

Thyroid Diseases among Patients from Hadhramout Province, Yemen Fahmi Omer Aram^{1*}, Abdulrahman Ali Bahannan¹, Salim Saeed Bafakeer²

Abstract

Objective: To determine the histopathological pattern of thyroid diseases among patients in Hadhramout Province, Yemen

Materials and Methods: A descriptive retrospective study was conducted at Ibn Sina Central Teaching Hospital, in Mukalla city, Hadhramout, Yemen between January 2007 and December 2012. Eight hundred and seventeen patients with thyropathy were included in this study diagnosed histologically by experienced pathologists using fine needle aspiration cytology. This was followed-up by postoperative pathological thyroid specimen study. The patients in the study were treated medically and surgically by authors.

Results: 817 patients with thyropathy were included in the study. There were 716 (87.6%) females and 101(12.4%) males, with a female to male ratio of 7:1. The age of the patients ranged from 5 to 80 years, with a mean age of 37.7±12.2 years. Median age was 35 years. More than half of the patients aged between 21-40 years. The majority of the thyroid lesions were non neoplastic 703 (86%). The most common lesion was simple colloid goiter 578 (82%) followed by thyroid Hashimoto 75 (10.7%). The minority were granulomatous (subacute) thyroiditis, hyperplastic nodule and thyroglossal cyst, 5 (0.7%), 6 (0.9%), 8 (1.1%) respectively.

114 (14%) patients had neoplastic lesions. 61(7.5%) patients had benign adenoma, 2 (1.75%) patients had Hurthel cell adenoma. 43(5.3%) patients had papillary carcinoma while 3 (2.63%) patients had anaplastic carcinoma. The less common malignant neoplastic thyroid lesions were primary lymphoma, follicular and medullary carcinoma, mucoepidermoid carcinoma 2(1.75%), 1(0.9%), 1(0.9%),1 (0.9%) respectively.

Conclusion: The most common non-neoplastic thyroid disorder reported in this study is a simple colloid goiter. Adenoma was found to be the most common benign tumor while papillary carcinoma was found to be the most common malignant one. Most cancerous lesions were found within the age groups in the third and the fourth decade, mostly females.

Key words: simple colloid goiter, Hashimoto thyroiditis, papillary carcinoma.

Dysfunction of the thyroid gland represents one of the most common endocrinologic diseases in the general population. There are mainly two groups of thyroid gland lesions, neoplastic and non neoplastic lesions. The most common

sign of thyropathy is goiter (enlargement of the thyroid gland regardless of the underlying causative process)^{1,2} either diffuse or nodular. Nodules, solitary or multiple, are a common clinical finding in the euthyroid state but the proportion of such nodules to be malignant is small. The normal thyroid gland is impalpable. The very important, noninvasive and inexpensive diagnostic method of choice is ultrasonography. Fine needle aspiration cytology (FNAC) and biopsy has been shown to establish the diagnosis in a high number of cases while frozen section biopsy is usually unhelpful³. Thyroid function test is used to establish the state of the thyroid gland function. About a quarter of the thyroid swellings which undergo surgery are

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malignant swellings, and most of them are papillary carcinoma which were identified in the over 60 years of age patients⁴.

Our study aimed at describing the histopathological pattern of various thyroid disorders in specimens sent to the pathologist from patients in Mukalla, Hadhramout Province/Yemen, seen at the Ibn Sina Teaching Hospital from January 2007 to December 2012.

MATERIALS AND METHODS:

A retrospective descriptive study was carried out at Ibn Sina Teaching Hospital, in Mukalla city, Hadhramout Province over a period of six years from January 2007 to December 2012. Data collected included: name, age, gender, residence, clinical evaluation and palpation of the neck. Laboratory examination included thyroid function tests (T3, T4, TSH), CBC, ESR, CRP and FNAC, which were carried out for all the patients. Patients with retrorosternal and central pretracheal neck masses were included in the study. Patients who had a lateral cervical mass, those with non thyroidal masses and those who were operated previously in the neck were excluded from the study. All patients underwent neck palpation, ultrasound of the neck, fine needle aspiration cytology and thyroid function tests. Postoperative histological evaluation of specimens was performed by the pathologist. The present study included all the thyroid lesions, which were diagnosed and treated surgically and medically by the authors.

Windows Excel soft ware was used for data entry and the data were analyzed by using SPSS statistical program version 16. t-test was used to compare between means. Results were tabulated and presented in percentage form.

RESULTS:

A total of 817 patients with thyropathy were diagnosed and treated in the department of surgery in Ibn Sina Teaching Hospital in Al-Mukalla city over a period of six years from January 2007 and December 2012. There were 716 (87.6%) females and 101(12.4%)

males, with a female to male ratio of 7:1. The age of the patients ranged from 5 to 80 years, with a mean age of 37.7 ± 12.2 years and a median age of 35 years. More than half of the patients were aged between 21-40 years. The majority of the thyroid lesions were non neoplastic 703 (86%) patients, while 114 (14%) patients had neoplastic lesions (Table 1).

Among the 703 (86%) patients with non neoplastic lesions the most common lesion was simple colloid goiter 578 (82%) followed by thyroid Hashimoto 75 (10.7%) patients (Table 2). The less common lesions were granulomatous (subacute) thyroiditis, hyperplastic nodule and thyroglossal cyst 5(0.7%), 6(0.9%) and 8(1.1%) respectively. Of the neoplastic group, 114(14%) patients who had neoplastic lesions, 61(7.5%) patients had benign adenoma, 2(1.75%) patients had Hurthel cell adenoma. 43(5.3%) patients had papillary carcinoma while 3 (2.63%) patients had anaplastic carcinoma. Table (1): pattern of thyroid diseases in Hadramout from Jan 2007 to Dec 2012

	N	%
Gender		
Male	101	12.4
Female	716	87.6
Total	817	100
Age/ Years		
Range 5-80		
X±SD 37.7±12.2		
≤20	39	4.78
21-30	208	25.45
31-40	287	35.13
41-50	179	21.90
51-60	69	8.45
>60	35	4.29
Pattern of thyroid lesions		
Non neoplastic	703	86
Neoplastic (benign 63/ malignant 51)	114	14
Total	817	100

had anaplastic carcinoma. The least common malignant neoplastic thyroid lesions were primary lymphoma, follicular and medullary carcinoma, mucoepidermoid carcinoma

2(1.75%), 1(0.9%), 1(0.9%),1(0.9%) respectively (Table 3).

Most thyroid diseases were found in the age groups between third and fifth decade. Less common thyroid lesions were observed among adolescents and elderly patients (Tables 2 & 3).

The relationship between the mean age and

sex of the patients having thyroid lesions is shown in table (4) according to the type of the thyroid disease that the patients had.

DISCUSSION:

Goiter is one of the most common diseases of the thyroid gland and endocrine system generally. Colloid goiter is the most common

Table (2): Age distribution among patients with non-neoplastic thyroid lesions.

AgeNon neoplastic lesion	≤2	21-30	31-40	41-50	51-60	>60	Total	%
Colloid goiter	17	141	216	140	44	20	578	82.2
Graves disease	2	9	7	8	1	0	27	3.84
Hashimoto thyroiditis	6	22	33	8	4	2	75	10.67
Granulomatous thyroiditis	2	2	1	0	0	0	5	0.71
Lymphocytic thyroiditis	0	0	0	1	0	0	1	0.14
Hyperplastic nodule	0	2	3	1	0	0	6	0.85
Thyroglossal cyst	2	4	0	0	1	1	8	1.13
Thyroglossal fistula	1	0	0	0	0	0	1	0.14
Post thyroidectomy sinus	0	1	0	0	0	0	1	0.14
Riedel's thyroiditis	0	0	0	0	0	1	1	0.14
Total	30	181	260	158	50	24	703	100

Table 3: Age distribution among patients with neoplastic thyroid lesions

	≤20	21-30	31-40	41-50	51-60	>60	Total	%
Neoplastic benign								
Follicular adenoma	5	18	19	13	5	1	61	53.5
Hurthle cell adenoma	0	0	1	1	0	0	2	1.75
Neoplastic malignant								
Papillary carcinoma	4	7	7	7	13	5	43	37.7
Follicular carcinoma	0	0	1	0	0	0	1	0.9
Medullary carcinoma	0	0	1	0	0	0	1	0.9
Anaplastic carcinoma	0	0	0	0	0	3	3	2.63
Primary thyroid lymphoma	0	0	0	0	0	2	2	1.75
Mucoepidermoid carcinoma	0	0	0	0	0	1	1	0.9
Total	9	25	29	21	18	12	114	100

Table (4): Relation between the mean age and sex of patient having thyroid lesions.

Sex	Non-neoplastic		Benign neoplastic		Malignant neoplastic	
	Age	P-value	Age	P-value	Age	P-value
	X ± SD	0.017	X ± SD	0.004	X ± SD	0.964
Male	37.35±13.81		41.82±16.25		45.22±20.3	
Female	37.15±11.17		35.22±10.36		47.28±17.4	

non neoplastic lesion while follicular adenoma is the most common benign tumor with papillary carcinoma being the commonest malignant tumor. Thyroid lesions both neoplastic and non-neoplastic are more

common in females than males as reported in studies ^{3,4,5}.

Most of the thyroid diseases affects females more than males with a ratio of 2:1⁶, 4:1⁷, 3:1⁴, 5:1⁸, 6:1⁹, 10:1¹⁰. This is in agreement

with our results reflects the general speaking that it is the disease of the women.

The mean age for thyroid diseases ranges from 35 to 48 years^{6,8} and the age group which is affected mainly by thyroid disease is 20-50 years according to our study which is consistent with many other studies^{3,4,5} although malignant lesions predominate in the older age group >60 years⁴.

Eighty six percent of the thyroid lesions were non-neoplastic according to our study which is slightly higher than that of Tsegaye et al⁵ and Bukhari et al¹¹. Of these non-neoplastic lesions simple colloid goiter represents more than 70% of the cases which is similar to some studies⁵ but less than that reported in other studies⁸.

In overall, neoplastic thyroid lesion is less common than non-neoplastic, it is between 14% to 34% according to many studies^{3,5,7,8,11}. Factors like environmental, nutritional, hereditary and others might be the cause of this wide range in variation of neoplastic thyroid lesions between different communities.

Benign thyroid lesions are more common than malignant lesions, 60% of the neoplastic lesions in our study and 90% of all neoplastic lesions in other studies¹². Some studies have reported lower results than our findings, benign thyroid lesions being in 25% of thyroid tumors in a Saudi study¹³ and 43% of all thyroid gland neoplasms in a Nigerian study¹⁴. Follicular adenoma has the highest incidence among benign thyroid lesions, it has been reported to be 87%, 90%, 98%^{10,13,15} of all benign thyroid lesions. There might be environmental risk factors play a role in this difference.

Malignant thyroid neoplasms are less frequent among all thyroid lesions. It represents 15% in a Nigerian study¹⁰ 8% in a Ethiopian study⁵, 18% in a Saudi study¹⁵, and 24% in Bahrain⁴, this is slightly higher than our results which is 6%, and much higher than the Turkish results which is about 3%⁶. It is surprisingly very low than that of the eastern province of Saudi Arabia which showed a high percentage of malignancy that is 70% of all thyroid tumors in comparison to benign

tumor which were 25%, this wide difference requires further studies to be done.

Papillary carcinoma is the predominant being malignant thyroid lesions, 64%, to 90% of all malignant thyroid lesions^{5,6,10,11,12,14}. It is the least in the southwest of Saudi Arabia 50%¹⁵ more in the eastern region 74%¹³ but very high in Al-Madina region 88%⁷. Our results is closer to the findings in Al-Madina region 86%.again this needs further studies.

CONCLUSION:

Non neoplastic thyroid diseases represent the majority of thyroid diseases in Hadhramout province, while neoplastic lesions both benign and malignant are less common. They appear in the middle aged groups and females are more affected than males. Further studies are needed to identify causative factors like environmental, nutritional and hereditary which should showed a role in its occurrence and the wide range of variation in our community.

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