

Original Research Article

Study of benign neck swellings of anterior neck triangle at a tertiary care centre

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ABSTRACT

Background: Tumors of the neck are interesting to surgeons especially because of the complex neck anatomy and difficult differential diagnosis. The aim is to study different types of neck swellings i.e. thyroid swelling, salivary gland swelling, other neck swellings such as thyroglossal cyst, branchial cyst, lymphangioma and also the miscellaneous and rare lumps in the neck. The study also discusses their age and sex-wise distribution, clinical features, presentation, diagnostic modalities and treatment.

Methods: This is a prospective study, conducted at our institute Government Medical College, Latur from June 2017 to May 2018 for a duration of one year.

Results: A total of 57 patients were studied during this period. Out of the 57 patients, 47 of them were midline swellings (82.45%) and 10 among them were lateral neck swellings (17.55%). People over a wide range of age group between 5-60 years were affected. Midline neck swelling were more common than lateral neck swellings.

Conclusions: Among the midline benign neck swellings, thyroid swelling was found to be the commonest followed by thyroglossal cyst. Thyroid swellings occur more commonly in the females than males. Ultrasound guided FNAC is the most common, effective and safe investigation that aids in the diagnosis. Treatment of choice for benign, non-inflammatory and non-malignant neck swelling is mostly surgical excision rather than medical management.

Keywords: Neck mass, Benign, Surgical management

INTRODUCTION

Neck masses are a relatively common head and neck problem. There are usually no associated symptoms besides the recognition of a lump noticed incidentally on palpation and cosmetic appearance with increase in size of swelling over a duration or noticed by another individual. Two most common methods of classifying neck masses are according to site of lesion and according to its etiology. Neck masses may be benign or malignant. The most common benign neck masses are thyroid swellings and those of the salivary gland. Less common pathologies presenting as neck swelling are from thyroglossal cysts, branchial cleft cyst and lymphatic

malformation. Lumps may sometime also be classified in relation to triangles of neck.^{1,2}

Tumors of neck are interesting to surgeons especially because of complex neck anatomy and difficult differential diagnosis. They arise from definite anatomic structures and are very common in the out-patient department. Every time a surgeon sees a neck mass, he has several questions in his mind like, whether it is congenital or acquired, inflammatory or non-inflammatory; tissue of origin; benign or malignant; primary or secondary lesion; if secondary, then source of primary; or could it be occult primary and what are the required diagnostic tools and treatment etc.³ The differential diagnosis in a patient presenting with neck

mass is often extensive and will vary with age these neck masses are evaluated by a detailed history, clinical examination and investigation like FNAC, USG NECK, CT NECK and excisional biopsy. Clinical examination of neck has false positive results between 20-30% and false negative rates ranging from 30-40%.^{4,5}

The aim of this study is to study the clinical spectrum of the neck masses and to study different types of neck masses including thyroid swellings and other relations with age and sex; their clinical features, presentation, and diagnostic modalities and treatment according to the diagnosis.

METHODS

A prospective study was conducted at a tertiary care center Government Medical College, Latur from June 2017 to May 2018. All patients attending the ENT OPD with neck swelling including thyroid and salivary gland swellings were included in this study. All Patients were evaluated starting with clinical history and examinations. A provisional diagnosis was established and further investigations in the form of Ultrasonography, USG guided fine needle aspiration cytology, complete blood count, blood grouping etc. were carried out on each patient. In some cases special investigations like CT scan neck and MRI neck were also done. After coming to a final diagnosis, surgical excision was the modality of treatment preferred in most cases with all masses sent for histopathological examination. All statistical data was calculated using EPI Info (version 7.2).

RESULTS

A total of 57 patients were included in the study. Out of them 82.45% were midline and 17.55% were lateral neck masses. People in the range of 5-60 years were affected. Midline neck lesions were more common than lateral neck swellings. Among the various neck masses, thyroid swelling is the most common midline benign neck swelling. It is more common in females as compared to the males and occurring more frequently during the 3rd to 5th decade. Among the congenital anomalies, the most common neck swelling is the thyroglossal cyst. It is seen in the 1st decade of life.

Treatment modalities

Most of the benign neck swelling after appropriate investigations like USG, USG guided FNAC, CT, MRI neck, are managed by surgical excision of these neck mass rather than medical management For thyroid gland swellings, according to involvement of lobe we do hemi thyroidectomy or total thyroidectomy and for salivary gland swelling, excision of the gland is the treatment of choice. For branchial cyst, surgical excision of branchial cyst and for thyroglossal cyst, sistrunk operation is the preferred surgery modality.

Table 1: Relative prevalence of midline and lateral neck swellings.

Swellings	No. of cases	Percentage (%)
Midline	47	82.45
Lateral	10	17.55
Total	57	100

Table 2: Different midline neck swellings.

Midline neck swelling	No. of cases	Percentage (%)
Thyroid	35	74.46
Thyroglossal cyst	8	17.02
Ranula	2	4.25
Epidermal cyst	2	4.25
Total	47	100

Table 3: Different lateral neck swellings.

Lateral neck swelling	No. of cases	Percentage (%)
Salivary gland tumor	5	50
Lymphangioma	2	20
Epidermal cyst	1	10
Sebaceous cyst	1	10
Branchial cyst	1	10
Total	10	100

Table 4: Different anatomical neck swellings.

1. Midline neck swelling	Upper-midline (sub-mental region)	1. ranula 2. epidermal cyst
	Mid midline	1. Thyroid swelling 2. Thyroglossal cyst
2. Lateral neck swelling	Submandibular triangle	1. Submandibular sialoadenitis 2. lymphangioma 3. epidermal cyst
	Carotid triangle	Branchial cyst

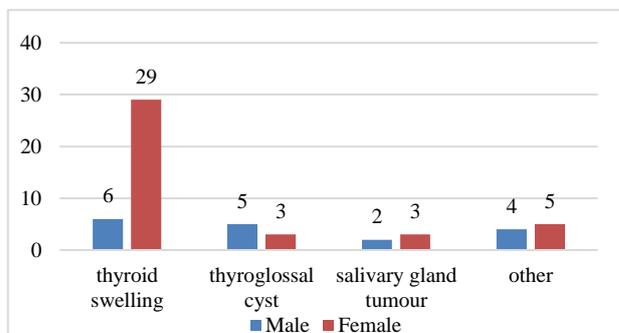


Figure 1: Sex distribution in patients with clinical findings.

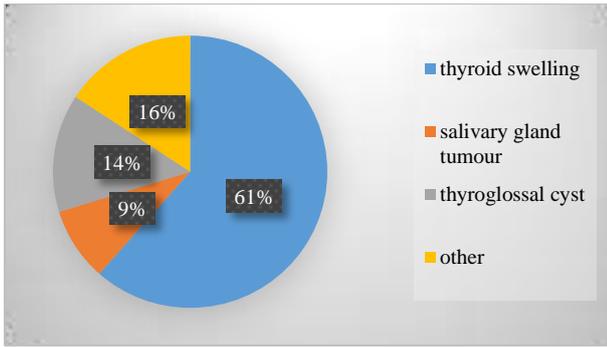


Figure 2: Different neck swellings.



Figure 3: Patient having right lateral neck mass confirmed later on HPR as branchial cyst.



Figure 4: Patient having midline neck swelling most probably thyroid swelling.



Figure 5: Patient showing sublingual swelling most probably ranula.



Figure 6: Sagittal section of contrast enhanced CT of neck showing branchial cyst.



Figure 7: Saggital section of MRI showing epidermal cyst in left pyriform fossa.

DISCUSSION

Neck masses are very frequently encountered in the outpatient department at a hospital and offer a diagnostic challenge for the surgeon. Thyroid mass especially colloid goitre is the most frequently encountered neck mass. Patient history and a physical examination are fundamental to making an early and correct diagnosis.

Ultrasonography is very useful in detecting the site, extent, consistency and relationship of neck swellings to adjacent structures. Ultrasonography is very helpful in differentiating between solid and cystic neck swellings. It also differentiates between benign and malignant lesions of salivary glands and lymph nodes.

USG guided Fine needle aspiration cytology is simple, quick and cost effective method to diagnose superficial masses in the neck. The technique is performed mostly in the outpatient department, the disadvantage being minimal trauma to the patient.⁶⁻⁸ It is always beneficial to differentiate a benign from malignant pathology as it greatly influences the planned treatment. It can be both diagnostic and therapeutic in cystic swellings.⁹ But there are some limitations of FNAC in the neck region that can be encountered. They are as follows: difficulty in the diagnosis and sub classification of lymphoma, distinguishing colloid goitre from follicular adenoma, differentiation of colloid goitre from macro follicular papillary carcinoma, distinguishing between thyroid adenoma from early follicular carcinoma.

The most common congenital lesions found in the pediatric population are thyroglossal duct cyst and branchial cleft cysts.¹⁰ Irani et al study showed 24.2% of children had branchial cyst and 9% had thyroglossal duct cysts. As branchial cleft cysts are typically located in the submandibular region, and thyroglossal cyst are usually located in the midline in infrahyoid region. Hudise et al study showed most common congenital mass was thyroglossal cyst 24.2% then branchial cleft cyst 8.1%, then lymphangioma 6.5% and dermoid 1.6% and inflammatory 33.9%.

In our study most common congenital neck mass are thyroglossal cyst (14%) and then dermoid cyst (7%) then lymphangioma (3.5%) and then branchial cleft cyst (1.7%).

Goyal et al diagnosed the different types of cysts out of total head neck swelling because these cysts are commonly present in head neck region.¹¹ In their study 100 patients of different cystic neck swelling were studied over a period of five years from 2008-2013 to compare the finding with clinical diagnosis, FNAC and histopathological report for diagnostic reliability. Their study found that simple clinical examination followed by FNAC and histopathology is simple, quick, inexpensive and minimally invasive technique to diagnose different types of head and neck swelling. In their study, out of different head and neck cystic swellings thyroglossal cyst was most common followed by dermoid cyst.¹²⁻¹⁴

In our study out of the thyroid masses, colloid goitre (82.8%) was most common followed by follicular adenoma (14.2%) followed by thyroiditis (2.8%). This is consistent with study by Marvin et al.¹⁵ Out of the salivary gland masses, pleomorphic adenoma (60%) of parotid was the most common followed by submandibular gland sialoadenitis (40%) This is consistent with the study by John et al.¹⁶

Most common benign lesions are found in thyroid, this is consistent with the study of Dean DS et al.¹⁷ Among the thyroid masses, colloid goitre, thyroiditis and follicular

adenoma were more common in females and young adults.¹⁸

In most of the other cases, which consist of cystic hygroma, ganglioneuroma, vascular malformation, sclerosing hemangioma, branchial cyst, computed tomography give a useful idea and anatomical relationship of the masses and help to plan surgical treatment. Deborah L considered computed tomography as an excellent means of evaluating patients with neck masses.¹⁹ There are a few indications for CT scan for benign neck masses. They are: (1) If tumor is nearer to the carotid triangle. (2) Large thyroid nodule causing compression of trachea.

MRI is also done in some special benign neck swelling such as lymphangioma, epidermal cyst and branchial cyst.

CONCLUSION

From our present study, it can be concluded that Thyroid predominated midline benign neck swellings were found to be the commonest, followed by thyroglossal cyst. Thyroid swellings are more common in the females and young adult. USG guided FNAC was the most common, effective and safe investigation. Treatment of choice for benign, non-inflammatory and non-malignant neck masses is mostly surgical excision.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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