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Pattern of neck masses in adult patient in southern region KSA

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ABSTRACT

Background: Many head and neck diseases manifest as neck masses with a wide range of developmental lesions to malignancies. A neck mass can be defined as any abnormal growth or development from the skull base to the level of the clavicle. This retrospective study to assess the distribution of neck masses related to gender, age, pathology, and anatomical location of neck masses in Asir Central Hospital.
Methods: During a 5-year period (2011–2016), the medical records of 158 patients with neck masses were collected from the department of pathology at Asir Central Hospital KSA. The cases were reviewed for data on gender, age, pathology, and the anatomical location. Comparisons between genders, age groups, and tissue origins were performed. We divided the age to 4 categories: from 15 to 30 years, 31 to 45 years, 46 to 60 years, and more than 60 years. All statistical tests were performed with SPSS software. We exclude thyroid, parathyroid and salivary gland masses.
Results: Over a period of 5 years, a total of 158 patients (90 men and 68 women) had neck masses resected for pathological assessments. The age of presentation was ranging from 15 to 84 years. Among the 158 cases, 40.5% developed in (from 15 years to 30 years old), 24.7% developed in (31 to 45 years), 20.9% developed, in (46 to 60 years), and 13.9% developed in age more than 60 years. The histopathological diagnosis of the neck masses were congenital 10.1%, inflammatory 28.5%, benign tumor 5.7% and malignant tumor 55.7%.
Conclusions: The age and location of neck masses are the most important variables. When a neck mass is seen, neoplasms should be considered in older adults inflammatory and congenital masses in children and young patients. Although the history, medical examination and additional diagnostic methods provide important information, the exact diagnosis may only be obtained by histopathological examination.

Keywords: Neck mass, Prevalence, Histopathology

INTRODUCTION

Many head and neck diseases manifest as neck masses with a wide range of from pathologies developmental lesions to malignancies.[1,2] A neck mass can be defined as any abnormal growth or development from the skull base to the level of the clavicle.[3] The approach to neck masses is particularly important as the neck contains 35-50% of all lymph nodes in its lymphatic chain together with many vital organs.[4,5] Uses of a neck mass are generally classified as inflammatory, neoplastic and congenital.[4] Thus, knowledge of the prevalence of the different pathologies in this region is important for the management of patients with neck masses.

Objectives

This retrospective study was done with the objective to assess the distribution of neck masses related to gender, age, pathology, and anatomical location of neck masses in Asir central Hospital.

METHODS

During a 5 year period (2011–2016), medical records of 158 patients with neck masses were collected from the department of pathology at Asir Central Hospital KSA. The cases were reviewed for data on gender, age, the type of origin tissue, the type of lesion, and the anatomical location. Comparison between genders, age groups, and tissue origins were performed. We divided the age to 4 categories: from 15 to 30 years, 31 to 45 years, 46 to 60 years, and more than 60 years. All statistical tests were performed with SPSS software.

Inclusion criteria

Patients with all neck masses underwent excisional or incisional biopsy under local or general anesthesia from 2011 to 2016 and those patients whose receive antibiotic treatment before biopsy.

Exclusion criteria

Patients with thyroid, parathyroid and salivary gland masses, and pediatric patients less than 15 years.

RESULTS

Over a period of 5 years, a total of 158 patients 90 men 57% and 68 women 43% had neck masses resected for pathological assessments (Table 1). The age of presentation was ranging from 15 to 84 years. Among the 158 cases, 40.5% developed in from15 years to 30 years old, 24.7% developed in 31 to 45 years, 20.9% developed in 46 to 60 year, and 13.9% developed in age more than 60 years. The histopathology diagnosis of the neck masses were: congenital 10.1%, inflammatory 28.5%, benign tumor 5.7% and malignant tumor 55.7% (Table 2). In congenital: branchial cleft cyst was the most common congenital mass 10 cases 6.3% (Table 3). In inflammatory lesion: Tuberculosis (TB) the most common inflammatory lesion 23 cases 14.6% (Table 3). In benign tumor the most common benign tumor lipoma 7 cases 4.4% (Table 3). In malignant tumor, the most common malignant tumor Non Hodgkin lymphoma 48 cases 30.4% (Table 3).

Table 1: Sex distribution of neck masses in adult patients.

Sex	Count	Percentage (%)
Male	90	57
Female	68	43

Table 2: Histopathological categorization of neck masses.

Neck masses	Count	Percentage (%)
Congenital	16	10.1
Inflammatory	45	28.5
Benign tumor	9	5.7
Malignant tumor	88	55.7

Table 3: Histopathological distribution of neck masses in adult patients.

Type	Count	Percentage (%)
Non Hodgkin lymphoma	48	30.4
Hodgkin lymphoma	29	18.4
Tuberculosis	23	14.6
Lymphadenitis	18	11.4
Metastatic cancer	11	7
Branchial cleft cyst	10	6.3
Lipoma	7	4.4
Kikushi disease	3	1.9
Carotid body tumor	2	1.3
Thyroglossal duct cyst	2	1.3
Dermoid	2	1.3
Lymphangioma	1	0.6
Hemangioma	1	0.6
Castelmans disease	1	0.6

Regarding age

In branchial cleft cyst 70% were from 15 years to 30 years old, 20% from 31 to 45 years and 10% from 46 to 60 years. In thyroglossal duct cyst 50% from15 years to 30 years old and 50% from 46 years to 60 years old. In dermoid 50% from 15 years to 30 years old and 50% from 46 years to 60 years old. In TB 30.4% from 15 years to 30 years old, 43.5% from 31 to 45 years, 21.7% from 46 to 60 years, and 4.3% in age more than 60 years old. In lymphadenitis 72.2% from 15 years to 30 years old, 11.1% from 31 to 45 years, 11.1% from 46 to 60 years, and 5.6% in age more than 60 years old. In kikushi 100% from 31 to 45 years. In lipoma 14.3%, from 15 years to 30 years old, 57.1% from 31 to 45 years, 14.3% from 46 to 60 years, 14.3% in age more than 60 years old. In carotid body tumor, 100% from 46 to 60 years. In Non-Hodgkin lymphoma, 29.2% from 15 years to 30 years old, 18.8% from 31 to 45 years, 22.9% from 46 to 60 years, 29.2% in age more than 60 years old. In Hodgkin lymphoma, 51.7% from 15 years to 30 years old, 20.7%, from 31 to 45 years, 17.2% from 46 to 60 years, 10.3% in age more than 60 years old. In metastatic cancer, 27.3% from 15 years to 30 years old, 18.2% from 31 to 45 years, 36.4% from 46 to 60 years, 18.2% in age more than 60 years old. In castelmans diasease only one case and it was from 15 years to 30 years old. In hemangioma only one case and it was from15 years to 30 years old. In lymphangioma only one case and it was from 31 to 45 years. From 15 years to 30 years old, 15.6% were congenital, 32.8% inflammatory, 1.6% benign tumor and 50% malignant tumor From 31 to 45 years, 7.7% congenital, 38.5% inflammatory, 10.3% benign tumor and 43.6% malignant tumor. From 46 to 60 years, 9.1% congenital, 21.2% inflammatory, 9.1% benign tumor and 60.6% malignant tumor. In age more than 60 years old, 9.1% inflammatory, 4.5% benign tumor and 86.4% malignant tumor (Table 4).

Regarding site distribution

Right side of neck: 10.3% congenital, 29.5% inflammatory, 6.4% benign tumor and 53.8% malignant tumor. Left side of neck: 5.3% congenital, 28.9% inflammatory, 5.3% benign tumor and 60.5% malignant tumor. Midline: all are congenital (Table 5 and 6).

Table 4: Age distribution of neck masses in adult patients.

Age in years	Congenital (%)	Inflammatory (%)	Benign tumor (%)	Malignant tumor (%)
From 15 to 30	15.6	32.8	1.6	50
From 31 to 45	7.7	38.5	10.3	43.6
From 46 to 60	9.1	21.2	9.1	60.6
More than 60	0.0	9.1	4.5	86.4

Table 5: Site distribution of neck masses in adult patients.

Site distribution	Congenital (%)	Inflammatory (%)	Benign tumor (%)	Malignant tumor (%)
Midline	100	0.0	0.0	0.0
Right	10.3	29.5	6.4	53.8
Left	5.3	28.9	5.3	60.5

Table 6: Site distribution and relation to specific pathology of neck mass.

Pathology of neck mass	Midline (%)	Right (%)	Left (%)
Non Hodgkin lymphoma	0.0	56.3	43.7
Hodgkin lymphoma	0.0	41.4	58.6
Tuberculosis	0.0	52.2	47.8
Lymphadenitis	0.0	50	50
Metastatic cancer	0.0	27.3	72.7
Branchial cleft cyst	0.0	60	40
Lipoma	0.0	57.1	42.9
Kikushi disease	0.0	66.7	33.3
Carotid body tumor	0.0	50	50
Thyroglossal duct cyst	100	0.0	0.0
Dermoid	100	0.0	0.0
Lymphangioma	0.0	100	0.0
Hemangioma	0.0	100	0.0
Castelmans disease	0.0	0.0	100
Total	2.5	49.4	48.1

DISCUSSION

A neck mass is frequently encountered in otolaryngology practice and can be seen at any age group. Many factors play a role in the etiology of neck masses. Ahmad et al studied fine needle aspiration cytology (FNAC) and neck swelling and found that tuberculous lymphadenitis 36% was the commonest diagnosis followed by reactive lymphadenitis 18%, malignant neoplasms 14%, cysts 10%, benign neoplasms 8% and sialadenitis 6% and unsatisfactory 8%.[6] Agrawal et al, they studied cervical neck masses and role of FNAC in central India: it was in total of 280 cases of lymph nodes neck mass: 28.57% reactive lymphoid hyperplasia, 16.07% non-specific lymph adenitis, 25% granulomatous disease, 8.93% as lymphoma, and 21.43% metastasis.[7] Gupta et al they study: in FNAC Head and Neck swellings: 68.22% TB, 27.10% reactive lymphoid hyperplasia, 3.74% metastasis and 0.94% as lymphoma.[8] Sreedevi et al, in their study found: 51.63% reactive lymphoid hyperplasia, 9.15% non-specific lymphadenitis, 27.4% TB, 5.88% as lymphoma, and 5.88% metastasis.[9] Kishor et al, study spectrum of FNAC in palpable head and neck lesions in a tertiary care hospital in India in distribution of various lymph node lesions: 47.36% TB, 35.08% reactive lymphoid hyperplasia, 12.8% non-specific lymphadenitis, 3.5% metastasis and 0.87% lymphoma.[10] In our study the most common masses Non Hodgkin lymphoma 30.4%, then Hodgkin lymphoma 18.4%, TB 14.6%, lymphadenitis 11.4%, metastatic cancer 7%, branchial cleft cyst 6.3%, lipoma 4.4%, kikushi 1.9%, carotid body tumor 1.3%, thyroglossal duct cyst 1.3%, dermoid 1.3%, hemangioma 0.6%, lymphangioma 0.6% and castelmans diasease 0.6%. Regarding sex distribution in our study,

57% male and 43% in female. Ahmad et al found 32% male and 68% in female.[6] In our study we found malignant lesion more common in age more than 60 year 86.4% and no any congenital lesion in this age.

CONCLUSION

The age and location of neck masses are the most important variables. When a neck mass is seen, neoplasms should be considered in older adults. Inflammatory and congenital masses in children and young patients. Although the history, medical examination and additional diagnostic methods provide important information, the exact diagnosis obtained by histopathological examination. In our study the most common masses Non Hodgkin lymphoma, and all midline masses are congenital.

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