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NON-HODGKIN LYMPHOMA PRESENTING AS UNILATERAL HYPERTROPHY TONSIL

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ABSTRACT
Non-Hodgkin lymphoma (NHL) can occasionally present as an extranodal malignancy in the head and neck region. While Waldeyer's ring is the most common site for extranodal NHL in this area, its clinical presentation can mimic benign inflammatory conditions such as tonsillitis or a peritonsillar abscess, leading to diagnostic delays. This case report aims to describe the clinical presentation, diagnostic workup, and histopathological findings of a rare case of diffuse large B-cell lymphoma (DLBCL) presenting as unilateral tonsillar hypertrophy in an elderly patient. We report the case of a 72-year-old female who presented with odynophagia and progressive left-sided neck swelling. The diagnostic process included a thorough physical examination, contrast-enhanced computed tomography (CT) imaging, surgical tonsillectomy, histopathological analysis, and immunohistochemistry (IHC) staining. CT imaging revealed an enhancing mass in the left tonsil. Histopathological examination of the excised tonsil showed a diffuse proliferation of large, atypical lymphoid cells effacing the normal architecture. Immunohistochemical staining was positive for CD20 and BCL-2, and negative for CD3 and CD30, confirming a diagnosis of diffuse large B-cell lymphoma (DLBCL), of the non-germinal center B-cell subtype. This case highlights the critical importance of including lymphoma in the differential diagnosis for unilateral tonsillar enlargement, especially in older patients. A high index of suspicion, followed by timely histopathological and immunohistochemical analysis, is essential for accurate diagnosis and prompt initiation of appropriate therapy.
Keywords: non-hodgkin lymphoma; diffuse large b-cell lymphoma; tonsillar hypertrophy; waldeyer's ring; case report.

INTRODUCTION

Lymphoma is a cancer originating from lymph cells and is divided into Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL) (Bhuiyan et al., 2023; Ehrlich, 2022; Jacobson & Longo, 2022; Mafra et al., 2022; Saber et al., 2023). Over the past 20 years, the incidence of non-Hodgkin lymphoma has increased, particularly outside the lymph nodes (Chu et al., 2023; Ehrlich, 2022; Li et al., 2025; Milano, 2023; Saber et al., 2023). The head and neck region is one of the most common extranodal sites, second only to the gut. Extranodal lymphoma can occur in almost any organ, though it is most commonly found in the skin, stomach, brain, small intestine, and Waldeyer's ring. However, there is ongoing debate regarding whether Waldeyer's ring should truly be considered extranodal.

Approximately 2.5% of lymphomas occur in the mouth and surrounding areas, with most originating in Waldeyer's ring (Höglund Wetter & Mattsson, 2022; Ursu et al., 2023). This lymphatic ring includes the palatine tonsils, nasopharyngeal lymph tissue, and the lingual tonsil. The most common type of lymphoma in this region is diffuse large B-cell lymphoma (DLBCL), which accounts for about 30% of all lymphomas. While DLBCL is often regarded as a single disease entity, it comprises several subtypes that vary in their clinical behavior and pathological

features. These variations are reflected in differences in morphology, immunohistochemical profiles, and genetic characteristics (Chłopek et al., 2022; Pivovarcikova et al., 2022; Pretzsch et al., 2022; Țăpoi et al., 2023; Uljanovs et al., 2022; Xia et al., 2022). Recent classifications have further distinguished two main groups of DLBCL based on their cellular origin: those derived from germinal center B cells and those originating from activated B cells (Berhan et al., 2025; Kurz et al., 2023; Pasqualucci, 2023; Shimkus & Nonaka, 2023; Song et al., 2023).

Malignant lymphoma is a group of cancers with varying speeds of progression, some being fast-growing, while others are slower. They originate from lymph tissue cells, mostly lymphocytes and histiocytes, at different stages. In adults, about 30% of NHL cases start outside the lymph nodes (Yang et al., 2023). In the head and neck, NHL outside lymph nodes is the second most common cancer after squamous cell carcinoma (Köseoglu et al., 2025). Additionally, around 11% of NHL cases present with primary lesions in the head and neck region (Ezzat et al., 2001). In the United States, about 5–10% of patients with NHL show involvement of Waldeyer's ring, with the tonsils being the most affected site, accounting for approximately 51% of cases (Yang et al., 2023).

In this region, B-cell lymphoma is the most common, and DLBCL is the predominant type. For T-cell lymphoma outside the lymph nodes, NK/T-cell lymphoma is most common. Hodgkin lymphoma is less common in this area. As previously mentioned, 2.5% of lymphomas occur in the mouth and surrounding areas, most originating in Waldeyer's ring, which includes the palatine tonsils, nasopharyngeal lymph tissue, and the lingual tonsil. Together, these structures help the body fight infection in the upper throat and mouth area.

The most frequently encountered lymphoma in this anatomical region is DLBCL, accounting for approximately 30% of all lymphoma cases. Although it is often categorized as a single disease entity, DLBCL comprises several subtypes that differ in their clinical behavior and pathological characteristics. The clinical manifestations of NHL vary widely and are influenced by both the specific lymphoma subtype and the anatomical site involved. Patients commonly experience symptoms such as lymph node enlargement (lymphadenopathy), fever, night sweats, and unexplained weight loss. When the tonsils are affected, the symptoms may resemble benign conditions like chronic tonsillitis, making the diagnosis more challenging. When NHL affects the tonsils, symptoms may mimic those of a common tonsil infection, leading to confusion among doctors. Early detection through imaging and biopsy is crucial, as timely intervention with treatments like chemotherapy is vital for improving patient outcomes.

This case report addresses this gap by providing a detailed account of a 72-year-old female whose unilateral tonsillar hypertrophy, initially suspected to be an abscess, was ultimately diagnosed as DLBCL. The novelty of this report lies in its emphasis on the critical diagnostic clues from the physical examination and imaging, as well as the definitive role of histopathology and immunohistochemistry. The primary objective is to highlight for clinicians, particularly otolaryngologists and primary care physicians, the importance of including lymphoma in the differential diagnosis of persistent unilateral tonsillar enlargement. This report contributes to the existing medical literature by providing a vivid example that may help reduce diagnostic delays and improve patient outcomes through timely intervention.

METHOD

Study Design

This study do case report to tell what happen with patient, like how patient show sick signs, how doctors check, what lab and tissue test show, and how patient get treatment. Case report good for write down rare sick things and maybe help doctor know same kind of patient later.

Subject and Setting

The study look at 72 years old woman come to Emergency Room in RSUD Mulya Hospital, Indonesia, she feel pain when swallow and neck get big. Doctors check her, do surgery, and test her body stuff in hospital.

Data Collection

Data come from patient paper record, like history, body check, pictures (imaging), surgery paper, and lab test from tissue. To find out disease, doctors do body check, take out tonsils, look at tissue under microscope, and do IHC test to see exactly what type of lymphoma.

Diagnostic Procedures

Patient got tonsils removed for check and treatment. The removed tonsils looked at under microscope, show many tumor cells under the top layer. Doctors do more test with IHC, show it same with DLBCL, non-germinal center B-cell type.

Data Analysis

All patient data from checkup and lab test were look at with simple description, compare with old papers about non-Hodgkin lymphoma outside lymph node in Waldeyer's ring. This way let doctors talk more about patient signs, how to find disease, and how to treat it.

RESULTS AND DISCUSSION

A 72-year-old female was brought to Mulya Hospital by her son with complaints of odynophagia that had persisted for approximately one month. The symptoms were later accompanied by painful swelling on the left side of the neck and snoring. She was referred to the emergency department by her physician due to a suspicion of tonsillar hypertrophy. During the physical examination, enlargement of the left tonsil was observed, along with the presence of exudate, which raised suspicion of a tonsillar abscess. "Patient no say lose weight by accident or more neck swelling. Doctor tell to do tonsil surgery. Tonsil tissue look under microscope show layer of squamous cells, some area broken (ulcer). Under layer have tumor all over. Tumor cells round or oval, same size, rough chromatin, big nucleoli, little cytoplasm. Many cells dividing (mitosis). Tissue around (stroma) thick and fibrous. Some salivary gland parts at edge. After get pathology (PA) result, we say do IHC test.

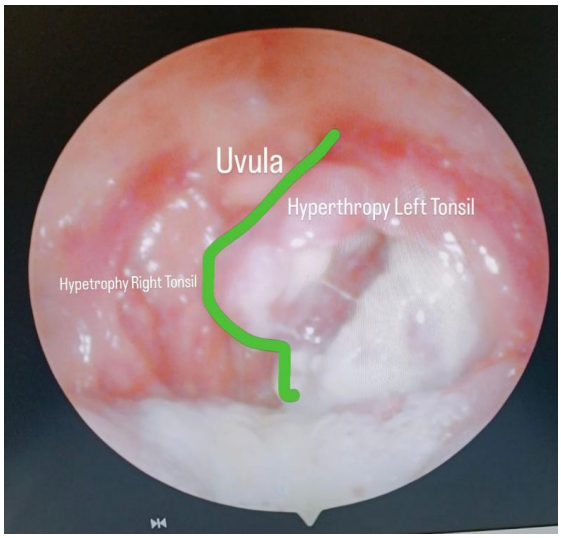

Figure 1. Lymphoma

Lymphoma is a group of cancers originating from lymph tissue. It is classified into two major types: Hodgkin lymphoma, which is characterized by the presence of Reed–Sternberg cells, and non-Hodgkin lymphoma (NHL), which does not have these cells. NHL accounts for about 85% of all lymphoma cases. According to the World Health Organization (WHO), NHL is further divided based on the origin of the malignant cells: B-cell lymphoma and T-cell/NK-cell lymphoma. Each of these groups is subdivided into precursor neoplasms and mature differentiated neoplasms. Among the mature B-cell neoplasms, diffuse large B-cell lymphoma (DLBCL) represents one of the most common subtypes. Several factors are known to increase the risk of developing NHL, including viral infections, immunodeficiency conditions, genetic alterations, and various environmental exposures (6).

In many cases, NHL initially presents as a primary nodal disease, typically involving widespread lymph nodes. The lymph nodes most commonly affected are deep neck nodes, the posterior triangle of the neck, chest (mediastinal) nodes, lung (hilar) nodes, and axillary nodes. In the abdomen and pelvis, NHL typically affects the mesenteric nodes. Patients usually notice lymph nodes that are enlarged but painless, which is considered a classic sign of the disease (7).

If a patient experiences fever, night sweats, or unexplained weight loss, it often indicates a worse prognosis. In this case, the patient's primary complaint was odynophagia, likely caused by extranodal involvement of structures within Waldeyer's ring. When extranodal disease occurs, it may involve almost any organ, and determining whether the lesion represents a primary extranodal lymphoma or secondary involvement can be challenging, particularly when both nodal and extranodal disease are detected simultaneously at diagnosis. Approximately 10–20% of NHL cases outside lymph nodes start in the head and neck, making it the second most common location. Waldeyer's ring is most commonly affected, but lymphoma in this area constitutes only 1% of all NHL cases, with 65–75% of them being DLBCL (8).

Tonsillar involvement in NHL may be unilateral or bilateral and typically appears as a lesion with homogeneous density and mild contrast enhancement, similar to the findings observed in our

patient. In some cases, however, the lesion may present as a low-density mass with peripheral rim enhancement, mimicking the appearance of a tonsillar abscess. CT findings in such cases are generally nonspecific, and it may be difficult to distinguish lymphoma from squamous cell carcinoma based on imaging alone. In cases of secondary extranodal involvement, NHL may spread to multiple organs. For example, when the lungs are affected, CT imaging usually shows nonspecific findings, making radiological differentiation from other pulmonary diseases challenging (9).

The diagnosis of lymphoma relies heavily on histopathological examination and immunophenotyping through flow cytometry. Lymphoma cells usually test positive for CD-20, CD-45, and BCL-2, while B-cell lymphoma generally lacks CD-30 and CD-3. Around 20–30% of NHL cases begin outside the lymph nodes, and the head and neck is one of the most common areas. In this region, lymph tissue in the mouth and throat, particularly Waldeyer's ring, is most often affected, although infiltration of adjacent non-lymphoid tissues may also occur. Within the oral cavity, the most frequently involved sites are the tonsils (about 55% of oral cases), followed by the palate (around 30%) and the buccal or gingival mucosa (approximately 2%) (10).

Waldeyer's ring consists of several lymphatic structures, including the palatine tonsils on the sides of the throat, nasopharyngeal tonsils, pharyngeal lymph tissue, and the lingual tonsils. This ring is the most common site for lymphoma in the head and neck, accounting for more than 50% of cases.

Extranodal NHL in this area constitutes about 10–20% of all NHL cases. In the Ann Arbor staging system, Waldeyer's ring is classified as lymphatic tissue, similar to the thymus, spleen, appendix, and Peyer's patches in the small intestine. As a result, involvement of these structures is not typically classified as an "E" (extranodal) lesion, as the staging system was originally designed for Hodgkin lymphoma, where primary extranodal disease is relatively uncommon. Nevertheless, many clinicians consider these anatomical sites as distinct clinical entities due to their unique pathological and clinical features, and therefore often report their involvement as extranodal disease in clinical practice (11).

CONCLUSION

"If one tonsil becomes enlarged, especially if both sides of the neck lymph nodes are also swollen, doctors should consider the possibility of lymphoma. Radiologists need to examine CT scan signs for this. However, a scan alone is not sufficient to confirm the diagnosis; tissue samples must be examined under a microscope and immunophenotyping must be performed. Lymphoma accounts for about 5% of all head and neck cancers, with Waldeyer's ring being the most common extranodal site (12). Most patients first seek medical attention because of enlarged neck lymph nodes. Ear, nose, and throat (ENT) specialists often conduct the initial examination. Doctors must be familiar with the signs of lymphoma and make the correct differential diagnosis to choose the best treatment.

NHL usually responds well to various treatments, including radiation, chemotherapy (either single-drug or multi-drug), immunotherapy, and radioimmunotherapy. Often, doctors use a

combination of these treatments. Treatment protocols are generally similar, but they may vary depending on the choice of drugs, dosages, and the duration of treatment."

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