Hypopharyngeal Diffuse Large B-Cell Lymphoma in a 74-Year-Old Man Presenting with Dysphagia: A Case Report

Patient: Male, 74-year-old
Final Diagnosis: Diffuse large B-cell lymphoma
Symptoms: Dysphagia
Clinical Procedure: —
Specialty: Hematology • Otolaryngology

Objective: Unusual clinical course
Background: Malignant lymphomas can occur at various sites. Hypopharyngeal tumors are at risk for airway obstruction and require rapid diagnosis and treatment. Most hypopharyngeal malignancies are squamous cell carcinomas; other tumors are rare. To date, only a few cases of malignant hypopharyngeal lymphoma have been reported, and its specific characteristics are unknown. Herein, we report a case of right hypopharyngeal diffuse large B-cell lymphoma (DLBCL) in a 74-year-old man with dysphagia.

Case Report: A 74-year-old man presented to our hospital with dysphagia. He had no relevant medical history. Endoscopic examination revealed a right hypopharyngeal tumor. The surface of the tumor was smooth, with no evidence of hemorrhage. Computed tomography revealed a 40-mm mass located in the hypopharynx. We performed a tracheotomy and biopsy of the tumor. Histopathological examination revealed a diffuse proliferation of large atypical B cells with negative staining for Epstein-Barr virus by in situ hybridization. Immunohistochemical staining was positive for CD20 but negative for CD3 and CD10. The patient was administered chemotherapy. The tumor reduced in size, and the patient recovered completely. During the two-year follow up, no recurrence of cancer was observed.

Conclusions: Although most hypopharyngeal tumors are squamous cell carcinomas (SCCs), the possibility of other types of tumors should also be considered. Malignant lymphoma of the hypopharynx is rare, and more cases need to be studied and reported in the future.

Keywords: Airway Obstruction • Hypopharynx • Lymphoma, Non-Hodgkin

Full-text PDF: https://www.amjcaserep.com/abstract/index/idArt/942070
Background

Malignant lymphomas can occur at various sites. In malignant head and neck lymphomas, the lymph nodes, tonsils, and salivary glands are the most common sites [1]. Approximately 95% of hypopharyngeal malignancies are SCC [2]. Hypopharyngeal tumors other than SCC and malignant lymphomas of the hypopharynx are rare. Hypopharyngeal tumors pose a risk of airway obstruction and should be diagnosed and treated at an early stage. Few cases of hypopharyngeal malignant lymphoma have been reported, and its specific characteristics are unknown. Although the site was different, a similar case of B-cell lymphoma in the epiglottis has been reported previously [3]. Therefore, more cases should be reported. This report presents a case of right hypopharyngeal diffuse large B-cell lymphoma (DLBCL) in a 74-year-old man presenting with dysphagia.

Case Report

A 74-year-old man presented to our hospital with dysphagia but no pain. The patient had no relevant medical history. Endoscopic examination revealed a right hypopharyngeal tumor occupying the glottis (Figure 1). The surface of the tumor was smooth, with no signs of hemorrhage. Computed tomography revealed a 40-mm mass located in the hypopharynx (Figure 2). Lymph nodes were not enlarged. Hematology findings showed a peripheral blood white blood cell count of 7460/μl; C-reactive protein was 0.75 mg/dl, lactate dehydrogenase was 218 IU, squamous cell carcinoma-associated antigen was 0.6 ng/ml, and soluble interleukin-2 receptor was 7460/μl. We performed a tracheotomy and biopsy of the tumor. Histopathological examination revealed a diffuse proliferation of large atypical B cells with negative staining for Epstein-Barr virus by in situ hybridization. Immunohistochemical staining was positive for CD20 and negative for CD3, CD10, and p16. A high proliferation index of lymphoid cells highlighted by Ki67 was noted (Figure 3). The patient was diagnosed with DLBCL, stage IE, with an R-IPI score of 1 (age >60, performance status 0, normal LDH of 218 IU, 0-1 extranodal sites, and stage I/II disease).

He was referred to the hematology department of another hospital for chemotherapy and treated with 6 courses of rituximab, cyclophosphamide, adriamycin, vincristine, and prednisone (R-CHOP). The tumor size reduced, and the patient showed a complete recovery (Figure 4). During the 2-year follow up, there was no recurrence of the tumor.

Discussion

Head and neck cancers are more frequently squamous cell carcinomas, while tumors of other histological types are less frequent [4]. Hypopharyngeal cancer is relatively rare, accounting for approximately 3% of all head and neck cancers [5]. Patients with hypopharyngeal tumors have an average age of 63 years, and 75% are males [2]. Most malignant hypopharyngeal tumors are squamous cell carcinomas [2].

Malignant lymphomas often arise in the lymph nodes; however, approximately 40% of non-Hodgkin lymphomas occur as extranodal lesions [6]. Head and neck lymphomas occur frequently in Waldeyer’s pharyngeal ring, accounting for 40-50% of cases [7]. DLBCL is estimated to account for 32% of B-cell lymphomas [8], while extranodal head and neck DLBCL account for 13.6% [9]. To date, only a few cases of malignant hypopharyngeal lymphoma have been reported. Among malignant lymphomas of the head and neck, malignant lymphoma of the hypopharynx/larynx is very rare, accounting for approximately 3% of the cases [1]. Hypopharyngeal DLBCL is rare; hence, it is important to accumulate more data on its symptoms and findings. Hypopharyngeal tumors involve risk for airway obstruction and require rapid diagnosis and treatment. Although at a different site, a similar case of B-cell lymphoma in the epiglottis was reported [3,10]. Malignant lymphoma of the larynx is also unusual. Hypopharyngeal and laryngeal malignant lymphomas are rare and hypothesized to have a similar pathogenesis. This case is similar to the present case and is expected to be studied and accumulated in the future.

PubMed was searched for the period through April 2023 for studies published in English using the keywords “hypopharynx” or “lymphoma” for both abstracts and full texts. A few cases of hypopharyngeal malignant lymphoma have been reported and are summarized in Table 1 [7,11-15]. There were 7 cases of hypopharyngeal malignant lymphoma. The median
The age of the patients was 61 years (range, 28-74 years). Four patients were males and 3 were females. The patients presented with symptoms such as dysphagia (4 patients); sore throat (3 patients); and voice change and pharyngeal discomfort (1 patient each). There were 3 cases of smooth, 2 cases of ulcerous, and 1 each of non-ulcerous and papillomatous tumors. Regarding tumor location, 5 tumors were located in the piriform sinuses and 2 in the posterior wall. The histological types of malignant lymphomas reported were 3 cases of DLBCL and 1 case each of mucosa-associated lymphoid tissue lymphoma, Burkitt’s lymphoma, adult T-cell leukemia/lymphoma, and

Figure 2. Computed tomography shows a 40-mm mass located at the hypopharynx and compressing the airway. (A) Axial; (B) sagittal.

Figure 3. (A) Diffuse proliferation of large tumor cells (hematoxylin and eosin stain 400×), (B) CD-20 positive (400×), (C) Ki67 proliferation index (400×).
T-cell non-Hodgkin lymphoma. Treatment included chemotherapy in 3 cases, chemoradiotherapy in 2 cases, and no treatment in the other 2 cases. The age of patients with hypopharyngeal malignant lymphoma was similar to that of patients with hypopharyngeal tumors. Additionally, the male-to-female ratio was nearly equal in the cases of hypopharyngeal malignant lymphoma.

### Conclusions

Although most hypopharyngeal tumors are SCCs, the possibility of other types of tumors should be considered. Malignant lymphoma of the hypopharynx is rare, and more cases need to be studied in detail and reported in the future.

### Acknowledgments

We would like to thank the patient and his family.

### Declaration of Figures’ Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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**Table 1.** Clinical characteristics of reported cases of hypopharyngeal malignant lymphoma.

<table>
<thead>
<tr>
<th>Author</th>
<th>Age</th>
<th>Sex</th>
<th>Symptom</th>
<th>Finding</th>
<th>Subsite</th>
<th>Type</th>
<th>Treatment</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cordes (2011) [12]</td>
<td>63</td>
<td>M</td>
<td>Dysphagia, sore throat</td>
<td>Ulcer</td>
<td>Piriform sinuses</td>
<td>DLBCL</td>
<td>NA</td>
<td>DOD (alive at 10 weeks)</td>
</tr>
<tr>
<td>Present case</td>
<td>74</td>
<td>M</td>
<td>Dysphagia</td>
<td>Smooth</td>
<td>Piriform sinuses</td>
<td>DLBCL</td>
<td>Chemo</td>
<td>CR (2 years)</td>
</tr>
</tbody>
</table>

DLBCL – diffuse large B-cell lymphoma; MALT – mucosa-associated lymphoid tissue; NA – not applicable; Chemo – chemotherapy; RT – radiotherapy; DOD – died of disease; CR – complete response.
References:

5. Garneau JC, Bakst RL, Miles BA. Hypopharyngeal cancer: A state of the art review. Oral Oncol. 2018;86:244-50