

Frequency of Neck Swellings in Patients Coming for Dental Check-up

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ABSTRACT:

Objective: To assess the frequency of midline swellings in the neck.

Materials and Methods: A prospective survey was conducted on 150 patients (males and females) who came in for a dental check-up at Altamash Institute of Dental Medicine from 1st June to 1st September 2015. Permission was obtained from ethical committee and verbal informed consent was taken from patients/their attendants. Selection of the subjects for the study was done after evaluation of the case history of each subject and clinical examination. Patients with 20 to 70 years of age were included in the study. Their name, age, gender, general and local description of the midline swelling which included site, size, shape, color, tenderness, temperature and consistency were recorded in the performa. Data analysis was done by SPSS version 13.0.

Results: Multi-nodular goitre was the most common form of neck swelling found in 34 patients. Women of middle aged group (31-49) followed by women of younger age group (20-30) were affected more. In all age groups only T3 was increased while the level of TSH and T4 was normal indicating swellings to be of thyroid in origin. 2 patients had enlarged cervical lymph nodes.

Conclusion: The frequency of multinodular goiter was found to be 94.4% and females of middle age group were the most affected ones.

Keywords: Neck swellings, Midline, Thyroid, Goiter, Multinodular

INTRODUCTION:

There are numerous regions within the neck where a swelling can occur. The presence of lymph nodes (a)submental(b)submandibular (c)pre-auricular (d)post-auricular (e)cervical chain and the subsequent swelling of these lymph nodes (lymphadenopathy) mainly due to infective causes (bacterial,viral,fungal) and non infective causes (malignancy and drug related) is a common cause of neck swelling. When making a provisional diagnosis for neck swellings several points are to be considered such as site (lateral or midline),size, shape, color,temperature,tenderness and consistency etc. About 50% of the neck swellings are thyroid swellings or goiter.¹ These thyroid swellings could be caused by adverse drug reactions, has hashimoto's thyroiditis, pituitary disease, grave's disease, thyroid cancer and benign thyroid neoplasms. Other swellings are of

congenital, developmental, infective, salivary gland diseases, neurogenic and parapharyngeal space tumours. They are classified into midline neck swellings and lateral neck swellings. The midline neck swellings include thyroglossal duct cyst/ thyroglossal duct sinus, sublingual dermoid cyst/ dermoid cyst, plunging ranula, thyroid swelling at isthmus, subhyoid bursa, prelaryngeal lymph nodes etc. Whereas the lateral neck swellings include lymph node enlargement due to non-specific causes, bacterial or viral infections , neoplastic, metastatic ,lymphangiomas / cystic hygroma, branchial cyst/ branchial sinus, salivary gland swelling- parotid swelling, submandibular gland swelling, lipoma, sebaceous cyst laryngocele / pharyngeal pouches, Carotid body tumour/ schwannoma.^{2,3}

It has been documented that incidence of thyroid lesions is highest in 104 cases (52%) than other lesions in head and neck regions.⁴ Overall, incidence of thyroid lesions is said to be proportionately more in females (84.61%).⁵ Hyperthyroidism and hypothyroidism may be treated with drugs and or surgery. The type of treatment being determined by the form of thyroid disease, the age of the patient, the size of the goiter and the presence of coexisting conditions.^{6,7} Most patients with a Thyroglossal duct cyst present with asymptomatic masses in the midline of the neck. The literature reports that most of these lesions occur in patients younger than 30 years of age.^{7,8,9}

The purpose of this study was to collect data in a sample of a Pakistani population so as to evaluate the frequency of midline neck swellings in patients coming in for a general check-up at a private dental hospital and also to evaluate the site, size, shape, temperature, tenderness, consistency and color of the swelling. The review of clinical characteristics of neck swellings and their treatment will help in decision making in daily medical and surgical practice.

MATERIALS AND METHODS:

In this prospective study patients were selected from the dental outpatient department at Altamash Institute of Dental Medicine. Selection of the subjects for the

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study was done after evaluation of the case history of each subject and clinical examination. All patients above 20 years of age and below 70 years of age were included. Patient characteristics like name, age, gender in general and local description of the midline swelling which included site, size shape, color, tenderness, temperature and consistency were recorded in a performa. The study was approved by ethics committee of Altamash Institute of Dental Medicine. We analyzed the incidence of midline neck swellings and the existing factors associated with the swelling.

RESULTS:

Out of 150 patients, 36 patients came in with a mid-line neck swelling. Most of them were women. Multi-nodular goitre was mostly observed in middle age group that is in women with age range of 31-49 years as compared to women with age range 20-30 years and 50-60 years (Table 1). However on the basis of percentage multi nodular goitre was found to be more common in old age group and less common in middle age group. Multi-nodular goitre was more common in our women (94.4%) as compared to simple goiter. In all age groups only T3

was increased while the level of TSH and T4 was normal. In age group 20-30 years there was no other comorbidity. While in other age groups hypertension was present in all patients with 50-60 years, 5 years, while patients in 31-49 years and 3 patients in >60 years. While 4 patients in 31-49 years age group and 1 in > 60 years had type 2 diabetes. On local examination, the characteristics of swellings were evaluated (Table 2). 2 patients had enlarged cervical lymph nodes.

DISCUSSION:

When examining a patient with a neck mass, the physician's first consideration is the patient's age group. The incidence of congenital, inflammatory and neoplastic disease are the three categories in any adult age group.¹⁰ A review of associated medical conditions and previous treatments is useful in narrowing the differential diagnosis and formulating an appropriate treatment plan.¹¹ Initial investigation includes taking the complete patient history along with the size of the mass, sex, socioeconomic status and lifestyle changes which includes smoking, tobacco use, alcohol consumption and dietary habits to accurately diagnose the patient on a clinical level. Other clinical investigations would be to look out for fever, sore throat, upper respiratory tract infections and changes in voice quality and hoarseness. History and physical examination can then further conclude whether the neck swelling is congenital, infective or neoplastic.^{12,13} In our patients there was no hoarseness and only 3 patients related the onset of swelling with fever and respiratory tract infection.

Emphasis on location, mobility and consistency of the neck mass can often place the mass within a general etiologic grouping, such as vascular, salivary, nodal/inflammatory, congenital or neoplastic.¹⁴ A single dominant or solitary nodule is more likely to represent carcinoma than a single nodule with a multinodular gland.^{15,16,17} Lumps of less than three weeks' duration are most likely due to a self-limiting infection and do not require further investigation.¹⁸ Confirmation can only be done through investigations which include biochemical tests, Fine Needle Aspiration Cytology (FNAC), CT scan, endos-copy and biopsy for sample testing. By combining the relevant clinical expertise with appropriate investigations, definitive diagnosis of the lump on an out-patient basis could be diagnosed in 96% of patients.¹⁹

Midline neck swellings consist of swelling related to thyroid, parathyroid, larynx etc and or neurofibroma and haemangioma.²⁰ Thyroid nodules are most common in women and individuals who receive head and neck irradiation at a young age. The prevalence of thyroid nodules in the general population varies depending on the diagnostic modalities used with estimates ranging from 3-5% by palpation, 30-40% by ultrasound and 40-50% by autopsy. Approximately 4% of thyroid nodules are cancerous.²¹ Our patients were exposed to palpation and biochemical examination. Out of 36 patients 34 patients had multi nodular goitre and in all age groups only T3 was increased while the level of TSH and T4

Table 1
Distribution according to age and gender

Age Group (Years)	No. of patients affected	Percentage Involved (%)	Gender
20-30	8	25%	Females
31-49	19	52%	Females
50-60	5	16%	Males
>60	4	1.2%	Males

Table: 2
Characteristics of Swelling

Characteristics	No. of patients N=36	Percentage (%)
Size		
3 cm	6	16.6%
4 cm	8	22.22 %
More than 5cm	22	61%
Skin color with red hue	36	100%
Rounded shape	36	100%
Tenderness		
Present	5	13.88%
Absent	31	86.1%
Temperature		
Raised	15	41.66%
Not raised	21	58.33%
Consistency		
Soft	34	94.44%
Hard	2	5.55%
Mobility		
Present	28	77.77%
Absent	8	22.22%
Nodules		
Single	2	5.55%
Multiple	34	94.44%

was normal.²²

It is common in developing countries where the population is iodine-deficient. This iodine deficiency can cause goitre with nodules.²³ Risk factors are increasing age and female gender.^{24, 25}

CONCLUSION:

The frequency of multinodular goiter was found to be 94.4% and females of middle age group were the most affected ones.

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