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Clinico – pathological assessment of Neck lesions in a tertiary care teaching center of Patna District, Bihar

Dr. Vijay Kumar
Asst. Professor, Department of ENT, ESIC Medical College and Hospital-Bihta, Patna
Corresponding author email: drvijaykumar019@gmail.com

Dr. Asfia Rahman
Senior Resident, Department of ENT, ESIC Medical College and Hospital-Bihta, Patna

Dr. Rohit Anand
Senior Resident, Department of ENT, ESIC Medical College and Hospital-Bihta, Patna

Dr. Arshad Ayub
Asst. Professor., Department of Community & Family Medicine, All India Institute of Medical Sciences, Deoghar

***Abstract*---**Introduction: Neck swelling is a common presentation seen in clinical practice. A wide spectrum of pathological lesions can be presented in this form. It ranges from simple benign lesions to highly malignant ones. An attempt was made to correlate clinical presentation, sociodemographic factors and histopathological diagnosis of such masses. Aims and objectives: To know the incidence of various types of masses of the Neck region & to understand the sociodemographic pattern in different neck masses. Methodology: This was a cross-sectional study and was carried out in the ENT department of tertiary care teaching hospital at Patna. Each patient attending the OPD ENT with complaints of neck swelling underwent a complete examination that included a Otorhinolaryngological evaluation in addition to a full history, socio-demographic details and physical examination. Results: A total of 105 patients were enrolled in the study out of which 60% were females and 40 % were males. Among total cases maximum (31.4%) were cancerous, 25.7% were thyroid lesions, 22.8% were benign and 20% were tuberculous. Young age, female gender and middle socioeconomic class was found to be associated with all the neck masses. Conclusion: It was determined

that all neck swellings were linked to fever, weakness, appetite loss, and hoarseness of voice. All types of swellings were more prevalent in patients under the age of 40. Cancer, thyroid, and tuberculous lesions were associated with women, and middle-class.

***Keywords*---**neck masses, neck swellings, midline swellings.

Introduction

Neck masses are often encountered in clinical Practice in tertiary care hospitals. They are more prevalent in a country like India and other Asian countries compared to the western world. The increased prevalence of neck masses in India can be because of use of tobacco in various forms, poor oro-dental hygiene and viral infections.(1)(2) Proper evaluation and timely diagnosis are a key factor reducing significant morbidity and mortality. Instead, proper diagnoses of neck masses are still a challenge in developing countries. Various imaging modalities like Ultrasonography, CT scan and MRI scan have significant role in evaluation of neck mass. Fine needle aspiration cytology (FNAC) has proved to be an important tool in the way of diagnosis of various neck masses and is possible because of the diagnostic accuracy, minimal disruptive nature of the procedure and high degree of cost effectiveness.

Neck masses can be present in all age groups from adult to paediatric and ranging from congenital to acquired pathology. Regarding aetiology, neck masses can be classified into three main groups: inflammatory or infectious, congenital and neoplastic.(3)(4)(5) Inflammatory neck masses are most commonly reported in paediatrics population whereas malignant neck masses or metastatic deposit from a primary cancer are more commonly found in adult age group specially those having tobacco consuming history. Most malignant neck masses are metastatic nodes from primary cancers in the upper aerodigestive tract.(6)(7)

Early possible evaluation and detection of primary neck mass is important in case of metastatic deposit to intervene appropriate management. The complicated neck structure and challenging differential diagnosis make neck tumors particularly attractive to surgeons. They have a specific anatomic origin and are prevalent in surgical OPD. Every time a surgeon encounters a neck mass, he starts having a number of questions in his mind, such as whether the mass is congenital or acquired, inflamed or not, origin, nature, a primary or secondary lesion, the source of the primary, or whether it could be an occult primary, and what diagnostic techniques and treatments are necessary, etc. These neck tumors are a serious cause for concern as a result of all these questions. To address such questions and fill this gap, this study was planned

Aims and Objectives

To know the incidence of various types of masses of the Neck region.
To understand the sociodemographic pattern in different neck masses.

Methodology

The study period was of 5 years (January 2013 to January 2019). This cross-sectional study was carried out at a tertiary care teaching hospital at Patna with a study population of 105 people. At the ENT department of the Patna Medical College & Hospital in Patna, Bihar, each patient attending the OPD ENT with complaints of neck swelling underwent a complete examination that included a Otorhinolaryngological evaluation in addition to a full history, socio-demographic details and physical examination. To make the diagnosis, the patient had endoscopic operations, investigations such as X-rays, CT scans, and MRIs of the head and neck, FNAC, and a biopsy for the histological research. When necessary, a specific specialist's opinion was obtained. The Histopathology section of the Pathology Department at Patna Medical College & Hospital in Patna, Bihar, received and processed all of the biopsy specimens. All the cases were histopathologically confirmed and then evidence-based interventions were done according to the international clinical protocol.

Statistical analysis

After being carefully cleaned, the data were imported into MS-Excel spreadsheets for analysis. Preliminary data inspection, content analysis, and interpretation were the steps that were taken. This study analyzed epidemiological variables using percentages. Chi square and Fisher's exact test of association were performed for determining any association. A p value of less than 0.05 was considered to be significant.

Results

A total of 105 patients were enrolled in our study out of which 60% were females and 40 % were males. Around 51.5% were from lower socio-economic class and 48.5% belonged to middle socio economic class. Among total cases maximum (31.4%) were cancerous, 25.7% were thyroid lesions, 22.8% were benign and 20% were tuberculous.

Table-1 : Association of final diagnosis with symptoms (N=105)

		FD grouped				
		Benign	Cancerous	Thyroid lesions	Tuberculous	p-Value
Age Category	<40 Years	24	21	24	18	0.001
		100.0%	63.6%	88.9%	85.7%	
	>40 Years	0	12	3	3	
		0.0%	36.4%	11.1%	14.3%	
Gender	Female	9	18	21	15	0.017
		37.5%	54.5%	77.8%	71.4%	
	Male	15	15	6	6	
		62.5%	45.5%	22.2%	28.6%	
Religion	Hindu	24	30	24	18	0.296
		100.0%	90.9%	88.9%	85.7%	

	Muslim	0	3	3	3	
		0.0%	9.1%	11.1%	14.3%	
Socio-economic	Lower	9	24	12	9	0.029
		37.5%	72.7%	44.4%	42.9%	
	Middle	15	9	15	12	
		62.5%	27.3%	55.6%	57.1%	
H/D (ATT/Steroids)	Yes	3	3	6	0	0.107
		12.5%	9.1%	0.0%	0.0%	
	No	21	30	21	21	
		87.5%	90.9%	77.8%	100.0%	
Allergy (Dust/Smoke)	Yes	3	0	12	9	0.000
		12.5%	0.00%	44.4%	42.9%	
	No	21	33	15	12	
		87.5%	100%	55.6%	57.1%	
Addiction (Tobacco)	Yes	6	24	3	3	3.5834
		25%	72.72%	11.11%	14.3%	
	No	18	9	24	18	
		75%	27.28%	88.89%	85.7% 345	

Tenderness was present in the 25% of the benign cases while only 9.1 % of the cancerous cases were tender and none of the thyroid and TB lesions were tender. This association was found to be significant. Most of the tuberculous lesions were significantly associated with Fever (71.4%) while benign and thyroid lesions weren't. Weakness was a complain among most of the cases of Tuberculous lesions (71.4%) while it wasn't there in other lesions (statistically significant). It was also observed that Hoarseness of voice was found only among the cancerous cases and it was also highly significant, similarly most of the TB cases had lack of appetite which wasn't there in other lesions/swellings (p=0.000).

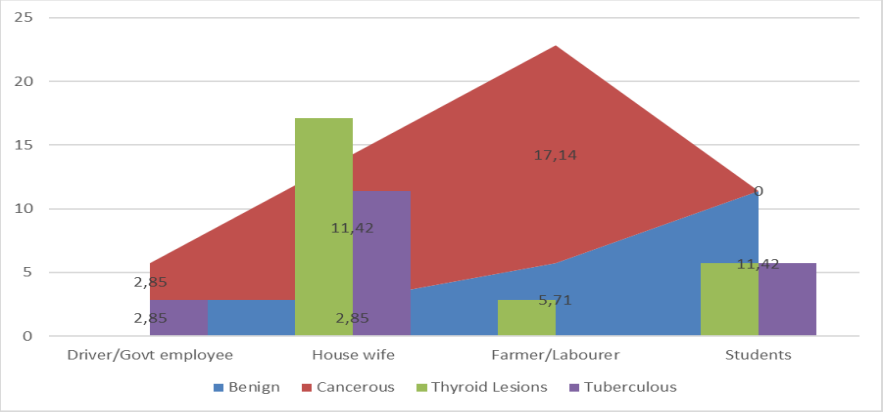
Table-2 : Association of final diagnosis with demographic characteristics (N=105)

Symptoms		FD grouped				
		Benign	Cancerous	Thyroid lesions	Tuberculous	p-Value
Tenderness	NO	18	30	27	21	0.004
		75.0%	90.9%	100.0%	100.0%	
	YES	6	3	0	0	
		25.0%	9.1%	0.0%	0.0%	
Fever	NO	24	30	27	6	0.000
		100.0%	90.9%	100.0%	28.6%	
	YES	0	3	0	15	
		0.0%	9.1%	0.0%	71.4%	
Weakness	NO	24	33	27	6	0.000
		100.0%	100.0%	100.0%	28.6%	
	YES	0	0	0	15	
		0.0%	0.0%	0.0%	71.4%	
Hoarsness of Voice	NO	24	27	27	21	0.003
		100.0%	81.8%	100.0%	100.0%	

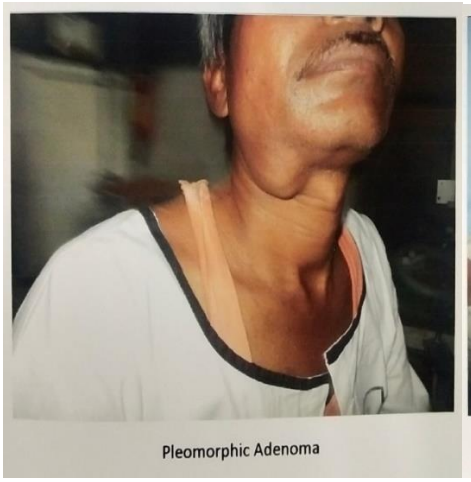
	YES	0	6	0	0	
		0.0%	18.2%	0.0%	0.0%	
Lack of appetite	NO	24	33	27	6	0.000
		100.0%	100.0%	100.0%	28.6%	
	YES	0	0	0	15	
		0.0%	0.0%	0.0%	71.4%	

It was observed that all the benign cases and most of Thyroid (88.9%) and Tuberculous (85.7%) lesions were under 40 years of age while 36.4% of the cancerous lesions were among those above 40 years of age. This association was found to be significant. When it came to gender distribution ,it was observed that Cancerous ,Thyroid and TB lesions , all were more among the female sex as compared to males. This difference was also significant. There was no significant difference observed on the basis of religion. On the basis of socio economic status , it was observed that benign ,thyroid and TB lesions were more prevalent among middle class as compared to the lower class. The history of allergy was high (44.4% & 42.9%) among thyroid and TB lesions respectively (p=0.000) while the differences found on the basis of history of drugs and tobacco addiction weren't statistically significant.

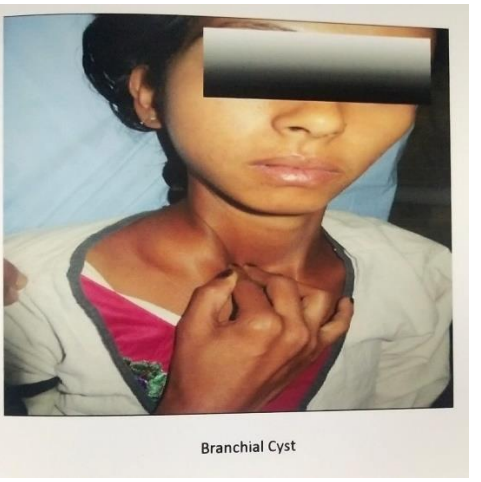
Figure-1 : Distribution of occupation among different neck masses.



The above figure shows the distribution of occupation among all the swelling types. It was observed that cancerous lesions were found among all the occupations except students, while the TB lesions were not found among the farmers/labourers and thyroid lesions weren't found among Drivers/Govt employees.

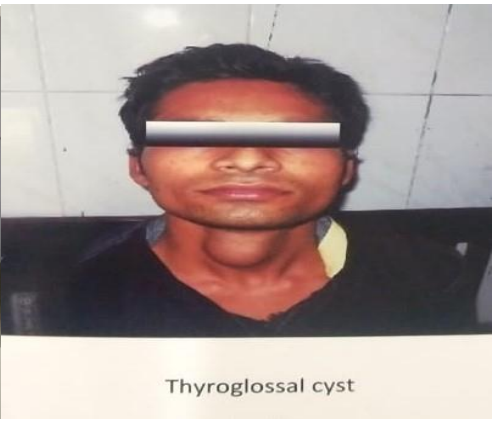


2 a : Pleomorphic adenoma



2 b : Branchial Cyst

2 c : Follicular adenoma



2 d : Thyroglossal Cyst

Figure-2 (a,b,c,d) Showing different types of neck massess encountered during our study

Discussion

Neck node metastases from an unknown primary site are part of the “Cancer of unknown Primary” origin, where the primary tumour may remain unknown for a patient’s lifetime despite thorough diagnostic workup.(8) In our study 31.4 % of the masses were found to be cancerous while a study by popat et al says it to be 27%.(1) The thyroid lesions in our study were 25.71% and similarly it was 24% in popat et al’s study.(1) Some of the studies say that over 90% of neck metastases comprise squamous cell carcinoma (SSC) whereas other malignancies are less common. (9)(10)

Congenital masses are more common in childhood but can grow slowly, persisting into adulthood. Thyroglossal duct cysts, the most common congenital cyst, are midline, adjacent to the hyoid bone, and rise with deglutition. These cysts are normally recognized by five years of age, with 60% diagnosed by 20 years of age.

However, in one autopsy series, thyroglossal duct cysts were present in 7% of adults, although most were not clinically apparent.(11)

In our study also, the thyroid lesions were mostly (89%) present in age group less than 40 years while only 11 % of these lesions were present in age group above 40 years. Studies show that Branchial cleft cysts represent 22% of congenital neck masses.(11) However we couldn't study congenital masses separately in our study. Thyroid pathology accounts for most chronic anterior neck masses, and these masses are often insidious. A diffusely enlarged thyroid gland may be due to Graves disease, Hashimoto thyroiditis, or iodine deficiency, but can be caused by goitrogenic exposures such as lithium.(12) Thyroid nodules are common, with an estimated prevalence of 4% to 7% in adults; only 5% of these are malignant.(13) Contrary to this we found that thyroid lesions were 25.71% of all the neck masses.

Patients may describe a discrete, tender, erythematous mass, which often coincides with recurrent upper respiratory symptoms. Although in our study, most of the benign, cancerous,thyroid and tuberculous lesions were not associated with tenderness. Deshpande AV et al state that In tubercular lymphadenopathy, constitutional symptoms like low grade fever were found in 54% cases followed by anorexia 7.92% and pain in 2.7% cases.(14) These findings were comparable to Eamranod P et al (15) while in our study fever and weakness were present in more than 70% of the tuberculous lesions and 100% of the cases complaining pain.

Nonspecific lymphadenitis patients presented mainly with fever 57.14%, which was associated with sore throat. MM Carr et al proposed that 60-70% of patients who had lymph node enlargement secondary to sore throat also had fever.(16) In our study, all the benign, tuberculous and thyroid lesions were associated with hoarseness of voice. Which is consistent to the findings of many other studies.(3)(17)

Conclusion

It was concluded that Fever, weakness, loss of appetite and hoarseness of voice were all associated with all neck swellings. Most of the neck swellings were non tender. All type of swellings were more common in <40 years age group patients. Cancerous , thyroid and tuberculous lesions were more common in females, middle socio economic class and was not associated with presence of allergy. A further study at a larger scale can be planned to assess the various signs, symptoms and other co-variates of neck masses.

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