



STUDY OF ETIOLOGY AND DEMOGRAPHY OF NECK SWELLINGS IN TERTIARY CARE CENTER OF SOUTH GUJARAT

Otorhinolaryngology

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ABSTRACT

Aim: To evaluate the neck swellings clinically, radiologically and pathologically in order to make early and accurate diagnosis which help in planning the future line of treatment. **Material and Methods:** It was a cross-sectional analytical study carried out over one and half year at tertiary care center which included 134 (72 males and 62 females) patients coming to ENT OPD with complaints of neck swelling. **Result and Conclusion:** The differential diagnosis in the patients presenting with neck mass was extensive and will vary with age and gender. Out of 134, maximum patients were in age group 21-30 years (23.13 %). Most of the swellings were of benign origin which is 121 (90.29%); in which most common swellings in this study were tubercular origin (30.59 %). Maximum patients with malignant neck swellings were present at age of 41-50 years; which are 30% of total malignant swellings.

KEYWORDS

Neck Swelling, Ultrasonography (USG), Fine Needle Aspiration Cytology (FNAC)

INTRODUCTION

Neck swelling is one of the common complaints by patients attending ENT OPD; complex anatomy of neck leads to various differential diagnosis for these patients. Objective neck masses are common in adults but underlying etiology is not easily identifiable [8]. To reach the final diagnosis and start appropriate treatment; proper history, good clinical examination with radiological and pathological assessment of the same helps with diagnosis and early treatment.

While evaluating the neck swelling, patient's age, gender, residence, along with the duration of symptoms and signs, size and site of the swelling, consistency, growth rate, relation to other structure, mobility along with associated symptoms such as pain, fever, weight loss, comorbidities are studies together for better evaluation during clinical assessment and pre-diagnosis of swellings as per clinical judgement. Patients age is important factor; as risk of malignancy increases with age [10]. Neoplastic lesions are more common in developed countries and inflammatory lesions are more commonly occurs in developing or underdeveloped countries [3].

These swellings are further evaluated with radiological diagnostic method like ultrasonography which is most popular as it is noninvasive, quick, easily accessible and relatively cheap method [6,2]. To study the nature of swelling a pathological evaluation done with fine needle aspiration cytology which is also a minimally invasive, accurate, simple, quick and cost-effective method [5,9].

Common causes of neck swellings include enlargement of lymph nodes (lymphoproliferative disorders, inflammatory process or infiltration by metastatic malignant cells), thyroid gland (goiter, thyroiditis, benign and malignant tumors) and various others like thyroglossal cysts, epidermoid cyst, dermoid cyst, lipoma etc. [4].

Material and Methodology

This was a cross-sectional analytical study carried out over one and half year in the department of ENT at a tertiary health center; which included 134 patients coming to ENT OPD with complaints of neck swelling. All patients coming to ENT OPD with complaint of neck swellings were included in the study. Previously operated patients and patients not willing to give consent were excluded from the study.

Detailed clinical history and examination of the local part was done in all the patients coming with complaints of neck swelling; followed by thorough ear, nose and throat examination with general examination done in all patients. Relevant blood examinations like complete blood count, coagulation profile, renal function test, liver function test, urine examination, thyroid function test and chest x-rays were also done when required.

All patients were studied radiologically by doing ultrasonography; which is an imaging modality utilizing high frequency sound, followed by fine needle aspiration cytology, which is minimally invasive, cheap and quick pathological method to diagnose these swellings. After establishing diagnosis; all patients were treated with medical, surgical or both treatments.

RESULT AND DISCUSSION

In this study, thorough clinical examination and relevant investigations were done to establish diagnosis in 134 patients with neck swellings. From our study, we observed the following results according to their demography and etiology based on the clinical, pathological and radiological findings.

Gender Distribution

In this study; 72(53.7%) patients were male and 62(46.3%) were female; with a male to female ratio of 1.6:1. Thus, males were more than females which is similar to the study of Talith Ozdas et al and Adhikari P et al [7, 1].

Age Distribution

In our study, out of 134 patients, 13 (9.70%) patients were there in 0-10 age group, 20 (14.92%) in 11-20 age group, 31(23.13%) in 21-30 age group, 27 (20.14%) in 31-40 age group, 26(19.40%) in 41-50 age group, 8(5.97%) in 51-60 age group, 6(4.47%) in 61-70 age group, 2(1.49%) in 71-80 age group and only 1(0.74%) in 81-90 age group. Thus, the majority of the patients were young adults. Maximum number of patients were in 21-30 years of age group i.e. 31(23.13%); in which 12 were male and 19 were female. This suggest a peak of incidence in the third decade in our population; which is similar to Adhikari P et al and PradiPKumar K et al [1,5] study.

Site of Neck Swellings

In our study, out of 134 patients; 82(61.2%) patients had swelling in the anterior triangle of neck, 49(36.6%) patients had it in the posterior triangle of neck and 3(2.2%) patients had swellings in both triangles. In comparison with Talith Ozdas et al study; 49 (38.6%) patients had swellings in anterior triangle and 8(6.3%) patients had swellings in anterior and posterior compartments both [7]. In a study by PradiPKumar K et al; out of 100 patients, 89 (89%) had swellings in anterior triangle, followed by 11(11%) with swelling in the posterior triangle [5]. This suggests that the majority of patients with neck swellings had swelling in anterior compartment.

Type of Swelling

In our study out of 134, 121 (90.29%) had benign swellings, 10 (7.46%) had malignant swellings and 3 (2.23%) swellings were

inconclusive. This suggest that benign swellings were more as compared to malignant swellings.

Table 1: Type of swellings in comparison to other studies

Study	Benign	Malignant
Present study	121 (90.29%)	10(7.46%)
Adhikari P et al[1]	48(87.27%)	7(12.71%)
Ayshath I et al[4]	139(86.9%)	21(13.1%)
Talith O et al [7]	100(78.7%)	27(21.2%)

Analysis of Benign Neck Swellings

Out of 134 patients, 121 patients had benign neck swellings; in which 62 were male and 59 were female; with male to female ratio of 1.05:1 in our study. Maximum number of patients with benign neck swellings were from 21-30 years of age group, which was 29(23.96%); with 11 males and 18 females. This was followed by the 31-40 years age group; which was 24(19.83%). Out of 121 benign swelling; 19(15.70%) patients had benign tumors, 7(5.78%) patients had cysts and 95(78.51%) patients had inflammatory swellings suggesting that inflammation was the cause for majority of benign neck swellings in the patients in this study.

Table 2: Details of benign neck swellings	
Type	Number of cases
Tumours	
1)Thyroid tumour	14
HPE based:	
Follicular adenoma	1
Multinodular nodule	1
Nodular hyperplasia with lymphocytic thyroiditis	1
Nodular Hashimoto's thyroiditis	1
FNAC based:	
Hyperplastic nodule	1
Nodular lesion	5
Colloid goitre	2
Follicular nodule	2
2)Salivary gland Tumour	2
Pleomorphic adenoma	1
Warthin's tumour	1
3)Lipoma	3
Cysts	
Thyroglossal duct Cyst	2
Sebaceous cyst	1
Keratinous cyst	4
Tubercular lymphadenitis	28
Tubercular Abscess	14
Reactive lymphadenitis	18
Non tuberculous granulomatous lymphadenitis	17
Abscess	14
Sialadenitis	2
Thyroiditis	1
Sialolithiasis	1
Total	121

Analysis of Malignant Swellings

Out of 134 patients with neck swellings, 10 were of malignant origin (7.5% of total neck swellings). Out of 10 patients, a total 8 (80%) were male and 2 (20%) were female with a male to female ratio of 4:1. Maximum patients with malignant origin neck swellings were in the 41-50 years age group [3 patients (30%)].

Details of Malignant Swellings

Out of 10 patients with malignant neck swellings, 2 had malignant nodes with unknown primary while 8 had metastatic neck nodes with known primary. Out of the metastatic nodes with known primary, 6 had primary in oral cavity; 1 had primary in larynx and 1 had primary in lungs. This suggests that oral cavity was the most common site for primary in this study population.

Out of 134 patients, 45 patients were advised surgery and among them 16 patients underwent surgery. Remaining 96 patients were treated by medical management.

CONCLUSION

The neck masses are one of the common complaints at ENT OPD. Most of the swellings were of benign origin. The causes of neck swellings vary with demographic parameters of patients and from our

study we conclude that benign lesions were more common in younger age groups and malignant lesions were more common in older age. Maximum patients with malignant neck swellings were present at 41-50 years of age. We had also concluded that malignant lesions were more common in males as compared to females and thyroid swellings were more common in females. USG was easily available radiological investigation which gives almost all-important information regarding nature and morphology of swellings. FNAC was simple and minimally invasive pathological investigation, gave us speedy and accurate results in patients with neck swellings. Hence, we concluded from the study that clinical examination, Ultrasonography (USG), Fine Needle Aspiration Cytology (FNAC) were helpful for early diagnosis of patients with neck swellings.

Declaration

Conflict of Interest

The authors declare that there is no conflict of interest

Ethical Approval

All procedures performed in the studies involving human participant were in accordance with ethical standards of the institutional research committee and ethical standards.

Informed Consent

The study had been performed after taking consent from the patients.

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REFERENCES

- Adhikari P, Sinha BK, Baskota DK. (2011) Comparison of fine needle aspiration cytology and histopathology in diagnosing cervical lymphadenopathies. *AMJ* 42,97-99
- Afshan Fathima, Shubhi Tyagi, Borlingegowda Viswanatha (2019) The Role of Ultrasonography and Fine Needle Aspiration Cytology in the Diagnosis of Neck Swellings- Our Experience. *Research in Otolaryngology*, Vol. 8 No.1, pp. 1-5
- Boyun Kitlesi, Cerrahi Tedavi, Histoloji, Mycobacterium Tuberculosis (2006) Neck Masses: Retrospective Analysis of 420 cases. *Dicle Tip Dergisi*. Cilt:33, Sayı: 4, (210-214)
- Irfana A, Rai S, Gangadhara Soumayaji KS (2019) Benign Neck swellings: a clinico-radio-pathological study *Int J Otorhinolaryngol Head Neck Surg*. 5(2):285-290
- Khokle P, Garud S, Lahane VJ, Mishra S, Prakash NP (2018) Role of Fine Needle Aspiration Cytology in Evaluation of Neck Masses: Our Experience. *Int J Otorhinolaryngol Clin* 10 (3):99-105
- Kotecha S, Bhatia P, Rout PG (2008) Diagnostic ultrasound in the head and neck region. *Dent update*. 35(8):529-30, 533-4.
- Ozdas T, Ozcan KM, Ozdogan F, cetin MA, Dere H (2014) The correlation between clinical prediagnosis and pathology results in the diagnosis of neck masses. *Indian J Otolaryngol Head Neck Surg*. 66(3):237-40
- Pynnönen MA, Gillespie MB, Roman B et al (2017) Clinical Practice Guideline: Evaluation of the Neck Mass in Adults. *Otolaryngol Head Neck Surg*. 157(2_suppl):S1-S30
- Rai A, Chatterji P (2020) Clinical Swellings and Their Correlation with Pathological Findings in a Tertiary Care Centre in Western Uttar Pradesh. *Ann. Int. Med. Den. Res*. 6(2):EN01-EN05.
- Schwetschenau E, Kelly DJ (2002) The adult neck mass. *Am Fam Physician* 1;66(5):831-8