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Rising Trend of Thyroid Cancer–"An Institutional Study"

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Abstract: *Thyroid cancer is the most common endocrine malignancy, accounting for 1.9% of all new malignant tumors diagnosed annually. Annual incidence rates vary by geographic area, age and sex, patient population and method of survey. So a cross sectional study was undertaken to evaluate the incidence of thyroid malignancy based on histopathological examination among those presenting with thyroid neoplasm in our Tertiary care centre. In our study it was observed that incidence of thyroid malignancy has increased in comparison to all head and neck malignancy. Also proportion of malignancy among thyroid neoplasm has increased. There was increase incidence in females and age group 21 -30 years. Histologicaly papillary carcinoma was most common finding and no cases of follicular and anaplastic carcinoma were found Increase in incidence may be because of true increase in disease incidence but it may also occur because of better pathological criteria or increasing diagnostic scrutiny. In our brief study we cannot conclude about etiology of increased incidence of thyroid carcinoma and further studies are needed for better understanding of increasing incidence.*

I. Introduction

Thyroid swellings presents as a wide spectrum which includes inflammatory thyroiditis, thyroid cysts and neoplastic swellings. Thyroid malignancy mostly presents as a painless palpable solitary thyroid nodule. Sudden onset of pain is mostly associated with benign disease.

Thyroid swelling remains a problem of enormous magnitude all over the world. The prevalence of thyroid swelling ranges from 4% to 10 % in general adult population and from .2%to 1.2% in children[1].The majority of clinically diagnosed swellings are nonneoplastic, only 5% to 30 % are malignant[2].In India thyroid cancer comprises of 1% of head and neck cancers.

Aims And Objectives

The present study is undertaken to evaluate the incidence of thyroid malignancy based on Radiological and histopathological examination among those presenting with thyroid neoplasm in a Tertiary care centre.

II. Materials And Methods

A cross sectional study was done in the department of ENT - Head and neck surgery & Deptt Of Radiology, from January 2012 to December 2014 (3years).All patients were evaluated by thorough clinical examination followed by routine investigations, thyroid function tests, Fine needle Aspiration Cytology (FNAC) Ultrasonography , CT scan and histopathological (H.P.E) examination.

Inclusion Criteria

Those patients who presented with thyroid swelling and underwent surgery with histopathological examination revealing neoplasm of thyroid (both benign & malignant).

Exclusion Criteria

All cases of thyroiditis were excluded.
All cases of cystic swellings after Radiological evaluation and histopathological confirmation were excluded

III. Results

Total of 185 patients were studied, out of which 41 patients (22%) diagnosed as malignant lesion on histopathological examination and rest were benign lesions.

Age Distribution of Malignancy

In our study out of 41 patients, 38 patients (94%)were found to be in between age group from 21-50 years.

Age group(in years)	Numbers of patients	Percentage(%)
0-10	0	0
11-20	1	2
21-30	14	34
31-40	12	30
41-50	12	30
51-60	2	4
61 years and above	0	0

Sex Distribution Of Malignancy

In our study out of 41 malignant cases 12(29%) were males and 29(71%)were females.

	Males	Female
Number	12	29
Percentage(%)	29	71

Radiological Findings

Chest X Ray

It plays an important role to detect metastasis to lung where military shadows are noted.

Usg Neck

In most cases, USG neck shows multinodular goiter with diffuse enlargement of thyroid lobe and multiple calcified and hyperechoic nodule in isthmus and lobe.

Cect Neck

In most of the cases, CECT neck shows heterogenously enhancing lesion replacing the lobe of thyroid and with or without isthmus of thyroid with irregular margins and central nonenhancing areas (indicative of necrosis and coarse calcification) suggestive of neoplastic thyroid mass

Histopathological Examination (Hpe) Diagnosis

In our study out of 41 malignant cases 31(76%) were papillary carcinoma and 10 (24%) were medullary carcinoma. No cases of follicular carcinoma were found.

	Papillary carcinoma	Medullary carcinoma	Follicular carcinoma
Number of patients	31	10	0
Percentage(%)	76	24	0

PAPILLARY CARCINOMA

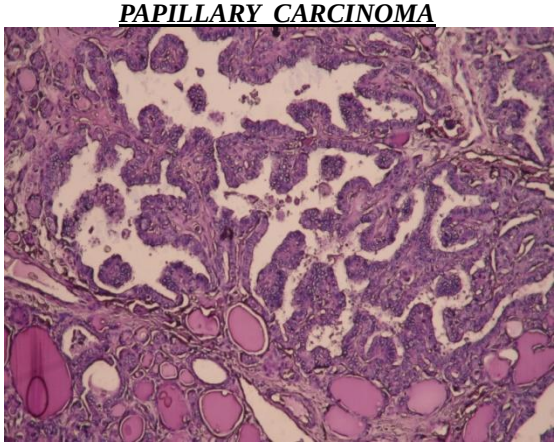

Fig.-papillary carcinoma cytology(hematoxylin and eosin stain,40x)

Age Distribution Papillary Carcinoma

In our study out of 31 cases of papillary carcinoma 29 (93%) cases were in between age group 21-50 years

Age group(in years)	number	Percentage(%)
0-10	0	0
11-20	0	0
21-30	13	42
31-40	9	29
41-50	7	23
51-60	2	7
61years and above	0	0

Sex Distribution Papillary Carcinoma

In our study ,out of 31patients of papillary carcinoma males were 5 (16%)and females were 26(84%) in numbers.

	Males	Females
Number of patients	5	26
Percentage(%)	16	84

Medullary Malignancy

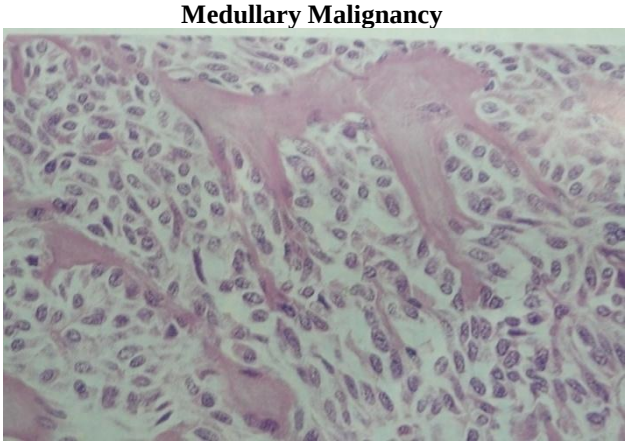

Fig.-cytology of medullary carcinoma (hematoxylin and eosin stain,40x)

Age Distribution Medullary Carcinoma

In our study out of 10 cases of medullary carcinoma 8 (80%)cases were from age group between 31- 40 years and 2 cases(20%) were between age group 11-30years.

Age group(in years)	Number of patients	Percentage(%)
0-10	0	0
11-20	1	10
21-30	1	10
31-40	3	30

41-50	5	50
51-60	0	0
61 years and above	0	0

Sex Distribution Medullary Carcinoma

In our study out of 10 cases of medullary carcinoma 7 (70%)were males and 3 (30%)were females .

	Males	Females
Number of patients	7	3
Percentage(%)	70	30

IV. Discussion

The incidence of thyroid cancer increased from 3.6 per 100000 in 1973 to 8.7 per 100000 in 2002-a 2.4 fold increase in USA[8]. In india thyroid neoplasm constitute 1 % of head and neck malignancy. A number of registries have reported that the incidence of thyroid cancer is increasing[9-14]. In our study, If we compare with all head and neck malignancy, out of 404 cases of head and neck malignancy registered in our Institute from January 2012 to December 2014,thyroid malignancy was found in 41 patients which is equivalent to 10%.

The worldwide prevalence of goitre in the general population is estimated at 4–7 percent and the incidence of malignancy in goitrous thyroid is about ten percent[18]. In our study the percentage of malignancy among thyroid neoplasm was 22%.

Thyroid cancer is more common in women with a ratio of 3:1[8,14] and affects mainly young people with nearly 2/3rd cases in the age group 20-55 years[3,8,14] In our study highest age group incidence was in the group 21 -30 of 34% .Incidence among females were high(71%) than males.

Normal incidence of thyroid cancer is as follows- papillary (81%),follicular(10%),medullary(5%),anaplastic (3%),lymphoma(1%)[4,8,15-17]. In our study on Histopathological examination (HPE) papillary carcinoma was most common finding(76%),followed by medullary carcinoma(24%). No cases of follicular carcinoma and anaplastic carcinoma were found in our study.

Most common age incidence of papillary carcinoma is between 40-49 years[5,15-17].In our study papillary carcinoma was more common in age group 21 - 30years(41%).

Papillary carcinoma is more common in females with female to male ratio of 3:1[6,15-17].In our study papillary carcinoma was found to be more common in females(84%).

SEER (surveillance,epidemiology and end results)data from USA from 1975 to 2000 indicates the maximum incidence of medullary thyroid carcinoma as 4.4 per million per year in the 70-75 year old age group and in adolescents[7,15-17.] The sex incidence, female to male, was 1.3 to 1.0 and age of the patients at presentation to hospital with a symptom, usually swelling of the neck, referable to the thyroid carcinoma varied widely. The youngest was 10 when he was first seen and the oldest 79 with a fairly uniform incidence over the adult decades[19].In our study medullary carcinoma was more common in age group 41-50(50%),and was more common in males(70%).

V. Conclusion-

In our brief study we conclude that recent trends shows increase in incidence of thyroid carcinoma. Increasing cancer incidence is typically interpreted as an increase in the true occurrence of disease but may also reflect changing pathological criteria or increased diagnostic scrutiny. Changes in the diagnostic approach to thyroid nodules may have resulted in an increase in the apparent incidence of thyroid cancer.

In our brief study we cannot conclude about etiology of increased incidence of thyroid carcinoma and further studies are needed for better understanding of increasing incidence.

Reference

[1]. E.C.RIDGWAY.clinical evaluation of solitary thyroid nodules,in the thyroid:Afundamental and clinical text.G.B.lipponcott.philadelphia.pa,usa.1986:1377-85.
[2]. R.Bakhos,S.M.selvaggi,S.DeJong.fnac of the thyroid:rate and causes of cytopathological discordance.diagn cytopathology23(4):233-7
[3]. STELL AND MARAN TEXTBOOK of head and neck surgury,page number 15.
[4]. Hodder arnold /scott brown 7E CHAPTOR 197THYROID CANCER –page no 2672
[5]. Hodder arnold /scott brown 7E CHAPTOR 197THYROID CANCER –page no 2672
[6]. Hodder arnold /scott brown 7E CHAPTOR 197THYROID CANCER –page no 2674
[7]. Wagues pack S,Wells SA Jr.Ross J,Bieyer A.Thyroid Cancer.In:Bleyer A, O'Leary M.Berr R, Ries LAG(eds).Cancer epidemiology in older adolescents and young adults 15-29 years of age,including SEER inciden survival:1975-2000.NIH publication no. 06-5767.bethseda,MD:National cancer institute, 2006:144-54.

[8]. increasing incidence of thyroid cancer in the united states,1973-2002-louise davies,MD,MS,H.Gilbert Welch,MD,MS JAMA.2006.295(18),2164-2167 doi.10.1001/jama.295.18.2164
[9]. Burke JP, Hay ID, Dignan F. et al. Long-term trends in thyroid carcinoma. Mayo Clin Proc. 2005;80:753-758
[10]. Haselkorn T, Bernstein L, Preston-Martin S, Cozen W, Mack WJ. Descriptive epidemiology of thyroid cancer in Los Angeles County, 1972-1995. Cancer Causes Control. 2000;11:163-170
[11]. Hodgson NC, Button J, Solorzano CC. Thyroid cancer: is the incidence still increasing? Ann Surg Oncol. 2004;11:1093-1097
[12]. Mangano JJ. A post-Chernobyl rise in thyroid cancer in Connecticut, USA. Eur J Cancer Prev. 1996;5:75-81
[13]. Mulla ZD, Margo CE. Primary malignancies of the thyroid. Ann Epidemiol. 2000;10:24-30
[14]. Increasing thyroid cancer incidence in Canada, 1970–1996: time trends and age-period-cohort effects S Liu1, R Semenciw2, A-M Ugnat2 and Y Mao2 British Journal of Cancer (2001) 85(9), 1335–1339
[15]. Haymart M.R. Understanding the Relationship Between Age and Thyroid Cancer. The Oncologist 2009; 14: 216-221.
[16]. Kilfoy B.A. et al. International patterns and trends in thyroid cancer incidence, 1973-2002. Cancer Cause Control 2009; 20: 525-531.
[17]. Davis L. and Welch H.G. Increasing Incidence of Thyroid Cancer in the United States, 1973-2002. Journal of the American Medical Association 2006; 295: 2164-2167.
[18]. Incidence of thyroid malignancy among goitrous thyroid lesions from the Sarawak General Hospital 2000–2004 Htwe T T, Hamdi M M, Swethadri G K, Wong J O L, Soe M M, Abdullah M S. Singapore Med J 2009; 50(7) : 724
[19]. Pathological and clinical findings in a series of 67 cases of medullary carcinoma of the thyroid E. D. WILLIAMS, C. L. BROWN, AND I. DONIACH. J. clin. Path. (1966), 19, 103