



**ORIGINAL RESEARCH PAPER**

**ENT**

**A CLINICAL STUDY OF BENIGN NECK SWELLINGS IN ADULTS AND ITS MANAGEMENT**

**KEY WORDS:** Neck swelling, surgical excision

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**ABSTRACT**

**Background:** Swellings of the neck are interesting to surgeons especially because of the complex neck anatomy and difficult differential diagnosis. Diagnosis of neck swelling is always been very difficult and challenging. The aim is to study the incidence of different type of neck swellings in adult age group and also to discuss their age and sex-wise distribution, clinical features, presentation, diagnostic modalities and treatment.

**Methods:** This is a prospective study, conducted at Department of ENT, Gauhati Medical College and Hospital from 1<sup>st</sup> July 2017 to 30<sup>th</sup> June 2018 for a duration of 1 year.

**Results:** A total of 100 cases were studied during this period. Out of 100 cases, thyroid swelling (40%), salivary gland swelling (23%) and tuberculosis (20%) was found. People over a wide range of age group between 18-60 years were affected.

**Conclusions:** Thyroid swelling was found to be the commonest followed by salivary gland swelling. Thyroid swelling occur most commonly in females than males. In all the cases treatment of choice mostly surgical excision.

**Introduction:**

Neck swelling is one of the most common presentation encountered by Otolaryngologist. Because of the highly complex anatomy and physiology of neck, diseases manifesting as neck swelling may be discussed from several different angles. Disorder in respiration, deglutition and sensation are some common symptoms run through most of these diseases. In adult age group, neck swelling solitary or multiple are caused by a variety of medical conditions and may vary from simple nonspecific inflammatory disorders to malignant lesions. It may be congenital or acquired, inflammatory or non-inflammatory; benign or malignant; primary or secondary<sup>[1]</sup>. The most common benign neck swellings are thyroid swelling, salivary gland swelling and those arising from tuberculosis. Less common pathologies presenting as neck swelling are from thyroglossal cysts, branchial cleft cyst and lymphatic malformation. The possibilities are varied from etiological, pathological, and prognostic point of view. This is the most accessible region for the surgeon, as swelling can be easily palpated in the neck. Neck swellings in adults are accurately diagnosed with a careful history, physical examination, accompanied by necessary blood tests, serological tests, radiological evaluation, FNAC, and histopathological examination.

The management of neck swelling in an adult is challenging in terms of both diagnosis and treatment.

**AIMS AND OBJECTIVES:**

- 1) To know the incidence of different type of neck swellings in adult age group.
- 2) To discuss their age and sex-wise distribution, clinical features, presentation.
- 3) To know the diagnostic modalities and treatment according to the diagnosis.

**MATERIALS AND METHOD:**

A prospective study was conducted at ENT Department, Gauhati Medical College & Hospital from 1<sup>st</sup> July 2017 to 30<sup>th</sup> June 2018 for a duration of 1 year.

**Inclusion Criteria:**

- Adult patients with neck swellings.

**Exclusion Criteria:**

- Acute inflammatory lesions were excluded from the study.
- Patients less than 18 years.
- Patients who are not willing to take part in the study.

All patients were evaluated starting with a detailed history and clinical examinations. A provisional diagnosis was established and further investigations in the form of USG, USG guided fine needle aspiration cytology, complete blood count 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, surgery was carried out on the patients on whom it was indicated. Some patients were treated with antibiotics and then subjected to surgery. Diagnosis was confirmed by histopathological examination. These patients were observed after the surgery in the ENT ward for a week and later followed up at 2 weeks and 1 month to look out for post operative complications. These patients were later followed up at 3 months and some 6 months also to assess the outcome of the treatment.

**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 swellings rather than medical management. For thyroid gland swellings, according to involvement of lobe we did lobectomy, hemithyroidectomy, near total or total thyroidectomy and for salivary gland swelling, excision of the gland is the treatment of choice. For Tuberculosis after confirmation by excision, Anti Tubercular Treatment (ATT) started. For vascular tumour, branchial cyst, neurogenic tumour, dermoid cyst surgical excision done and for thyroglossal cyst, sistrunk operation is the preferred surgery modality.

**RESULTS:**

A total of 100 patients were included in the study. Out of them 35% were males and 65% were females. People in the age range of 18-60 years were affected. A total of 55 cases (55%) were present in the age group of 3<sup>rd</sup> to 5<sup>th</sup> decade. Among the various neck swellings, thyroid swelling is the most common neck swelling (40 cases). It is more common in females (30 cases) as compared to the males (10 cases) and occurring more frequently during the 3<sup>rd</sup> to 5<sup>th</sup> decade (24 cases).

**Table-1: Distribution Of Patients According To Their Age**

Age Group (yrs)	Number of cases	Percentage (%)
18-30	38	38%
31-45	55	55%
46-60	7	7%

Table-1 shows that out of 100 benign neck swelling cases, highest number 55 cases were found in (31-45) years followed by (18-30) years 38 cases.

**Table-2: Distribution Of Patients According To Their Sex**

Sex	Number of cases	Percentage (%)
Male	35	35%
Female	65	65%

Table-2 shows that benign neck swelling were more common in female (65%) than male (35%). The Male Female ratio is 1:1.86.

**Table-3: Distribution Of Diseases By Histopathological Diagnosis**

Diseases	Number of patients
Thyroid swelling (Benign)	40
Salivary gland swelling (Benign)	23
Tuberculosis	20
Vascular tumor	6
Thyroglossal cyst	5
Branchial cyst	3
Neurogenic tumor	2
Dermoid cyst	1

Out of 100 cases HPE showed maximum patients were present in the benign thyroid swelling group (40 cases), followed by benign salivary gland tumour (23 cases), tuberculosis (20 cases), vascular tumor (6 cases), thyroglossal cyst (5 cases), branchial cyst (3 cases), neurogenic tumor (2 cases) and 1 case of dermoid cyst.

**Table-4: Age Incidence (Thyroid swelling)**

Age Group(yrs)	Number of cases	Percentage
18-30	11	27.5%
31-45	24	60%
46-60	5	12.5%

In present study maximum incidence of patients present in the age group of 31-45yrs (60%) followed by 18-30yrs (27.5%).

**Table-5: Sex Incidence (Thyroid Swelling)**

Sex	Number of cases	Percentage
Male	10	25%
Female	30	75%

In this study females are commonly affected than males. Male female sex ratio is 1:3.

**Table-6: Incidence Of FNAC Finding In Thyroid Swelling**

Cytology	Number of patients	Percentage
Colloid goitre	25	62.5%
Thyroid adenoma	8	20%
Nodular Goitre	2	5%
Thyroid cyst	5	12.5%

In this series, colloid goitre 62.5% was the commonest FNAC finding, followed by thyroid adenoma in about 20%.

**Table-7: Different Treatment Option:**

Type of surgery	No of patients	Percentage
Lobectomy	5	12.5%
Nodulectomy	3	7.5%
Hemithyroidectomy	25	62.5%
Near total thyroidectomy	3	7.5%

Sub total thyroidectomy	4	10%
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In this series hemithyroidectomy 62.5% was the most commonly done procedure followed by lobectomy 12.5%.

**Table-8: Distribution Of Salivary Gland Swelling**

Age group (yrs)	Number of patients	
	Parotid	Submandibular
18-30	3	2
31-45	11	5
46-60	2	0

In this study parotid is the most commonly affected followed by submandibular gland. Most of the salivary glands were between 31-45 years.

**Table-9: Age Incidence (tuberculosis)**

Age group (yrs)	No of patients	Percentage
18-30	11	55%
31-45	9	45%
46-60	0	0

In this series maximum number of cases 11(55%) were present in the age group of 18-30yrs followed by 31-45yrs, 9 cases(45%).

**Table-10: Lymph Nodes (Tubercular)**

No. of lymph nodes	No. of cases	Percentage
Single	14	70%
Multiple	6	30%
Site of lymph node		
Unilateral	17	85%
Bilateral	3	15%
Groups involved		
Upper deep cervical	12	60%
Submandibular	2	10%
Posterior triangle	6	30%
Submental	0	0

It is evident that unilateral involvement is more than bilateral and upper deep cervical chain involvement is more followed by posterior triangle group of lymph nodes.

**Table-11: Age Incidence (Thyroglossal Cyst)**

Age group (yrs)	No of patients	Percentage
18-30	4	80%
31-45	1	20%
46-60	0	0

In this study maximum incidence of 80% were found in the age of 18-30yrs group.

**Table-12: Age Incidence ( Branchial Cyst)**

Age group (yrs)	No of patients	Percentage
18-30	3	100%
31-45	0	0
46-60	0	0

In this study all 3 cases were present in the age group of 18-30yrs.

**Images:**



**Pic-1: Diffuse thyroid swelling (colloid goitre)**



**Pic-2: Pleomorphic Adenoma Of Left Parotid Gland**



**Pic-3: Midline Thyroglossal Cyst**



**Pic-4: Lt sided Branchial cyst with presence of sinus**

**DISCUSSION:**

Neck swellings are very frequently encountered in the outpatient department at a hospital and offer a diagnostic challenge for the surgeon. 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<sup>[2-4]</sup>. 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<sup>[5]</sup>.

In our study thyroid swelling is the most common cause of neck swelling in adults. In the benign lesions, maximum incidence was in the age group of 31-45 years (24 cases) followed by that in the 18-30 years (11 cases) and in the age group of 45-60 years (5 cases). Similar results were observed by Psarras et al. (1972), Ananthakrishnan et al. (1993), Sengupta et al. (2014)<sup>[6,7,8]</sup>. In our series of 40 benign thyroid swelling, 30 were female and 10 were male with a sex incidence of 75% females and 25% males in the ratio 3:1. Ananthakrishnan et al. (1993) observed a ratio of 3:1 between females and males in 503 patients<sup>[7]</sup>.

Thyroid swelling especially colloid goitre is the most frequently encountered neck swelling. On FNAC colloid goitre was the commonest benign pathology in 25 cases (62.5%) followed by thyroid adenoma 20%, thyroid cyst 12.5%, nodular goitre 2%. Gharib et al. (1994) concluded that fine needle aspiration cytology is the procedure of choice for the diagnosis of solitary thyroid nodule<sup>[9]</sup>.

Out of all the cases 62.5% (25 cases) underwent hemithyroidectomy, 5 cases (12.5%) lobectomy, 4 cases (10%) subtotal thyroidectomy, 3 cases (7.5%) each underwent nodulectomy and near total thyroidectomy. Similar reports were observed by Sunkara A et al. (2009) and Damayanthi B S et al (2018)<sup>[10,11]</sup>.

Parotid and submandibular gland constitutes 23% (23cases). Most of the salivary glands were between 31-45 years. According to Batsakis JG (1979), salivary gland tumours were usually found around the age of 45, but can be found in younger age<sup>[12]</sup>. In the present study, 16% of the cases encountered were pleomorphic adenoma of the parotid gland, 5% of the cases were pleomorphic adenoma of the submandibular gland and 2% were submandibular sialolithiasis. This is consistent with the study by John et al<sup>[13]</sup>.

In Tuberculosis regarding lymph node, we have found from this study that most of the lymph nodes were single (70%) and 85% were unilateral. Jones and Campbell (1962) in their study found 94% nodes unilateral<sup>[14]</sup>.

In our study most of the cases of thyroglossal cyst were between 18-30 years. According to Ellis PD et al. (1977) thyroglossal cysts occur equally in men and women and usually noted in children, although they may present at any age<sup>[15]</sup>. All the thyroglossal cyst swellings (5 cases, 100%) were in the midline which is nearly similar to the findings of Maran (2000) who found 90% of cases in midline and 10% lateral swelling<sup>[16]</sup>.

In our study most of the cases of branchial cyst were between 18-30 years of age. Camilleri et al (1990) said that branchial cyst may occur at any range between 16-69 years<sup>[17]</sup>. Dabholkar, Patole, Seth (2003), they found that branchial cysts are usually evident in childhood though they may be found at any age<sup>[18]</sup>. In our series 2 cases presented with neurogenic tumour. Both the patients were females. These tallies with Scott and Brown and also Gilmer-Hill et al<sup>[19,20]</sup>.

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 swellings and help to plan surgical treatment. Deborah L considered computed tomography as an excellent means of evaluating patients with neck swellings<sup>[21]</sup>.

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

**CONCLUSION:**

From our present study, it is evident that benign neck swellings form a wide spectrum of lesions ranging from thyroid swelling, salivary gland tumour, tuberculosis, vascular tumours (haemangioma, lymphangioma), thyroglossal cyst, branchial cyst, neurogenic tumour and dermoid cyst. Thyroid swelling is the most common benign neck swellings found in this study and are more common in the females and young adults. 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.

This study has approval letter from institutional ethical committee.

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