REVIEW ARTICLE

ENT Manifestation of Head & Neck Lymphoma: 10 Years Review

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ABSTRACT

Background: **Lymphoma of the head and neck poses a diagnostic challenge which may lead to a delay in the treatment. Histological workup of patients with head and neck lymphoma would depend on the primary site. Image guided core biopsy is gaining acceptance as it provides excellent diagnostic yields from cervical lymph nodes.**

Design: **10-year retrospective study at the Department of Otorhinolaryngology Head & Neck Surgery, Hospital Pakar Sultanah Fatimah (Department of ORL HNS, HPSF), Muar, Johore.**

Results: **Forty-eight patients were diagnosed with head and neck lymphoma during the study period with 85.4% non-Hodgkin lymphoma and 14.6% Hodgkin lymphoma. There were 47.9% males and 52.1% females with median age of 55.44 years. Neck swelling was the commonest presentation in 45.8% patients. Other ENT presentations included oral mass 22.9%, nasal mass 10.4%, epistaxis 10.4%, nasal blockage 8.3% and hoarseness 2.1%. Punch biopsy was the commonest mode of tissue biopsy in this study with 47.9% whereby surgical excision remained the standard diagnostic approach for cervical lymphadenopathy at 29.2%. Non-surgical approaches such as core biopsy is gaining acceptance because it is less invasive and not requiring anaesthesia consisted 8.3% in this study.**

Conclusion: **Non-Hodgkin's lymphoma is more prevalent in the head and neck compared to Hodgkin's lymphoma. Cervical lymphadenopathy is the commonest presentation which can be diagnosed conventionally by open biopsy, but core biopsy may be considered as an alternative.**

KEY WORDS

head and neck lymphoma, extranodal lymphoma, lymphoma

INTRODUCTION

Lymphoma of the head and neck poses a diagnostic challenge which may lead to a delay in the treatment. Manifestations in the head and neck region lack characteristics that would allow specific identification of a lymphoma subtype without a biopsy and histological evidence[1]. The most common manifestation seen in the head and neck region is cervical lymphadenopathy. Other symptoms include dysphagia, odynophagia, globus sensation, and dyspnoae[1]. Histological workup of patients with head and neck lymphoma would depend on the primary site[2]. Traditionally lymphoma has been diagnosed by excision biopsy of the involved lymph nodes or punch biopsy of the affected organ. The diagnostic tools must provide sufficient tissue for immunohistochemical staining. Image guided core biopsy is gaining acceptance as it provides excellent diagnostic yields from cervical lymph nodes[3]. This 10-year retrospective study will help to provide adequate data on cases of lymphoma presented with ENT manifestations and the choice of diagnostic tools in The Department of ORL HNS, HPSF, Muar that will benefit multidisciplinary team in diagnosing and managing lymphoma.

MATERIALS AND METHOD

A 10-year descriptive, retrospective analysis of patients with head and neck lymphoma in The Department of ORL HNS, HPSF Muar, a hospital in southern Malaysia was carried out. Secondary data of patients with histologically confirmed diagnosis of head and neck lymphoma was obtained from medical records where age at diagnosis, gender, ethnicity, histologic types, clinical presentation of illness, primary ENT site at presentation, diagnostic tools and involvement of secondary ENT sites were reviewed. World Health Organization classification of tumour of hematopoietic and lymphoid tissues Revised 4th Edition was used to classify histopathological types lymphoma. In this study, lymphoma had been classified into two main categories, namely Hodgkin

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Table 1: Demographic statistics of study population

Demographic Data	No of patients % (n = 48)
Age	55.44 (17.6)
Gender	
Male	23 (47.9%)
Female	25 (52.1%)
Ethnicity	
Malay	41 (85.4%)
Chinese	6 (12.5%)
Indian	1 (2.1%)

Table 2: Presenting symptoms of patients with head and neck lymphoma

Symptoms	No of patients % (n = 48)
Neck swelling	22 (45.8%)
Nasal mass	5 (10.4%)
Epistaxis	5 (10.4%)
Nasal blockage	4 (8.3%)
Oral mass	11 (22.9%)
Hoarseness1	(2.1%)

Table 3: Histopathological examination of study population

Histopathological Result	No of patients % (n = 48)
Hodgkin's Lymphoma	**7 (14.6%)**
HL, Lymphocyte predominant	5 (10.4%)
HL, Mixed cellularity	2 (4.2%)
Non-Hodgkin's Lymphoma	**41 (85.4%)**
DLBCL	36 (75%)
MALT Lymphoma	1 (2.1%)
T Cell Lymphoma	1 (2.1%)
Mantle Cell Lymphoma	1 (2.1%)
Extranodal NK/T Cell Lymphoma	1 (2.1%)
ALCL	1 (2.1%)

Table 4: Primary site of head and neck lymphoma of study population

Primary Site	No of patients % (n = 48)
Cervical node	17 (35.4%)
Nasopharynx	10 (20.8%)
Tonsil	9 (18.8%)
Nasal cavity	6 (12.5%)
Base of tongue	2 (4.2%)
Parotid gland	1 (2.1%)
Larynx	1 (2.1%)
Soft palate	1 (2.1%)
Pyriform Sinus	1 (2.1%)

Table 5: Involvement of other site other than primary head and neck lymphoma

Histopathological Res ult	Primary Site	Secondary Site
DLBCL	Tonsil	Cervical node
	Tonsil	Nasopharynx
	Nasopharynx	Hard palate
	Pyriform fossa	Cervical node
Hodgkin's Lymphoma, Lymphocyte predominant	Tonsil	Cervical node

Table 6: Mode of biopsy of primary head and neck lymphoma

Primary Site	Punch biopsy	Tonsillectomy	Open biopsy	Core biopsy
Cervical node			13 (27.1%)	4 (8.3%)
Nasopharynx	10 (20.8%)			
Tonsil	2 (4.2%)	7 (14.6%)		
Nasal cavity	6 (12.5%)			
Base of tongue	2 (4.2%)			
Parotid gland			1 (2.1%)	
Larynx	1 (2.1%)			
Soft palate	1 (2.1%)			
Pyriform Sinus	1 (2.1%)			

lymphoma (HL) and non-Hodgkin lymphoma (NHL). HL were sub grouped into lymphocyte predominant and mixed cellularity. For NHL, it was further sub grouped into diffuse large B cell lymphoma (DLBCL), MALT lymphoma, T cell lymphoma, Mantle cell lymphoma, extranodal NK/T cell lymphoma and ALCL. All collected data were computerized and statistically analyzed using SPSS software version 22.0.

RESULTS

Forty-eight patients were diagnosed with head and neck lymphoma in The Department of ORL HNS, HPSF, Muar between January, 2010 to December, 2019. Demographics of the study population is shown in Table 1. There were 23 (47.9%) males and 25 (52.1%) females with age range from 15 to 84 years, median of 55.44 years. Majority were Malays, 85.4% followed by Chinese 12.5% and Indian 2.1%.

The presenting symptoms are shown in Table 2. Neck swelling was the commonest presentation, occurring in 22 (45.8%) patients. Nasal symptoms such as nasal mass, epistaxis and nasal blockage accounted for five (10.4%), five (10.4%) and four (8.3%) patients respectively. About 12 (25%) patients presented with oral symptoms namely oral mass, 11 (22.9%) and hoarseness, one (2.1%).

Out of 48 patients with head and neck lymphoma, 41 (85.4%) were NHL and seven (14.6%) were HL (Table 3). The commonest NHL was DLBCL 36 (75%) followed by MALT lymphoma, T Cell lymphoma, Mantle Cell lymphoma, Extranodal NK/T Cell lymphoma and ALCL, recorded one (2.1%) each. Majority of HL was lymphocyte predominant, five (10.4%) followed by mixed cellularity, two (4.2%)

The most common primary site of head and neck lymphoma (Table 4) in this study population was cervical node, 17 (35.4%), followed by nasopharynx, 10 (20.8%), tonsil, nine (18.8%), nasal cavity, six (12.5%), and base of tongue, two (4.2%). Other unusual sites like parotid gland, larynx, pyriform fossa and soft palate were one (2.1%) each.

Patients with head and neck lymphoma were examined thoroughly by clinical and endoscopic examination. Five patients were detected with secondary site of lymphoma apart from the primary site that they presented with (Table 5). Out of the five, four were non-Hodgkin's lymphoma, DLBCL and one with Hodgkin's lymphoma, lymphocyte predominant. The secondary sites involved were cervical node, nasopharynx, hard palate, and cervical node.

Diagnosis of head and neck lymphoma were confirmed histologically by various mode of biopsies as in Table 6. Most of cervical node specimen were taken via open biopsy 13 (27.1%), a small number of patients, four 8.3%) had core biopsy. Punch biopsies were taken from nasopharynx 10 (20.8%), nasal cavity, six (12.5%), base of tongue, two (4.2%), larynx, soft palate, pyriform sinus was one (2.1%) each. Seven (14.6%) of the tonsil specimen was obtained via tonsillectomy and the other two (4.2%) by punch biopsy. There was one case (2.1%) of parotid lymphoma confirmed histologically by open biopsy.

DISCUSSION

The head and neck region has numerous lymphoid tissues hence lymphoma in the head and neck are not uncommon, where it is the third most common malignancy (12%) after squamous cell carcinoma (46%) and thyroid carcinoma (33%)[4]. Forty-eight head and neck lymphoma cases were recorded in the span of 10 years (4.8 per year) which matches a study by A. Picard et al where they received 67 extranodal lymphoma of the head and neck in 13 years (i.e., 5 per year)[5]. The median age at diagnosis for patients with head and neck lymphoma was 55.44 years. This result is consistent with other studies by our Asian counterparts (55-57.5 years)[6,7]. There was no difference in the gender distribution, as found in other studies[1,6]. This study would review the ethnic predilection as Malaysia is a diverse country with multiracial background. The Malay race was predominant which corresponded with the ethnic distribution in Malaysia.

There are two major variants of head and neck lymphoma which are Hodgkin's lymphoma and non-Hodgkin's lymphoma. Non-Hodgkin's lymphoma accounted for 85.4% while Hodgkin's lymphoma comprised 14.6%. Similar to this study, non-Hodgkin's lymphoma was also found to be the most common histopathology for head and neck lymphoma in a study by Urquart *et al*[8].

There are various presentations of head and neck lymphoma due to complexity of the anatomy in the head and neck region. Neck swelling is the commonest presentation of Hodgkin's lymphoma and non-Hodgkin's lymphoma. This study supported other literatures where cervical nodal involvement was the leading symptom[1,8]. Extranodal presentation varies based on the site of primary tumour which can be categorized into nasal and oral. Majority of extranodal presentation of non-Hodgkin's lymphoma had nasal symptoms namely nasal mass, epistaxis and obstruction. Involvement of the Waldeyer's ring, with tonsils being the most prevalent site for non-Hodgkin's lymphoma of head and neck has been reported[9,10]. Similarly, this study observed nasopharynx and tonsil being the common site of presentation in non-Hodgkin's lymphoma of the head and neck. This study also found a rare laryngeal presentation of head and neck lymphoma where the patient presented as hoarseness and was later diagnosed with DLBCL. Not many studies have been published on laryngeal lymphoma with only a few case reports seen[11].

In this study, it was found that non-Hodgkin's lymphoma had propensity to involve more than one primary site while there was one case of Hodgkin's lymphoma with two sites involvement. Multiple site involvement in non-Hodgkin's lymphoma was postulated in this study because extranodal site involvement was more prevalent.

Tissue diagnosis is a standard requirement for diagnosing lymphoma. There are many ways to obtain tissue depending on the site involved. Punch biopsy is the commonest mode of tissue biopsy in this study. It is mainly because the primary site of head and lymphoma involves the Waldeyer's ring. In patients with cervical lymphadenopathy, surgical excision remains the standard diagnostic approach. Non-surgical approaches to tissue diagnosis such as core biopsy is gaining acceptance[3] because it is less invasive and not requiring anaesthesia. Image guided core biopsy also claimed to be effective for primary diagnosis and the recurrence of lymphoma[12]. In the current study, diagnosis of head and neck lymphoma in patients presented with cervical lymphadenopathy was mainly made traditionally through open biopsy. There were four cases of DLBCL recorded which were diagnosed via core biopsy because the patients were medically not fit for surgery. Core biopsy had been shown to be an effective diagnostic tool in patients who refused or contraindicated for open surgery.

CONCLUSION

Non-Hodgkin's lymphoma is more prevalent in the head and neck compared to Hodgkin's lymphoma. Cervical lymphadenopathy is the commonest presentation which can be diagnosed conventionally by open biopsy, but core biopsy may be considered as an alternative. Extranodal presentation of lymphoma usually involving the Waldeyer's ring where patients presented mainly with nasal symptoms. Therefore, thorough ENT examination is required to look for secondary site which may aid in tissue diagnosis of lymphoma.

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INFORMED CONSENT

Informed consent is not applicable in this study.

CONFLICT OF INTEREST

The authors declare no potential conflicts of interest.

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