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Radiotherapy

Role of Radiotherapy in Heavily Pretreated Relapsed Nasopharyngeal DLBCL: A Case Report and Review of the Literature

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Abstract | **Case Report**

Background: Diffuse large B-cell lymphoma (DLBCL) of the nasopharynx is a rare extranodal lymphoma. Management of relapsed and refractory disease after multiple lines of chemotherapy remains challenging, particularly in elderly patients with symptomatic locoregional progression. ***Case Presentation:*** We report the case of a 72-year-old man with stage IIA nasopharyngeal DLBCL initially treated with R-CHOP and intrathecal prophylaxis, followed by multiple lines of salvage chemotherapy (ICE, DHAP, RDHAOX, gemcitabine-vinorelbine) for successive relapses. In 2025, he presented progressive dysphagia and dysphonia related to bilateral cervical and nasopharyngeal disease progression. Imaging confirmed locoregional relapse with mediastinal lymph node involvement. Biopsy confirmed non–germinal center subtype DLBCL. Given the heavily pretreated status and symptomatic progression, the multidisciplinary tumor board recommended palliative radiotherapy. The patient received 45 Gy in 25 fractions using the VMAT technique, targeting the nasopharynx and cervical lymph nodes. Treatment was well tolerated with significant clinical improvement. ***Conclusion:*** Radiotherapy remains an effective palliative option in relapsed or refractory nasopharyngeal DLBCL, providing symptom relief and local disease control when systemic options are limited.

Keywords: Nasopharyngeal DLBCL; Relapsed lymphoma; Radiotherapy; VMAT; Palliative care; Cervical lymphadenopathy.

INTRODUCTION

Diffuse large B-cell lymphoma (DLBCL) is the most common subtype of non-Hodgkin lymphoma, accounting for approximately 30–40% of adult lymphomas worldwide [1]. Although it primarily arises in lymph nodes, up to 30–40% of cases present in extranodal sites, including the head and neck region [2].

Involvement of the nasopharynx is relatively uncommon but clinically significant because of its proximity to critical structures such as the airway, skull base, and cranial nerves [3]. Patients may present with non-specific symptoms, including nasal obstruction, dysphagia, dysphonia, or cervical lymphadenopathy, which may delay diagnosis [4].

The current standard treatment for localized DLBCL is chemoimmunotherapy, most commonly R-CHOP, with or without consolidation radiotherapy depending on stage and risk factors [5]. While this approach achieves high cure rates, approximately 30–40% of patients develop relapsed or refractory disease [6].

Management of relapsed DLBCL typically involves salvage chemotherapy followed by autologous stem cell transplantation in eligible patients. However, a significant proportion of patients, particularly elderly or heavily pretreated individuals, are not candidates for intensive therapies [7]. In such settings, local treatment modalities such as radiotherapy may play an important role in symptom control and local disease management [8].

Radiotherapy is well established as an effective modality for local control in lymphoma, even in the relapsed or refractory setting, and can provide rapid symptom relief in cases of airway compromise or dysphagia [9].

We report here the case of a heavily pretreated patient with nasopharyngeal DLBCL relapse successfully managed with palliative radiotherapy.

CASE PRESENTATION

We report the case of a 72-year-old man diagnosed in 2016 with diffuse large B-cell lymphoma (DLBCL) of the nasopharynx, stage IIA.

The patient initially received six cycles of R-CHOP chemotherapy with intrathecal prophylaxis, achieving a favorable initial response. Over subsequent years, he experienced multiple relapses and received successive salvage regimens including ICE, followed by DHAP, which was later switched to RDHAOX due to toxicity. In 2024, he presented a further relapse treated with gemcitabine and vinorelbine.

In 2025, the patient developed progressive dysphagia and dysphonia associated with increasing cervical lymphadenopathy. Imaging with CT and PET scan demonstrated bilateral hypermetabolic cervical lymph nodes with extension to mediastinal stations, consistent with locoregional progression (Figure 1). Histological confirmation of relapse was obtained, showing DLBCL of non–germinal center subtype.

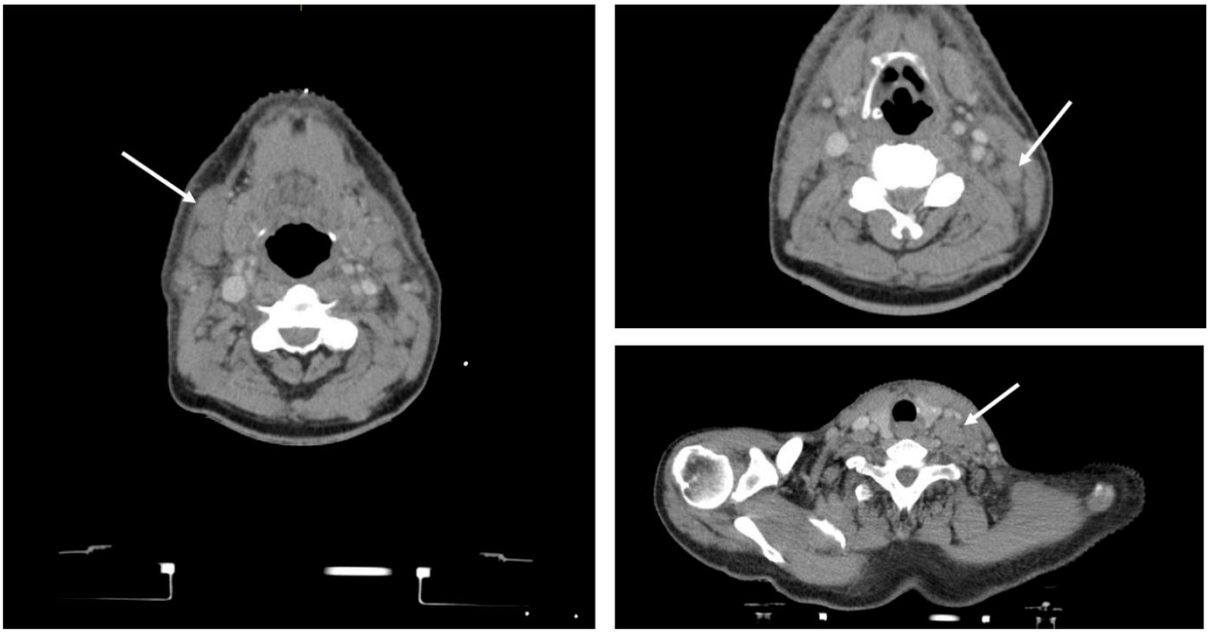

Figure 1: Contrast-enhanced CT images showing locoregional relapse of nasopharyngeal DLBCL

Axial CT images at three cervical levels demonstrate multiple bilateral cervical lymphadenopathies, predominantly along the jugular chains, indicated by arrows. These findings were consistent with symptomatic locoregional disease progression.

Given the multiple prior treatment lines and the patient's clinical deterioration, the case was discussed on a multidisciplinary tumor board. The consensus was to proceed with palliative radiotherapy for symptomatic control.

Radiotherapy planning was performed using volumetric modulated arc therapy (VMAT). The gross tumor volume (GTV) included the residual nasopharyngeal lesion and involved cervical lymph nodes. The clinical target volume (CTV) encompassed the GTV with a 10–15 mm margin adjusted to anatomical barriers and included the Waldeyer ring and involved nodal regions. The planning target volume (PTV) was generated by adding a 5 mm margin to account for setup uncertainties (Figure 2).

The prescribed dose was 45 Gy delivered in 25 fractions of 1.8 Gy once daily, five days per week.

VMAT plan delivering 45 Gy in 25 fractions to the nasopharyngeal lesion and involved cervical nodal regions, showing target delineation, beam arrangement, and dose-volume histogram with conformal PTV coverage.

The treatment was well-tolerated overall. During radiotherapy, the patient experienced progressive improvement in swallowing and phonation. No severe acute toxicity was observed.

Radiotherapy was completed on February 2, 2026. At the end of treatment, the patient showed clear clinical benefit with improved nutritional intake and symptom control. Follow-up imaging was scheduled at three months.

At three-month follow-up, contrast-enhanced CT of the neck, chest, abdomen, and pelvis showed a decrease in the size of the two right laterocervical lymph nodes previously considered target lesions, with

disappearance of the other target and non-target lymphadenopathies. These findings were consistent with a partial radiological response according to Cheson criteria.

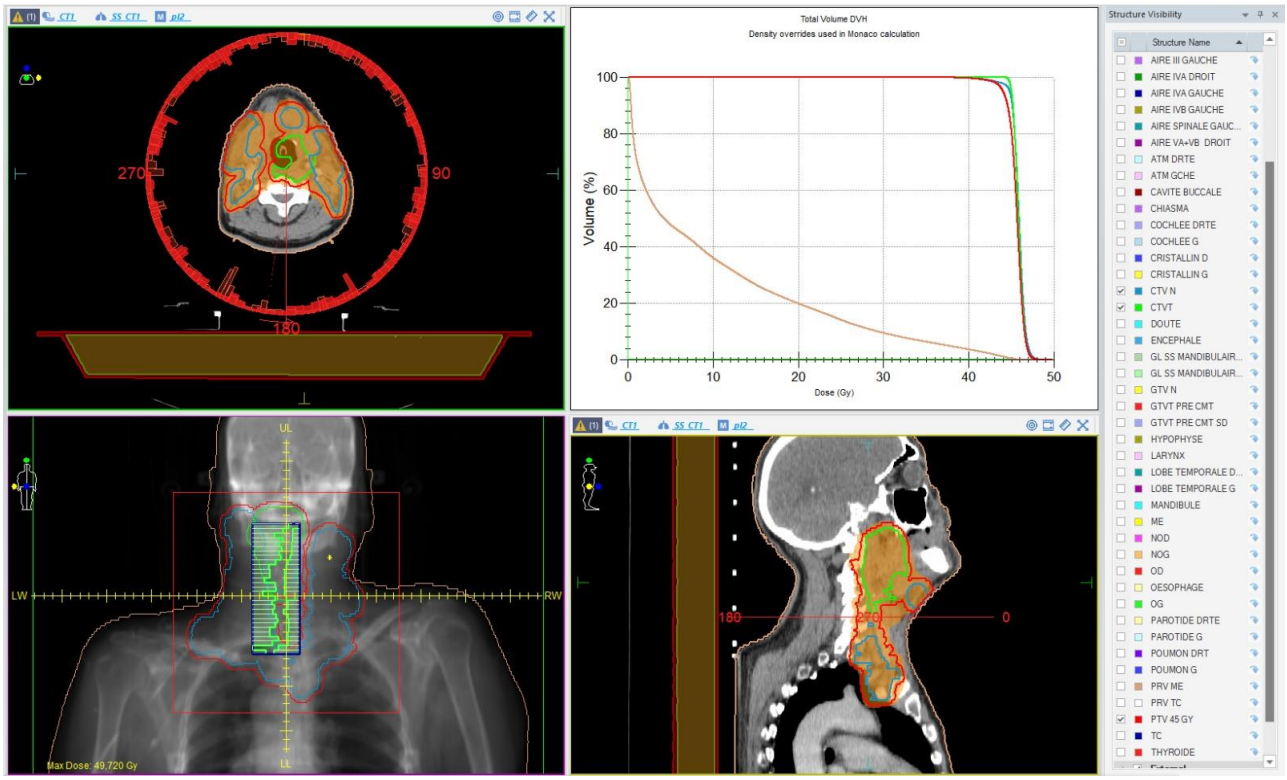

Figure 2: Radiotherapy treatment planning

DISCUSSION

Nasopharyngeal involvement in DLBCL is rare and presents unique therapeutic challenges due to the anatomical complexity of the region and the proximity of critical organs at risk. Although DLBCL is a systemic disease, locoregional relapse may lead to significant functional impairment, including dysphagia, dysphonia, and airway compromise, as observed in our patient.

The standard frontline treatment with R-CHOP achieves long-term remission in a large proportion of patients; however, relapse occurs in up to 40% of cases [6]. For fit patients, salvage chemotherapy followed by autologous stem cell transplantation remains the standard of care [7]. However, many patients, especially elderly individuals or those who have received multiple prior lines of therapy—are not eligible for further intensive systemic treatment.

In such situations, radiotherapy represents an important therapeutic option. Lymphomas are highly radiosensitive tumors, and radiotherapy has been widely used both as consolidation after chemotherapy and as salvage treatment in localized relapse [8,9].

Several studies have demonstrated that involved-site radiotherapy (ISRT) provides excellent local control in relapsed or refractory DLBCL, particularly in patients with limited disease burden or symptomatic lesions [10]. In the palliative setting, hypofractionated or moderate-dose regimens can achieve rapid tumor shrinkage and symptom relief, especially in cases of compressive disease [11].

In our patients, the indication for radiotherapy was primarily palliative, aiming to relieve dysphagia and dysphonia caused by tumor progression. A total dose of 45 Gy in 25 fractions was delivered using the VMAT technique, allowing optimal target coverage while minimizing dose to surrounding organs at risk such as the spinal cord, brainstem, and parotid glands.

The clinical response observed in our patient—marked by improvement in swallowing and phonation—is consistent with previously reported outcomes demonstrating the efficacy of radiotherapy in symptom control and local disease stabilization [12].

Furthermore, modern radiotherapy techniques such as VMAT and IMRT enable highly conformal dose delivery, improving the therapeutic ratio by reducing toxicity while maintaining tumor control [13].

Although the role of radiotherapy in relapsed DLBCL is generally considered palliative in heavily pretreated patients, some series suggest that durable local control may be achieved in selected cases, particularly when disease remains localized [10,12].

This case, therefore, illustrates the important role of radiotherapy as a safe and effective option for symptom palliation and local disease control in patients with multiply relapsed nasopharyngeal DLBCL who are not candidates for further systemic therapy.

CONCLUSION

Radiotherapy remains a valuable therapeutic modality in the management of relapsed or refractory nasopharyngeal DLBCL.

In selected patients, it can provide effective symptom relief and local disease control with acceptable toxicity.

A multidisciplinary approach is essential to tailor treatment strategies based on disease extent, prior therapies, and patient condition.

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