

Extranodal Non-Hodgkin Lymphoma of the Head and Neck Region: A Review of 55 Cases

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Received: 23.04.2026 | Accepted: 16.06.2026 | Published: 19.06.2026

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Abstract

Introduction: Extranodal non-Hodgkin lymphoma (NHL) of the head and neck represents an uncommon yet clinically significant group of lymphoid malignancies arising from B-cell or T-cell lineages. These tumors are characterized by malignant monoclonal lymphoid proliferation involving extranodal tissues and frequently exhibit aggressive clinical behavior, necessitating prompt diagnosis and treatment. Because of their diverse clinical presentations and rapid progression, they may mimic other benign or malignant conditions, posing diagnostic challenges. **Objective:** To describe the epidemiological, clinical, radiological, and histopathological characteristics of patients diagnosed with extranodal non-Hodgkin lymphoma of the head and neck and managed at a tertiary referral center. **Patients and Methods:** A retrospective descriptive study was conducted including 55 patients diagnosed with extranodal head and neck NHL between January 2025 and March 2026 in the Department of Otorhinolaryngology–Head and Neck Surgery at Hôpital des Spécialités, Ibn Sina University Hospital, Rabat, Morocco. Clinical records were reviewed for demographic data, presenting symptoms, endoscopic findings, imaging studies, histopathological and immunophenotypic diagnoses, and anatomical sites of involvement. **Results:** Fifty-five patients were included, with ages ranging from 3 to 91 years with the mean age was 52.8 ± 23.3 years (mean ± SD). There was a slight male predominance, comprising 31 males (56.4%) and 24 females (43.6%) corresponding to a male-to-female ratio of 1.29:1. The most frequent extranodal sites were the palatine tonsils (25.5%, $n = 14$), nasopharynx (14.5%, $n = 8$), oral cavity—including the palate and buccal mucosa—(10.9%, $n = 6$), facial bones (frontal bone, maxilla, mandible, and nasal pyramid) (10.9%, $n = 6$), base of tongue (9.1%, $n = 5$), parapharyngeal space (5.5%, $n = 3$), external ear and external auditory canal (5.5%, $n = 3$), parotid gland (5.5%, $n = 3$), nasal cavity (3.6%, $n = 2$), thyroid gland (3.6%, $n = 2$), pharyngolaryngeal region (1.8%, $n = 1$), frontoethmoidal sinus (1.8%, $n = 1$), and sternocleidomastoid muscle (1.8%, $n = 1$). Clinical manifestations varied according to the site of involvement and frequently mimicked other pathological entities. Based on the World Health Organization classification, B-cell lymphomas predominated, accounting for 49 cases (89.1%), whereas T-cell lymphomas represented 6 cases (10.9%). Following diagnosis, all patients were promptly referred to the hematology department for systemic management. **Conclusion:** Extranodal non-Hodgkin lymphoma of the head and neck is a rare and potentially aggressive malignancy with heterogeneous clinical presentations and a broad spectrum of anatomical involvement. In this series, B-cell lymphomas constituted the predominant histological subtype. Early recognition, timely histopathological diagnosis, and multidisciplinary management are essential to facilitate appropriate treatment and improve patient outcomes

Keywords: Extranodal non-Hodgkin lymphoma, Head and neck lymphoma, B-cell lymphoma, Waldeyer's ring.**Copyright © 2026 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

1. INTRODUCTION

Non-Hodgkin lymphoma (NHL) comprises a heterogeneous group of lymphoid malignancies arising from clonal proliferation of B cells, T cells, or natural killer (NK) cells and accounts for the majority of lymphomas worldwide. Approximately 25–40% of NHLs originate in extranodal sites, with the head and neck representing the second most common location after the gastrointestinal tract. [1] The abundance of

lymphoid tissue within Waldeyer's ring, salivary glands, thyroid gland, and mucosa-associated lymphoid tissue makes this anatomical region particularly susceptible to the development of extranodal lymphoproliferative disorders. [2]

Extranodal NHL of the head and neck encompasses a broad spectrum of histopathological subtypes and anatomical presentations. The disease most

commonly involves Waldeyer's ring, the nasal cavity and paranasal sinuses, oral cavity, salivary glands, and thyroid gland, although virtually any structure in the head and neck may be affected.[3] Diffuse large B-cell lymphoma is the predominant histological subtype in most Western populations, whereas extranodal NK/T-cell lymphoma is encountered more frequently in certain Asian and Latin American populations. Overall, B-cell neoplasms constitute the vast majority of cases. [4][5]

The clinical manifestations of extranodal head and neck NHL are highly variable and depend on the site of involvement. Patients may present with rapidly enlarging masses, upper aerodigestive tract obstruction, dysphagia, odynophagia, nasal obstruction, facial swelling, otologic symptoms, or cranial neuropathies. Because these findings often mimic inflammatory conditions or epithelial malignancies, diagnosis may be delayed, potentially resulting in disease progression. Although cross-sectional imaging provides valuable information regarding tumor extent and adjacent tissue involvement, definitive diagnosis relies on histopathological examination supplemented by immunophenotyping and, when appropriate, molecular studies according to the World Health Organization classification.

Unlike most head and neck malignancies, the cornerstone of treatment for NHL is systemic therapy, primarily immunochemotherapy, with radiotherapy reserved for selected indications. Surgical intervention is generally limited to obtaining diagnostic tissue rather than therapeutic resection. Consequently, prompt recognition by otorhinolaryngologists and early multidisciplinary collaboration with hematologists, pathologists, radiologists, and oncologists are essential to optimize patient outcomes.

Despite increasing recognition of extranodal NHL, reports focusing on its presentation within the head and neck remain relatively limited, particularly from North African populations. Furthermore, the rarity of involvement at certain anatomical sites and the heterogeneous clinical manifestations continue to pose diagnostic challenges. The present retrospective study aims to characterize the epidemiological, clinical, radiological, and histopathological features of 55 consecutive cases of extranodal non-Hodgkin lymphoma involving the head and neck region managed at a tertiary referral center in Rabat, Morocco, with the objective of improving awareness and facilitating earlier diagnosis and appropriate management.

2. MATERIALS AND METHODS

2.1 Study Design and Setting

A retrospective descriptive study was conducted in the Department of Otorhinolaryngology–Head and Neck Surgery at Hôpital des Spécialités, Ibn Sina University Hospital, Rabat, Morocco. The study included patients diagnosed with primary extranodal

non-Hodgkin lymphoma (NHL) of the head and neck region over a 15-month period extending from January 2025 to March 2026.

Patient identification and data collection were performed through a systematic review of paper-based medical records maintained by the department, together with histopathological and immunohistochemical reports obtained from the Department of Anatomical Pathology. During the study period, a total of 55 patients fulfilled the eligibility criteria and were included in the analysis.

2.2 Patient Selection

Eligible patients were those with a histopathologically confirmed diagnosis of extranodal non-Hodgkin lymphoma arising primarily within the head and neck region. Inclusion required complete clinical documentation as well as available pathological records permitting confirmation of the diagnosis and histological subtype.

Patients were excluded if they had Hodgkin lymphoma, predominantly nodal lymphoma without primary extranodal head and neck involvement, or incomplete clinical or pathological records that precluded comprehensive data collection.

2.3 Data Collection

Clinical and pathological information was retrospectively extracted from patient files and pathology reports using a standardized data collection approach. Demographic variables included age and sex. Clinical variables comprised presenting symptoms, symptom duration when documented, and findings on physical examination and upper aerodigestive tract endoscopy.

The anatomical site of extranodal involvement was recorded for each patient. Radiological investigations, including computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography/computed tomography (PET/CT) when available, were reviewed to assess lesion characteristics and extent of disease.

Histopathological diagnoses were established on tissue biopsy specimens and supplemented by immunohistochemical analysis. Lymphomas were classified according to the current World Health Organization (WHO) classification into B-cell and T-cell lineages and their respective histological subtypes when available.

2.4 Statistical Analysis

Data analysis was performed using descriptive statistical methods. Continuous variables are presented as mean \pm standard deviation (SD) or median with range, as appropriate according to data distribution. Categorical variables are expressed as absolute frequencies and percentages. Owing to the descriptive nature of the study, no inferential statistical analyses were undertaken.

2.5 Ethical Considerations

The investigation was conducted in accordance with the ethical principles of the Declaration of Helsinki and its subsequent amendments. As a retrospective review of existing medical records, patient anonymity and confidentiality were strictly maintained throughout data collection and analysis, and all identifying information was removed prior to study inclusion.

3. RESULTS

3.1 Patient Demographics and Imaging Findings

A total of 55 patients with histopathologically confirmed extranodal non-Hodgkin lymphoma (NHL) of

the head and neck were included in this retrospective study. The mean age at diagnosis was 52.8 ± 23.3 years (range: 3–91 years). There was a slight male predominance, with 31 males (56.4%) and 24 females (43.6%), corresponding to a male to female ratio of 1.29:1 (Table 1).

All patients underwent contrast-enhanced computed tomography (CT) as part of the diagnostic work-up, whereas magnetic resonance imaging (MRI) was performed in 21 patients (38.2%) to better evaluate local extension and soft tissue involvement (Figure 2).

Table 1: Demographic characteristics and imaging investigations

Variable	Value
Number of patients	55
Mean age (years), mean \pm SD	52.8 ± 23.3
Age range (years)	2–91
Male sex	31 (56.4%)
Female sex	24 (43.6%)
Male-to-female ratio	1.29:1
CT scan performed	55 (100%)
MRI performed	21 (38.2%)

3.2 Anatomical Distribution

The palatine tonsils were the most frequently involved extranodal site (n=14, 25.5%), followed by the nasopharynx (n=8, 14.5%) and the base of the tongue (n=5, 9.1%). Collectively, these structures constitute Waldeyer's ring, accounting for 27 of the 55 cases (49.1%), making it the predominant site of disease involvement in this cohort.

Other common sites included the oral cavity and facial bones (each 10.9%), while involvement of the

parapharyngeal space, external ear and external auditory canal, and parotid gland each represented 5.5% of cases. Less frequently affected sites included the nasal cavity, thyroid gland, pharyngo-laryngeal region, frontoethmoidal sinus, and sternocleidomastoid muscle (Table 2).

Clinical manifestations were heterogeneous and largely depended on the primary site of involvement. (Table 3) (Figure 1).



Figure 1: Clinical manifestations of extranodal non-Hodgkin lymphoma according to the site of involvement

- (A) Left frontoethmoidal sinus lymphoma presenting with left-sided exophthalmos.
- (B) Lymphoma involving the base of the tongue causing a bulky oropharyngeal mass.
- (C, D, H) Palatine tonsillar lymphoma presenting as ulcerative and exophytic tonsillar lesions.
- (E) Pharyngolaryngeal lymphoma with airway compromise requiring tracheostomy.
- (F) Parotid gland lymphoma presenting as unilateral parotid swelling.
- (G) Lymphoma of the right external auditory canal causing complete canal obstruction.

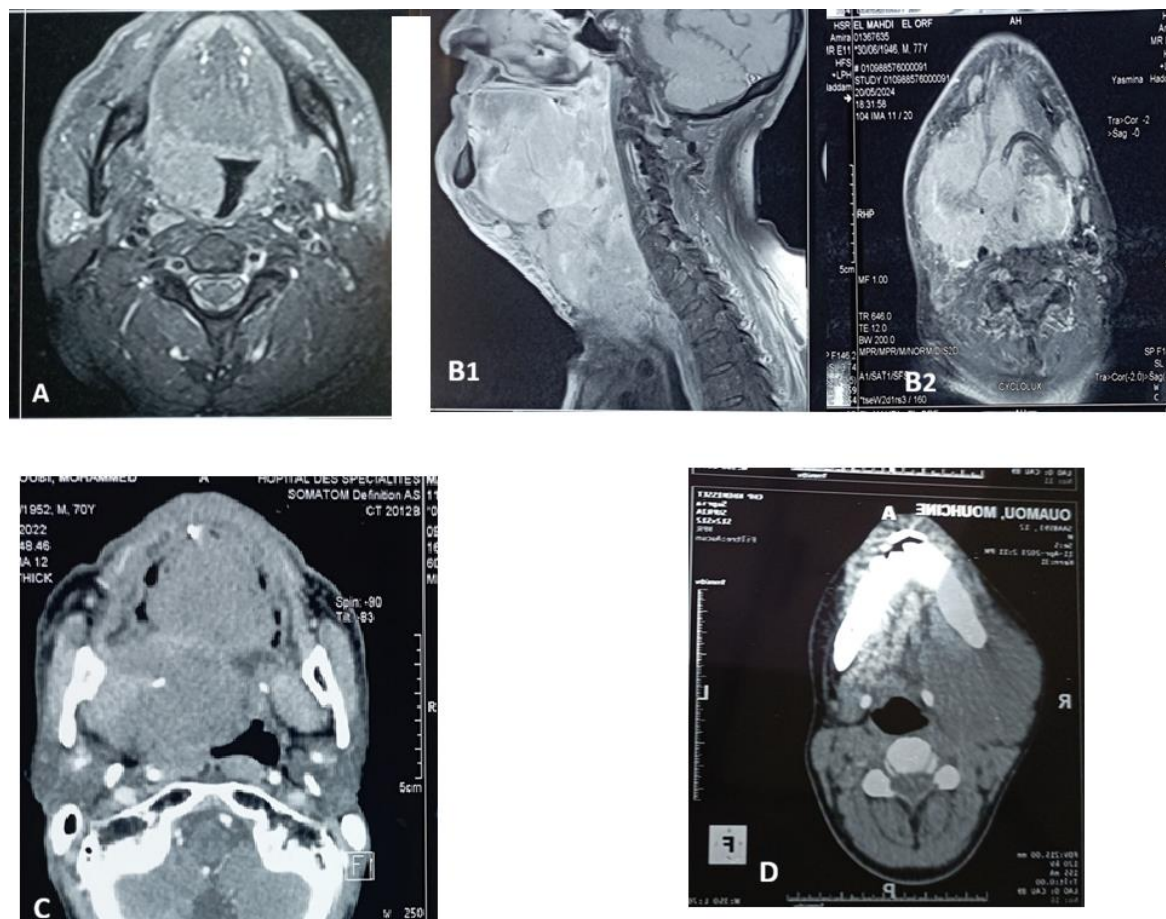


Figure 2: Radiological Representative imaging features of extranodal NHL in the head and neck region

- (A) Axial MRI showing a homogeneous infiltrative mass involving the palatine tonsil with narrowing of the oropharyngeal airway.
- (B1–B2) Sagittal and axial MRI demonstrating an extensive pharyngolaryngeal lymphoma causing marked soft-tissue infiltration and significant airway compression.
- (C) Axial contrast-enhanced CT depicting a bulky tonsillar lymphoma presenting as a relatively homogeneous soft-tissue mass occupying the oropharynx.
- (D) Axial contrast-enhanced CT showing a homogeneous parotid-region lymphoma with diffuse enlargement of the gland and adjacent soft-tissue involvement.

Table 2: Location of extranodal non-Hodgkin lymphoma in the Head and neck region

Location	Number of patients	Frequency (%)
Palatine tonsils	14	25.5
Nasopharynx	8	14.5
Oral cavity (palate and buccal mucosa)	6	10.9
Facial bones (frontal bone, maxilla, mandible, nasal pyramid)	6	10.9
Base of tongue	5	9.1
Parapharyngeal space	3	5.5
External ear and external auditory canal	3	5.5
Parotid gland	3	5.5
Nasal cavity	2	3.6
Thyroid gland	2	3.6
Pharyngo-laryngeal region	1	1.8
Frontoethmoidal sinus	1	1.8
Sternocleidomastoid muscle	1	1.8

Table 3: Presenting clinical manifestations

Clinical presentation	Number of patients	Frequency (%)
Fever and/or night sweats and/or weight loss	23	41.8
Odynophagia, dysphagia and/or oropharyngeal discomfort	23	41.8
Pain	22	40.0
Localized swelling (tumefaction)	17	30.9
Dysphonia	10	18.2
Nasal obstruction	8	14.5
Epistaxis	5	9.1
Dyspnea	3	5.5
Otorrhea and/or otalgia	2	3.6
Exophthalmos	1	1.8

3.3 Histopathological Findings

Histopathological diagnosis was established in all patients by biopsy performed under either local or general anesthesia. Emergency airway management was required in two patients presenting with severe dyspnea, both of whom underwent tracheostomy. One of these patients had lymphoma involving the base of the tongue, while the second had involvement of the pharyngo-laryngeal region.

Among the three patients with parotid gland involvement and one patient with thyroid gland involvement, the diagnosis was established intraoperatively by frozen-section examination

following biopsy, isthmolobectomy was performed for the patient with thyroid location. Of the 14 patients with palatine tonsil involvement, five underwent complete tonsillectomy, with the diagnosis confirmed on definitive histopathological examination of the resected specimen.

Based on the World Health Organization classification, B-cell lymphomas predominated, accounting for 49 cases (89.1%), whereas T-cell lymphomas represented 6 cases (10.9%). (Table 4). Following pathological confirmation all patients were referred to the hematology department for initiation of appropriate systemic treatment.

Table 4: Histological Findings

	Number of patients	Frequency (%)
B Cell Lymphoma	49	89.1
Diffuse large B-cell lymphoma (DLBCL)	33	67.3
Burkitt's B-cell lymphoma	4	8.1
Mantle cell lymphoma (MCL)	7	14.3
MALT B-cell lymphoma	2	4.1
Low-grade B-cell lymphoma	6	6.1
T-cell lymphoma	6	10.9

4. DISCUSSION

Extranodal non-Hodgkin lymphoma (ENHL) of the head and neck is an uncommon malignancy that presents significant diagnostic challenges because of its heterogeneous clinical manifestations and wide spectrum of anatomical involvement. In our series of 55 patients, the mean age at diagnosis was 52.8 years, with a slight male predominance (male-to-female ratio of 1.29:1). These findings are consistent with previous studies reporting that head and neck ENHL predominantly affects middle-aged and elderly individuals and occurs more frequently in men, suggesting that our cohort reflects the epidemiological characteristics observed in both Western and Asian populations. [6-8]

A notable finding of our study is the predominance of lesions involving Waldeyer's ring, which accounted for almost half of all cases. The palatine tonsils represented the most frequent site of disease, followed by the nasopharynx and the base of the tongue. This distribution is in agreement with previously

published series that identify Waldeyer's ring as the principal location of extranodal lymphoma in the head and neck. [6,8,9] The abundance of lymphoid tissue within these structures likely explains their increased susceptibility to lymphomatous transformation. In contrast, involvement of less common sites such as the thyroid gland, parotid gland, facial bones, frontoethmoidal sinus, and sternocleidomastoid muscle was observed only sporadically in our cohort, emphasizing the broad anatomical spectrum of this disease.

The clinical manifestations observed in our patients were highly variable and largely depended on the primary site of involvement. Odynophagia, dysphagia, oropharyngeal discomfort, pain, localized swelling, and constitutional symptoms were among the most common presenting complaints, whereas nasal obstruction, epistaxis, dysphonia, and otologic symptoms were encountered in patients with sinonasal or temporal bone involvement. These nonspecific

manifestations frequently resemble benign inflammatory conditions or other malignant tumors of the head and neck, making early diagnosis difficult. Similar observations have been reported in previous studies, [6,10] which emphasize that persistent unilateral tonsillar enlargement, unexplained mucosal swelling, recurrent nasal symptoms, or constitutional “B” symptoms should raise suspicion for lymphoma and prompt histopathological evaluation.[6]

Although uncommon, upper airway obstruction may represent a life-threatening presentation of extranodal lymphoma. In our series, two patients required emergency tracheostomy because of severe dyspnea caused by lesions involving the base of the tongue and the pharyngolaryngeal region. These cases illustrate the importance of maintaining airway patency while expediting diagnostic procedures and highlight the aggressive local behavior that lymphomas may exhibit when arising in critical upper aerodigestive tract structures.

Radiological imaging played an essential role in the assessment of disease extent. All patients underwent contrast-enhanced CT scanning, while MRI was selectively used in cases requiring better delineation of soft tissue infiltration or skull base extension. Previous reports have demonstrated that CT is particularly valuable for evaluating osseous involvement, whereas MRI provides superior characterization of soft tissue invasion and marrow infiltration. Nevertheless, imaging findings are not pathognomonic, as lymphomas may mimic squamous cell carcinoma, inflammatory disease, or other sinonasal neoplasms.[11, 12] Computed tomography (CT) findings in head and neck follicular lymphoma most commonly consist of a relatively homogeneous, poorly defined soft-tissue mass. Less frequent radiological patterns include diffuse lesions with mixed solid and cystic components and indistinct margins, as well as multiple well-circumscribed solid masses. On magnetic resonance imaging (MRI), head and neck lymphomas typically demonstrate low signal intensity on T1-weighted sequences and variable, ranging from low to high, signal intensity on T2-weighted images. Contrast-enhanced MRI generally reveals heterogeneous degrees of gadolinium enhancement, although these imaging characteristics are not specific and should always be interpreted in conjunction with histopathological findings.[13]

Definitive diagnosis relies on tissue biopsy and immunohistochemical analysis [14, 15]. Patients underwent fine needle aspiration (FNA), core needle biopsy (CNB), and / or excisional biopsy under local or general anesthesia, while selected patients with parotid or thyroid lesions were diagnosed intraoperatively through frozen-section examination after respectively superficial parotidectomy and isthmolobectomy. Furthermore, five patients with tonsillar disease underwent complete tonsillectomy, with the diagnosis

established on final histopathological assessment. Previous studies have emphasized that superficial biopsies may yield nondiagnostic inflammatory tissue and that multiple or deep tissue samples may be required when lymphoma is suspected, particularly in ulcerated or necrotic lesions. Our experience supports this recommendation and underscores the importance of obtaining adequate tissue for accurate classification.[15] [16]

Consistent with the existing literature, B-cell lymphomas constituted the overwhelming majority of cases in our cohort. Diffuse large B-cell lymphoma is recognized as the predominant histological subtype in most Western populations, whereas extranodal NK/T-cell lymphoma is relatively more prevalent in East Asian countries. [6] These geographical differences in histological distribution should be considered when comparing epidemiological studies across different populations. [17]

Management of extranodal head and neck NHL requires close multidisciplinary collaboration between otorhinolaryngologists, pathologists, radiologists, hematologists, and oncologists. Surgical intervention in most cases serves primarily a diagnostic purpose by providing adequate tissue for histopathological evaluation, whereas systemic therapy remains the cornerstone of treatment. Modern immunochemotherapy regimens, particularly those incorporating rituximab for CD20-positive B-cell lymphomas, have substantially improved patient outcomes. Radiotherapy continues to have a role in selected localized or indolent subtypes and as consolidation therapy in appropriate clinical settings. In our institution, all patients were referred promptly to the hematology department following pathological confirmation to initiate definitive treatment. [18,19]

An important observation from our experience concerns the diagnostic challenges associated with salivary gland and thyroid involvement. In several patients, lymphoma was not suspected preoperatively and was only identified following frozen-section examination or definitive pathological analysis after surgery. Similar findings have been reported in the literature, where parotid lymphomas frequently mimic benign salivary gland neoplasms both clinically and radiologically. [13, 20] Therefore, lymphoma should remain an important differential diagnosis for atypical salivary gland or thyroid lesions, particularly when imaging characteristics or clinical evolution are unusual.

The present study has several limitations. Its retrospective nature and single-center design may introduce selection bias, and the relatively small sample size limits detailed subgroup analyses and prognostic assessment. In addition, long-term follow-up and survival outcomes were not systematically available. Despite these limitations, this series provides valuable insight into the epidemiological profile, anatomical

distribution, and diagnostic challenges of extranodal non-Hodgkin lymphoma of the head and neck in a tertiary referral center and reinforces the need for early recognition and multidisciplinary management to optimize patient care.

5. CONCLUSION

Extranodal NHL of the head and neck is an uncommon but aggressive malignancy with diverse anatomical presentations. Prompt recognition, histopathological confirmation, and coordinated multidisciplinary management are critical for timely initiation of therapy. The predominance of B-cell lymphomas and the wide range of affected sites observed in this series contribute valuable data to the existing literature and underscore the importance of maintaining a high index of suspicion in atypical head and neck lesions.

REFERENCES

- Alireza Mesbah and Farnaz Mazloom An extremely rare presentation of non-Hodgkin lymphoma in the head and neck : a case report Sevil Nasirmohtaram, The Egyptian Journal of Otolaryngology (2022) 38:110 <https://doi.org/10.1186/s43163-022-00281-3>
- Weber AL, Rahemtullah A, Ferry JA (2003) Hodgkin and non-Hodgkin lymphoma of the head and neck: clinical, pathologic, and imaging evaluation. *Neuroimaging Clin N Am* 13(3):371–392
- Jiamu Lv, Yining Jiang, Tingting Yu, Shengrui Gao, Wanzhong Yin Clinical characteristics and prognostic analysis of primary extranodal non-Hodgkin lymphoma of the head and neck *Aging (Albany NY)*. 2024 Apr 5;16(8):6796–6808. doi: 10.18632/aging.205726
- Sánchez-Romero C, Bologna-Molina R, Paes de Almeida O, Santos-Silva AR, Prado-Ribeiro AC, Brandão TB, Carlos R. Extranodal NK/T cell lymphoma, nasal type: An updated overview. *Crit Rev Oncol Hematol*. 2021; 159:103237. <https://doi.org/10.1016/j.critrevonc.2021.103237> PMID:33493634
- Wang H, Fu BB, Gale RP, Liang Y. NK-/T-cell lymphomas. *Leukemia*. 2021; 35:2460–8. <https://doi.org/10.1038/s41375-021-01313-2> PMID:34117356
- Jiamu Lv , Yining Jiang , Tingting Yu, Shengrui Gao, Wanzhong Yin Clinical characteristics and prognostic analysis of primary extranodal non-Hodgkin lymphoma of the head and neck *Aging (Albany NY)*. 2024 Apr 5;16(8):6796–6808. doi: 10.18632/aging.205726
- Storck K, Brandstetter M, Keller U, Knopf A. Clinical presentation and characteristics of lymphoma in the head and neck region. *Head Face Med*. 2019; 15:1. 10.1186/s13005-018-0186-0
- Picard A, Cardinne C, Denoux Y, Wagner I, Chabolle F, Bach CA. Extranodal lymphoma of the head and neck: a 67-case series. *Eur Ann Otorhinolaryngol Head Neck Dis*. 2015; 132:71–5. 10.1016/j.ano.2014.07.005
- Chi HS, Lee KW, Chiang FY, Tai CF, Wang LF, Yang SF, Lin SF, Kuo WR. Head and neck extranodal lymphoma in a single institute: a 17-year retrospective analysis. *Kaohsiung J Med Sci*. 2012; 28:435–41. 10.1016/j.kjms.2012.02.014
- Hart S, Horsman JM, Radstone CR, Hancock H, Goepel JR, Hancock BW. Localised extranodal lymphoma of the head and neck: the Sheffield Lymphoma Group experience (1971-2000). *Clin Oncol (R Coll Radiol)*. 2004; 16:186–92. 10.1016/j.clon.2003.10.010
- Eggesbø HB. Imaging of sinonasal tumours. *Cancer Imaging* 2012; 12:136–52. doi: 10.1102/1470-7330.2012.0015
- Konnor Kennedy, Cory Tremblay, Euan Zhang, Gordon Tsang, Ruba Kiwan, Non-Hodgkins lymphoma of the nasal cavity: A case report *Radiol Case Rep*. 2023 Sep 8;18(11):4091–4093. doi: 10.1016/j.radcr.2023.08.073. eCollection 2023 Nov.
- Zhu L, Wang P, Yang J, Yu Q. Non-Hodgkin lymphoma involving the parotid gland: CT and MR imaging findings. *Dento maxillofac Radiol* 2013;42:20130046.
- Kamiński B. Lymphomas of the head-and-neck region. *J Cancer Res Ther*. 2021; 17:1347–50. 10.4103/jcrt.JCRT_213_20
- Ueathaweechol S, Wongwattana P, Chanlalit W, Trongwongsa T, Sutthinont S. Lacrimal sac lymphoma: a case report. *Arch Craniofac Surg* 2022 ;23:43-7.
- Fakhry N, Santini L, Lagier A, Dessi P, Giovanni A. Fine needle aspiration cytology and frozen section in the diagnosis of malignant parotid tumours. *Int J Oral Maxillofac Surg* 2014;43: 802-5.
- Sánchez-Romero C, Bologna-Molina R, Paes de Almeida O, Santos-Silva AR, Prado-Ribeiro AC, Brandão TB, Carlos R. Extranodal NK/T cell lymphoma, nasal type: An updated overview. *Crit Rev Oncol Hematol*. 2021; 159:103237. 10.1016/j.critrevonc.2021.103237
- Czuczman MS, Grillo-López AJ, White CA, Saleh M, Gordon L, LoBuglio AF, Jonas C, Klippenstein D, Dallaire B, Varns C. Treatment of patients with low-grade B-cell lymphoma with the combination of chimeric anti-CD20 monoclonal antibody and CHOP chemotherapy. *J Clin Oncol*. 1999; 17:268–76. 10.1200/JCO.1999.17.1.268
- Pfreundschuh M, Trümper L, Osterborg A, Pettengell R, Trneny M, Imrie K, Ma D, Gill D, Walewski J, Zinzani PL, Stahel R, Kvaloy S, Shpilberg O, *et al.*, and MabThera International Trial Group. CHOP-like chemotherapy plus rituximab versus CHOP-like chemotherapy alone in young patients with good-prognosis diffuse large-B-cell lymphoma: a randomised controlled trial by the MabThera International Trial (MInT) Group. *Lancet Oncol*. 2006; 7:379–91. 10.1016/S1470-2045(06)70664-7
- Prakash Khanal, Nabin Lageju, Bina Adhikari. Diffuse Large B-Cell Lymphoma of Thyroid: A Case Report and Review of Literature *Indian J Otolaryngol Head Neck Surg (October 2022)* 74(Suppl 2):S2287–S2290; <https://doi.org/10.1007/s12070-020-02088-1>