suggested at the gap of every 2 weeks. The treatment protocol followed was Classical CHOP therapy comprising of -

- Injection cyclophosphamide 1150 mg intravenous (IV) in 500 ml normal saline (NS) over 2 h
- Injection doxorubicin hydrodaunorubicin 75 mg IV in 500 ml NS over 2 h
- Injection vincristine (oncovin) 2 mg diluted in 10 ml NS IV push.

At the end of 2 cycles, the swelling started regressing in size with healed intraoral ulcerated lesion.

DISCUSSION

Malignant lymphomas constitute a group of neoplastic proliferation process of the lymphocytes and their precursor cells. Hodgkin's disease is histologically characterized by the presence of multinucleated Reed–Sternberg cells. Other neoplasms of lymphoid system are referred to as NHL which are derived predominantly from the cells of B-lymphocyte series.^[10]

NHL presents up to 40% of the time at an extranodal site. Moreover, 2%–3% of these extranodal cases may arise primarily in the oral cavity and jaws. It is generally accepted



Figure 1: (a) Preoperative, (b) preoperative orthopantomogram (c) Histopathology image from the biopsy specimen

that the most common site of NHL in the orofacial region is Waldeyer's ring.^[7] Jaw involvement by NHL is rare, but among jaw lesions, maxilla is more frequently involved than mandible.^[7] Primary lymphoma of the bone was first described by Parker and Jackson as primary reticular cell sarcoma of bone.^[2] There are no characteristic clinical features when jaw bones are involved; they can present as swelling of the jaw, pain, numbness, tooth mobility, or cervical lymphadenopathy.^[7] Similarly, in our case, the patient presented with a complaint of swelling over a long duration of time, accompanied with pain and burning sensation.

Lymphomas show a male predominance with male to female ratio 3:2. The average age of presentation is 50–55 years. Radiographic signs of bone involvement may be absent in 10%–20% of cases and the radiographic findings may not be specific. There can be diffuse bone destruction, appearing as a solitary defect or lowering of alveolar bone margin resembling periodontitis.^[7]

NHL can be managed by chemotherapy, radiotherapy, and surgery in various combinations. NHL arising in bone is best treated by chemotherapy and may not require radiotherapy. Survival and prognosis are excellent in localized disease, whereas disseminated disease seems less favorable.^[2] This case was managed by chemotherapy of 14 cycles consisting of the CHOP therapy.

Although lymphoma of mandible is rare, it must be considered in differential diagnosis of swellings arising in that region. Lymphomas arising in bone may be effectively managed by chemotherapy alone. Radiation alone may be curative in early lesions. Adjuvant radiotherapy is useful especially in histopathologic variants suggesting aggressive behavior. The



Figure 2: Postoperative

radiation field should incorporate the ipsilateral mandible and regional lymph nodes. The role of surgery is for biopsy purposes and for the control of persistent or recurrent local disease.^[2] Thus, with the rising incidence of extranodal lymphomas, it has become very important for present age dentists to not take any swellings of the orofacial region at face value but to properly investigate its pathology and treat it judiciously.

CONCLUSION

NHL of the head and neck region, particularly of the mandible, are rare and may be confused with other neoplasms or periapical or periodontal inflammatory processes. There is usually a mass or swelling, showing rapid growth and enlargement, but this is not necessarily the case.

We herein describe a case report diagnosed as high-grade NHL of the oral cavity. The result of chemotherapy in this case of NHL has been successful in reducing the size of the lesion and improving the functional and esthetic appearance [Figures 1 and 2].

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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