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ORIGINAL ARTICLE

Frequency of malignancy in patients presenting with non-thyroidal neck swelling at a tertiary care hospital.

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ABSTRACT… Objective: To determine the frequency of malignancy in patients presenting with non-thyroidal neck swelling at a tertiary care hospital. **Study Design:** Cross Sectional study. **Setting:** Department of ENT, Sheikh Zayed Hospital, Rahim Yar Khan. **Period:** 27-8-2021 to 28-2-2022. **Methods:** Data was collected from 180 study subjects satisfying the inclusion criteria. The biopsy sample was taken and transferred to the institutional laboratory for histopathology. Malignant cases were labelled on the basis of histopathology and results were recorded on predesigned proforma. **Results:** Mean age of the patients was 40.55±5.95 years. Of the total 180 study subjects, 80(44.44%) were having benign lymph node swelling while 100(55.56%) were having malignant lymph node swelling. Among the malignant cases, 58(32.22%) were having metastatic lymphadenopathy while 42(23.33%) were diagnosed as having lymphoma. Statistically significant difference between the benign and malignant cases was observed with P value 0.02. **Conclusion:** On the basis of our study, it has been concluded that frequency of malignancy is high among individuals presenting with palpable lymph node swelling in the neck. Proper evaluation of these patients is important for early diagnosis and better management, to improve the prognosis and to reduce the morbidity and mortality.

Key words: Malignancy, Neck Swelling, Otorhinolaryngology.

INTRODUCTION

One of the most frequent presenting complaints in outpatient clinics is cervical lymphadenopathy. Cervical lymphadenopathy can have a wide range of causes, from benign to infectious to malignant diseases. Common causes include viral infections, reactive lymphadenopathy and other less serious conditions such as cysts, nodules, abscesses etc. However, swollen lymph nodes can also be caused by serious conditions and malignancy is considered one of the serious causes of lymph node swelling in the neck region. Malignancies which can cause cervical lymphadenopathy include leukemia, lymphoma, rhabdomyosarcoma, melanoma etc.[1,2]

Approximately, three-quarters of these originate from primary site above the clavicle, and 80% are metastatic. Some sign and symptoms are concerning in patients presenting with neck swelling such as hard lump in the neck, difficulty in swallowing, ulcers in the mouth, advanced age and painless lumps.[3]

In younger individuals, with no cancer risk factors, imaging tests are frequently performed to evaluate the palpable neck swelling, sometimes followed by biopsy. Before removing a portion of the lump (a needle biopsy) or the entire lump for testing (an excisional biopsy), doctors frequently do a number of procedures to check for a cancer source in older individuals, especially those with cancer risk factors or warning signals. Blood tests and head and neck computed tomography (CT) or magnetic resonance imaging are commonly performed tests. Lymph node swelling in the neck should be evaluated completely, both infectious as well as reactive causes should also be ruled out as well as cystic causes such as thyroglossal or branchial cysts.[4,5]

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Direct examination of the larynx (laryngoscopy), lungs (bronchoscopy), and esophagus (esophagoscopy) with biopsies, may sometimes be performed simultaneously. In most situations, history and examination combined with an understanding of anatomy and physiology provide an appropriate diagnosis. In challenging situations, magnetic resonance imaging, computed tomography, and ultrasound scanning are being used frequently.[6,7] For accurately prognosticating the disease and treatment planning, imaging is essential in identifying nodal metastases. Additionally, imaging plays a critical role in cervical metastases of unknown origin, treatment response evaluation, and follow-up.[8]

Study aims to determine the frequency of malignancy in patients presenting with palpable lymph nodes in the neck region at a tertiary care hospital. Early diagnosis in patients presenting with malignant lymph node swelling has greater impact on the management and prognosis of these patients. Early intervention in these patients helps reduce the morbidity and mortality and greatly improve the quality of life.

METHODS

Cross sectional study conducted after taking ethical approval from institutional review board (Ref. No.173/IRB/SZM/SZH dated 11-01-2021) from 27-8-2021 to 28-2-2022 in ENT department, Sheikh Zayed Hospital (SZH) Rahim Yar khan. The sample size (n=180) was calculated by using WHO online sample size calculator by using 95% confidence interval, 7% margin of error and proportion of malignancy in non-thyroidal neck swelling as 36%.[9]

Convenient sampling technique was used. Both genders aged between 20 to 60 years presented with palpable lymph node swelling in the neck from last six months or more were included. Neck swelling was defined as clinically palpable neck swelling of minimum 2*2 cm in any neck region confirmed with ultrasound neck. Patients having end-stage liver or kidney illness (based on history and records), thyroid swelling or unwilling to participate in the study were excluded. Data collection was done after taking informed consent. Sociodemographic information and data were recorded on predesigned proforma.

Specimen for biopsy was collected using aseptic procedures by senior consultant surgeon who had at least a year of post-fellowship experience. The biopsy sample was transferred to the institutional laboratory for histopathology and sent in formalin. The data was entered and analysed using SPSS version 25. Quantitative variables were presented as mean and SD while qualitative variables as frequency and percentages. Variables were stratified and post-stratification Chi-square test was used to see the statistically significant difference between the benign and malignant groups and P-value less than 0.05 considered as significant.

RESULTS

Of the total 180 study subjects, mean age was 40.55±5.95years, 108(60%) patients were male and 72(40%) patients were females (Table-I). Mean duration of neck swelling of the patients was 8.99±2.02 months (Table-I). Of the total 180 study subjects, malignancy on biopsy was observed in 100(55.56%) patients as shown in Figure-1. In patients having age ≤ 45 years the malignancy on biopsy was noted in 54(58.7%) patients and in patients having age >45 years the malignancy on biopsy was noted in 46(52.3%) patients. This difference was statistically insignificant with ap-value=0.386 (Table-II). On biopsy, cancer was detected in 62 (57.3%) of the male patients and 38 (52.8%) of the female patients. There was no statistically significant difference with p-value 0.540 (Table-II). In patients having duration of neck swelling ≤ 10 months the malignancy on biopsy was noted in 76(58.5%) patients and in patients having duration of neck swelling >10 months the malignancy on biopsy was noted in 24(48.0%) patients. This difference was statistically insignificant. i.e. p-value=0.206 (Table-II). Evaluation of lymph node swelling based on biopsy showed statistically significant difference with p value 0.02 (Table-III).

Variable	Mean ±SD	Sub groups	Frequency (%)
Age (Years)	40.55±5.95	≤ 45	92(51.11%)
		>45	88(48.88%)
Gender		Male	108(60%)
		Female	72(40%)
Duration of swelling (Months)	8.99±2.02	≤10	130(72.22%)
		>10	50(27.77%)
Type of Lymph node swelling		Benign	80(44.44%)
		Malignant	100(55.55%)

Table-I. Distribution of study subjects with respect to different variables (n=180)

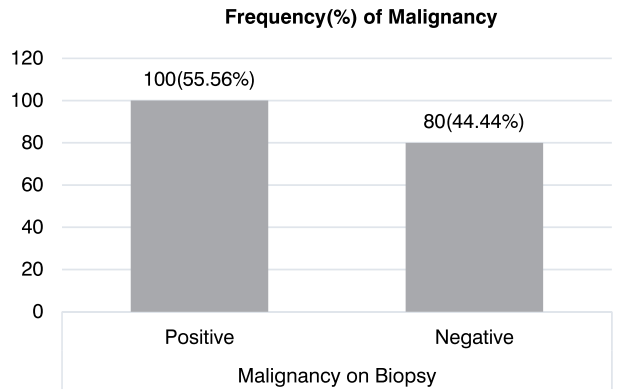

Figure-1. Frequency (%) of Malignancy in patients presented with neck swelling

Variables	Sub groups	Malignancy		P-Value
		Positive	Negative	
Age	≤ 45	54(58.7%)	38(41.3%)	0.386
	>45	46(52.3%)	42(47.7%)	
Gender	Male	62(57.4%)	46(42.6%	0.540
	Female	38(52.8%)	34(47.2%)	
Duration of neck swelling (Months)	≤10	76(58.5%)	54(41.5%)	0.206
	>10	24(48.0%)	26(52.0%)	
	No	98(55.4%)	79(44.6%)	

Table-II. Distribution of different variables in study subjects with respect to presence and absence of malignancy (n=180)

DISCUSSION

Enlargement of the cervical lymph nodes may be an incidental finding or it may be related to patient's complaint. This condition is not usually illness itself but it is a sign of an underlying disease. Evaluation of cervical lymphadenopathy is based on proper history and physical examination and doctor should be concerned about unexplained cervical lymphadenopathy since it may be an indication of an underlying malignancy.

Classification of Lymph Node Swelling	Subgroups	Frequency (%)	P-Value
Benign	Non-specific / reactive lymph-adenopathy	80(44.44%)	0.02*
Malignant	Lymphoma	42(23.33%)	
	Metastatic lymph nodes	58(32.22%)	

Table-III. Evaluation of palpable lymph nodes in the neck (n=180)
***P value <0.05 taken as statistically significant**

A study conducted by Gupta A et al showed that of the total 200 study subjects presented with clinically palpable neck swelling, 18 were diagnosed to have malignant and 182 were having benign neck swelling.[8] When an adult presents with a chronic neck lump, cancer is the primary concern. Fortunately, a conclusive diagnosis is usually found after a systematic diagnostic evaluation, history, and physical examination. A head and neck surgeon should be consulted when the cause is unclear. The most frequent primary neoplasms of the head and neck are squamous cell carcinomas of the upper aerodigestive tract, and cervical lymphadenopathy of unknown origin is frequently caused by their metastases. Local lymph nodes are another site of metastasis for skin malignancies, particularly melanoma. When there is no obvious primary head and neck malignancy to account for regional lymphadenopathy, doctors should look for melanoma in the mucosal tissues of the nose, paranasal sinuses, oral cavity, and nasopharynx.[10]

Another study shows Metastatic tumors accounted for 26.6% of the cases followed by thyroid swellings (21.5%). Squamous cell carcinoma (10.2%) was the most common metastatic lesion while colloid goiter (17.4%) predominates in the thyroid swellings.[11]

Until proven otherwise, all neck lumps should be considered as malignant. The following are warning signs of head and neck cancer: A recent shift in voice and a mass that has been there for

more than two weeks nasal blockage or epistaxis, ipsilateral otalgia, dysphagia or odynophagia, inexplicable weight loss, or appetite reduction. The following are risk factors for head and neck cancer: smoking, drinking, advancing age, having a history of head and neck cancer, or having cutaneous lesions on the head and neck in the past.[12,13]

On the basis of our study, we have found no significant difference between the benign and malignant group with respect to age, gender and duration of swelling with p value 0.386, 0.540 and 0.206 respectively. A study conducted by Metin U et al showed that there was significant higher rate of malignant lesions in males than females with p value 0.002. It was demonstrated that malignancy was higher in age group >40years and significant association of age groups was found with respect to malignancy with p value 0.009. On the basis of this study, significant difference was found between duration and malignancy with p value 0.016.[14]

Any patient with a suspected neck mass and a normal contrast-enhanced neck CT scan has to be evaluated further by an ENT expert. Ancillary testing can be carried out without postponing the cancer investigations.[15,16] On the basis of study conducted by Abraham ZS et al, it was discovered that the proportion of neck masses increased with age, and the overall prevalence of neck masses was 14.1%. The most prevalent anatomical place was the anterior triangle (53.8%). The age group most affected was over 60 years old, and the majority of the neck masses (65.7%) were malignant (P-value 0.000). Squamous cell carcinoma was the most common type of malignant neck mass (54.1%), and the majority of these masses were metastatic nodes from upper aerodigestive tract original malignancies (67.21%).[17]

In addition to saving the doctor time, a methodical approach to lymphadenopathy can provide the correct diagnosis with little discomfort to the patient. Since lymphadenopathy is prevalent, it should be properly recognized and the cause should be identified using a systematic approach. This will help determine the best course of treatment for the patient. The etiology of the condition may usually be determined by history and physical examination thus these should be taken into account throughout the examination. After considering risk factors and constitutional signs, less evident causes can also be diagnosed. A three- to four-week observation period is suitable when the clinical situation suggests a high probability of benign disease and the cause of lymphadenopathy is still unknown. After choosing an excisional biopsy, most suspicious, and easiest-to-access node should preferably be chosen, taking into consideration site-specific variations in diagnostic results. Excisional biopsy is still the preferred diagnostic method even if new methods have improved the sensitivity and specificity of FNAC. To avoid any misdiagnosis, a case including cervical lymphadenopathy must be properly investigated.[18,19] Ultrasonography supersedes the CT and MRI for assessing cervical lymphadenopathy as it is easily available and cost-effective investigation. Malignant lymph nodes appear hypoechoic, without any echogenic hilum owing to coagulation necrosis. Sensitivity of gray scale sonography is very high in differentiating between malignant and reactive lymph nodes.[20]

Since delayed presentation not only results in complications but also burdens the hospital economy. Awareness campaigns must be launched to encourage early referral of such patients with palpable lymph node swelling for appropriate evaluation and urgent treatment as early as possible. Tertiary care hospitals need to make room for these patients so they can be managed on priority basis.

CONCLUSION

On the basis of our study, it has been concluded that frequency of malignancy is high among individuals presenting with palpable lymph node swelling in the neck. Early diagnosis in patients presenting with malignant lymph node swelling has greater impact on the management and prognosis of these patients. Early intervention helps reduce morbidity and mortality, thereby greatly improving the quality of life.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORSHIP AND CONTRIBUTION DECLARATION	
1	**Ahmad Ijlal Qazi:** Concept, design, data collection.
2	**Anees Ur Rehman:** Data analysis, final approval of manuscript.
3	**Rukhsana Tumrani:** Data analysis, manuscript writing.
4	**Afshan Qayum:** Data collection, literature search.
5	**Beenish Fatima:** Data analysis, discussion.
6	**Mehwish Haqdad:** Discussion, proof reading.