Diffuse Large B Cell Lymphoma of Larynx

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Abstract

Extranodal lymphomas of the larynx are very rare, accounting for less than 1% of laryngeal tumours. This study aims to report a case of diffuse large B cell lymphoma of the larynx treated at a newly commissioned cancer centre in semi-urban part of northern India. The case record of a patient of diffuse large B cell lymphoma of larynx was retrospectively reviewed. Presenting complaints, examination findings, investigations, treatment and outcome of this patient are presented. Primary lymphoma of larynx is rare. The diagnosis of this disease is difficult. Combination of chemotherapy and radiotherapy is an effective strategy for treatment.

Introduction

Squamous cell carcinoma accounts for more than 90% of laryngeal cancers. In head and neck, the most common site for lymphoma is Waldeyer's ring. Among the extranodal extralymphatic sites in head and neck, paranasal sinuses, salivary glands and thyroid gland are more common. Larynx is an uncommon site for primary Non-Hodgkin Lymphoma (NHL) even in head and neck.[1] Hematopoeitic neoplasms account for less than 1% of laryngeal cancers.[2] Among hematopeitic neoplasms of larynx, plasmacytoma is the most common followed by NHL. Less than 100 cases of laryngeal NHL have been reported in literature. Among laryngeal NHLs, diffuse large B-cell lymphoma (DLBCL) and extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) represent 70- 80% of cases.[3,4] DLBCL is the most common subtype of laryngeal NHL.[5,6] In spite of its rarity, laryngeal lymphoma is important because it is treated with chemoradiation instead of surgery.

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Received: 15.11.2016; Accepted: 21.12.2017

Case Presentation

A forty three years old lady, known hypertensive, presented with neck swelling for four months and hoarseness of voice for one month. There was no history of fever, night sweats or weight loss. Her performance status was 1 (ECOG scale).

Examination revealed 7 x 6 cm matted mass on left side from level 2 to 4. 90 degrees Hopkins examination revealed submucosal disease in left ary-epiglottic fold and lateral wall of left pyriform sinus with fixed left vocal cord. Direct laryngoscopy revealed smooth submucosal growth in left pyriform sinus.

Magnetic Resonance Imaging (MRI) scan of neck revealed an ill-defined enhancing lesion 8 x 4.7 x 3.7 cm in the left side of neck involving the hypopharynx and supraglottic larynx with left parapharyngeal space extension. The lesion involved the left ary-epiglottic fold, left vocal cords and left pyriform fossa. No necrosis was noted in the lesion. Multiple lymph nodes in left level 1b and bilateral level II and III measuring 9-11 mm were noted.

Computed Tomography (CT) scan of neck revealed an ill-defined homogeneously enhancing lesion in the left lateral pharyngeal wall and left para-glottic space, also involving the left ary-epiglottic fold and extending beyond the thyroid cartilage on left side and into soft tissues of the neck. Left lobe of thyroid gland and overlying strap muscles were involved. The lesion encased the left common carotid artery with angle of contact more than 180 degrees. The lesion also encased the left greater cornua of the hyoid bone with thinning of cortex. Sub-centimetric sized nodes are seen in bilateral level IB and left level III region.

Positron emission tomography–computed tomography (PET-CT) scan showed a metabolically active 38 x 34 x 50 mm (SUV max 7.8) ill defined homogenously enhancing lesion in left hypopharynx and supraglottic larynx involving the left aryepiglottic fold, left pyriform fossa, left paraglottic space and left vocal cord with erosion of hyoid bone and thyroid cartilage on left side. Metabolically inactive subcentimetric bilateral level 1b, level II, level III, level V lymph nodes, largest 8mm were noted.

Bone marrow and cerebrospinal fluid were uninvolved.

Fine needle aspiration cytology (FNAC) from the lesion was repeated twice. The first one revealed reactive lymphadenitis and the second one revealed atypical lymphoproliferative lesion. Biopsy from the lesion was repeated twice. Biopsy from the pyriform fossa lesion revealed no atypia. Biopsy from the exolaryngeal component of the lesion revealed diffuse large b cell lymphoma (DLBCL)-germinal centre phenotype (Mib Index 60-70%). On immunohistochemistry, the lesion was positive for CD20 and Bcl6, while negative for Bcl2, CD3 and Mum1.

After all investigations, she was diagnosed as DLBCL larynx stage 1AE Revised International Prognostic Index (R-IPI) score zero.

She was treated with one cycle of prephase chemotherapy (pending immunohistochemistry on biopsy) with injection cyclophosphamide 250 mg/m2 day 1-3 and injection dexamethasone 16mg day 1-3, followed by three cycles of three weekly R-CHOP (Rituximab, Cyclophosphamide, Doxorubicin, Vincristine and Prednisolone) and intrathecal methotrexate 12 mg on day 1 of each cycle. After three cycles, response assessment CT scan showed complete resolution of the lesion. During chemotherapy, she had total alopecia and CTCAE version 4.03 grade

1 oral mucositis. After completion of the planned chemotherapy, she received involved field radiotherapy (IFRT) to larynx 45 grays/25 fractions. She completed her treatment in August 2016.

Discussion

Majority of laryngeal lymphomas are of B-cell lineage, others being NK/T cell and MALT Lymphomas.

Varied sex predominance has been reported. Two studies have shown that primary laryngeal lymphoma involves females more commonly than males.[5,7]

The symptoms of laryngeal lymphoma are similar to those of laryngeal carcinoma. On endoscopy, laryngeal lymphoma looks like a smooth submucosal swelling or polypoid mass without ulceration.[8] In our patient, direct laryngoscopy showed smooth submucosal growth in left pyriform sinus.

The most common site of laryngeal lymphoma is supraglottis (47%) followed by glottis (25%).[3] They particularly involve the ary-epiglottic folds of supraglottis. A retrospective review of radiological findings of twenty cases of laryngeal lymphoma showed predominant supraglottic involvement with frequent glottic and hypopharyngeal extension, submucosal location, infrequent cervical lymphadenopathy and necrosis.[5] In our patient too, the bulk of the lesion was in the supraglottis and hypopharynx. There was neither necrosis nor any FDG avid cervical lymph nodes.

It is difficult to diagnose laryngeal lymphomas on biopsy. Substantial tissue quantity is necessary. Deeper biopsies are frequently needed. Multiple biopsies are often needed.[9] In our patient, we required two FNAC's and two biopsies to ultimately reach a diagnosis.

Therapy for laryngeal lymphoma is not very well defined. The main modalities of treatment are IFRT (30–50 Gray) alone or in combination with chemotherapy. We opted for three cycles of chemo-immunotherapy with R-CHOP regime followed by IFRT as per NCCN guidelines for limited stage DLBCL.[10]

Conclusion

Primary laryngeal lymphoma is a rare entity. It is difficult to diagnose, frequently requiring multiple biopsies.

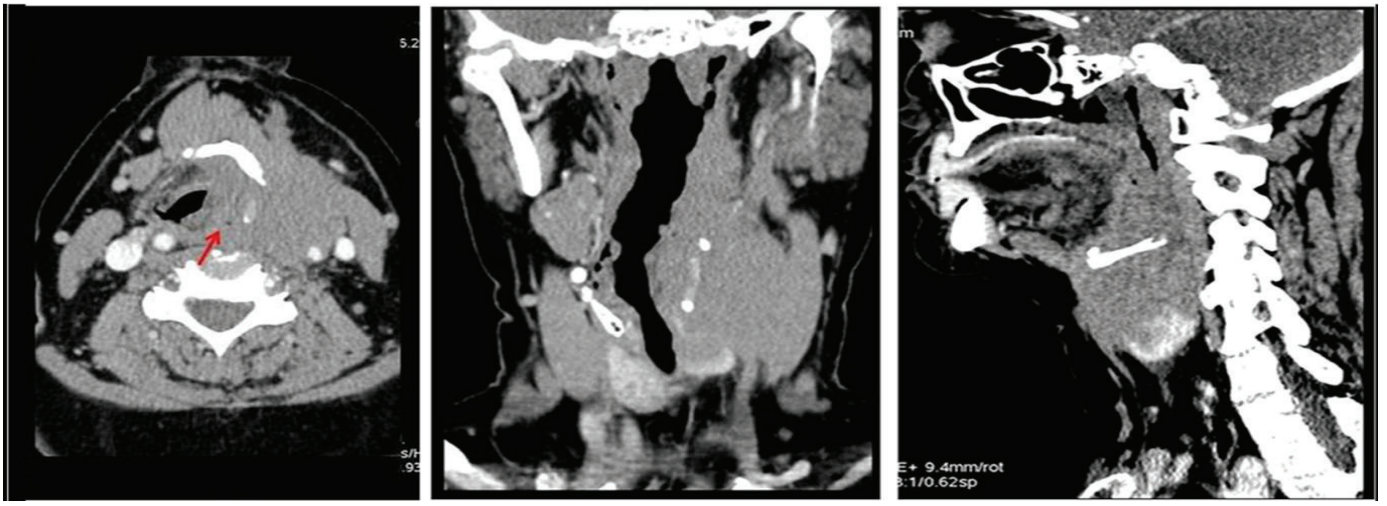

Fig. 1: Pre-Chemotherapy CT scan of the patient. (a) Axial CECT scan showing an ill-defined homogeneously enhancing lesion in the left pyriform sinus (red arrow) with extension of the disease into the soft tissues of the neck. (b) Coronal reformat showing lesion in the left pyriform sinus and involving left lobe of thyroid inferiorly. (c) Sagittal reformat showing lesion in the left pyriform sinus and involving left lobe of thyroid inferiorly

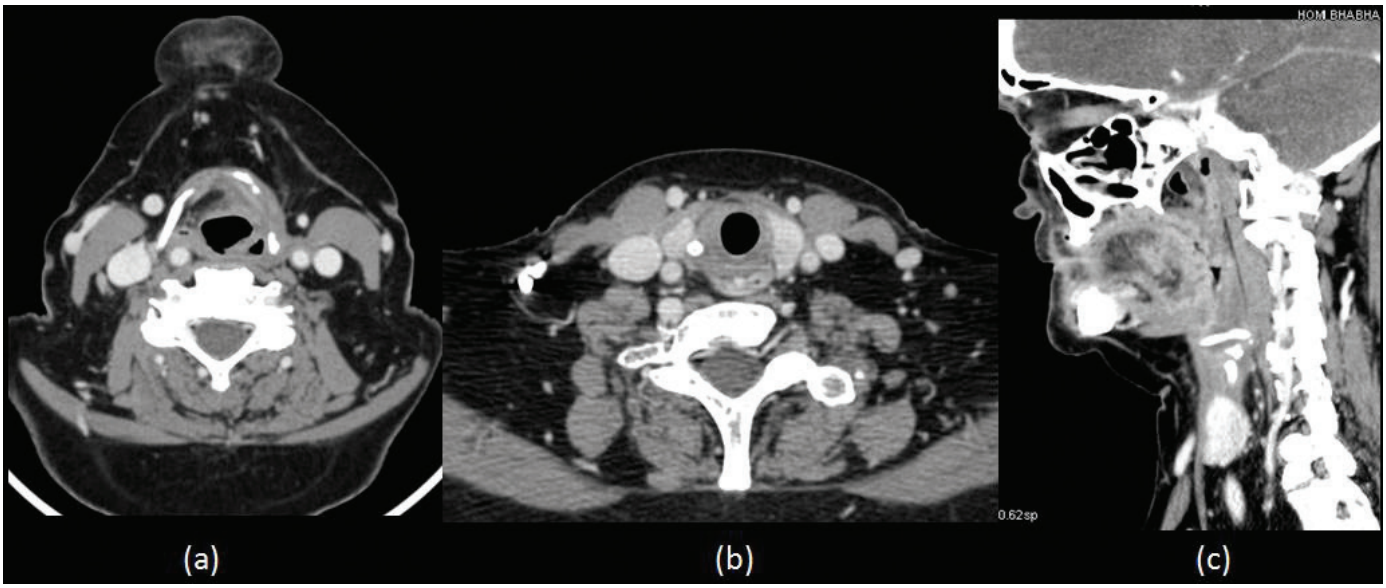

Fig. 2: Post 3 cycles chemotherapy CT scan. (a) Axial scans at same level revels complete resolution of the left pyriform sinus lesion and its extension into the soft tissues of the neck on left side. (b) Thyroid gland is also normal. (c) Sagittal reformats showing normal thyroid gland

On endoscopy, it presents as smooth non ulcerated mass. It is very important to distinguish primary laryngeal lymphoma from squamous cell carcinoma as it is treated with chemo-immunotherapy and radiotherapy. Treatment of DLBCL larynx is feasible in limited resource settings in developing countries.

Disclosure

The authors declare that there is no conflict of interest regarding the publication of this paper.

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