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Demographic and histopathological study of the thyroidopathies led to thyroid surgeries in Urmia Imam Hospital, Northwestern Iran

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ABSTRACT

A gland is one of the important organs, which plays wide physiological roles in the body from the birth to the end of The importance of histopathological study of thyroid gland will be evident while we are aware of the high prevalence of endemic involvement of this gland. Thyroid surgery has limited indications, including excision of benign and malignant tumors, symptomatic remedy of thyrotoxicosis, removal of enlarged and compressing gland to get rid of its tension pain, and finally harvesting biopsy for definite diagnosis of a suspected thyroidal mass. Histopathological diagnosis of thyroid cancers is based on the same criteria, used for the cancers of the other organs of the body. In this study, we evaluated the diseases leading to thyroidal surgery, considering the demographical and histopathological aspects. One group of the studied diseases in this category are adenomas, which originate from follicular epithelium. They may be divided into two categories of follicular and papillary. This study, as an analytical-descriptive evaluation, was performed in general surgery and pathology wards of the Imam Hospital of Urmia, northwestern Iran. We included all patients with thyroid disease, approved by histopathological studies, and were candidates for thyroid surgery during 1998-99. In this study, only the patients who underwent thyroid surgery were included. To the end of the study period, a total of 33 patients were considered and their histopathological test results were classified as following three categories were recognized malignant tumor, benign tumors and tumor-like mass, their prevalence rate in our study were 21%, 27% and 52%, respectively. All data were analyzed by SPSS package version 17. All patients (n=33) were more than 20 years old and in different age groups. Of 33 patients, 30 cases were female (90.9%) and 3 cases were male (9.09%). The cases with tumor-like masses were 15 (52%), benign tumors were 9 (27%) and malignant tumors were 7 (21%). The most common conditions in the different groups were multinodular goiter (n=7), follicular adenoma (n=6) and papillary carcinoma (n=6). As the tabulated data in the Table-1 shows, the three categories were as follows: in tumor-like mass group (nodular, simple and multinodular goiter), in benign tumor group (follicular and colloid

adenoma) and in the malignant group (papillary and follicular carcinoma). There was also a single lesion due to chronic granulomatosis (tuberculosis). According to the data collected from the patients of Imam Hospital of Urmia showed that the most common disease led to surgery was "goiter". The benign tumors and thyroidal carcinomas were at the second and third ranks. According to the world statistics, the rate of goiter incidence has been remarkably decreased. The main reason of this decrease has been mentioned as the knowledge of the people in using iodine salts in the daily diets. The other cause of goiter diseases with genetically etiologies, because of early diagnosis of the disease and hormone replacement therapy, the rate has been decreased again. Another effective and important cause for decreasing the disease is the thyroid surgeries. Regarding the pathological examination of the patients' biopsies in this study, there were 15 cases goiter, 9 cases benign tumor and 7 cases had malignancy.

Keywords: Demographic and histopathological study, Thyroid surgery, Urmia Imam Hospital, Northwestern Iran.

INTRODUCTION

Thyroid gland is one of the important organs, which plays wide physiological roles in the body from the birth to the end of the individual life. The hormones released from the thyroid gland affect all body organs and keeps the homeostasis and the body integrity. The importance of histopathological study of this gland will be evident while we are aware of the high prevalence of endemic involvement of this gland. Because of consumption of iodine salts by the people in their diets, its occurrence rate is decreasing. Nevertheless, it is necessary to do measurements to screening, identify the etiological causes, control and prevent the goiter in the endemic regions.

Thyroid surgery has limited indications, including excision of benign and malignant tumors, symptomatic remedy of thyrotoxicosis, removal of enlarged and compressing gland to get rid of its tension pain, and finally harvesting biopsy for definite diagnosis of a suspected thyroidal mass.

Histopathological diagnosis of thyroid cancers is based on the same criteria, used for the cancers of the other organs of the body. Except lymphomas and other rare thyroid tumors, the malignant thyroid neoplasms are of glandular epithelium origin. Therefore, they are included in the category of carcinomas, which are recognized as papillary, follicular and medullary forms.

Reviewing the literature shows that the incidence of thyroidal carcinomas have been increased during recent 30 years in several countries worldwide. This increased rates may be due to early diagnosis of thyroidal diseases by modern diagnostic methods, and also is due to thymus radiation in children, higher application of radioactive iodine and increased goiterogenic agents in the environment.

Another studied group of these diseases is thyroid nodules, which are hard masses in the thyroid gland. The occurrence is very common, so that in some countries 50% of thyroidopathies are of nodular form. Malignant thyroidal nodules grow slowly and the surgery outcome is reasonable. Almost thyroid cancers may be completely removed and the convalescence completely follows. The exact occurrence of the thyroid cancer is only recognized and determined by autopsy and after enough specimens are collected.

In this study, we evaluated the diseases leading to thyroidal surgery, considering the demographical and histopathological aspects. One group of the studied diseases in this category are adenomas, which originate from follicular epithelium. They may be divided into two categories of follicular and papillary.

MATERIALS AND METHODS

This study was designed as analytical-descriptive evaluation and performed in general surgery and pathology wards of the Imam Hospital of Urmia, northwestern Iran.

We included all patients with thyroid disease, approved by histopathological studies, and were candidates for thyroid surgery during 1998-99. In this study, only the patients who underwent thyroid surgery were included.

To the end of the study period, a total of 33 patients were considered and their histopathological test results were classified as following three categories were recognized malignant tumor, benign tumors and tumor-like mass, their prevalence rate in our study were 21%, 27% and 52%, respectively.

The results are based on the results of our study, performed in the pathology laboratory. All sections are stored in Imam Hospital pathology laboratory.

Additionally, the medical documentation of the patients were completely recorded. We also analyzed the demographic and other collected data from the patients, including age, gender, nuclear scan studies, familial history and investigation of different types of nodules. All data were analyzed by SPSS package version 17. The results were tabulated and depicted.

RESULTS

All patients (n=33) were more than 20 years old and in different age groups. Of 33 patients, 30 cases were female (90.9%) and 3 cases were male (9.09%). The cases with tumor-like masses were 15 (52%), benign tumors were 9 (27%) and malignant tumors were 7 (21%). The most common conditions in the different groups were multinodular goiter (n=7), follicular adenoma (n=6) and papillary carcinoma (n=6).

Table-1: The frequency of different diseases diagnosed by histopathological tests. All of the cases underwent thyroid surgery.

Microscopic Diagnosis	Neoplasm Nature	Number	Percent
multinodular goiter	Tumor-like	7	21.21%
simple goiter	Tumor-like	5	15.15%
nodular goiter	Tumor-like	3	9.06%
follicular adenoma	benign	6	18.18%
colloid adenoma	benign	3	9.09%
papillary carcinoma	malignant	6	18.18%
follicular carcinoma	malignant	1	3.03%
chronic granulomatosis (Tuberculosis)	-	1	3.03%
Cyst		1	3.03%
Total		33	100.00%

As the tabulated data in the Table-1 shows, the three categories were as follows: in tumor-like mass group (nodular, simple and multinodular goiter), in benign tumor group (follicular and

colloid adenoma) and in the malignant group (papillary and follicular carcinoma). There was also a single lesion due to chronic granulomatosis (tuberculosis) (See Table-1).

In this study the age groups ranged from 21-50 years, including: 21-30 y, n=13; 31-40 y, n=9; and 41-50 y, n=7. The most common histopathological finding was multinodular goiter. The cases were more involved by thyroidal diseases in the third decade of their life. We had only 4 cases involved in the ages before 50-80 years.

Three cases of all our patients were male. In this study we recorded the familial history of all patients for any thyroidal involvements, including simple goiter, papillary carcinoma and multinodular goiter. After recording the familial history, six cases had familial history of thyroidal diseases, from which three cases had simple goiter, one case had papillary carcinoma and another case had multinodular goiter. One case also had colloid adenoma.

26 cases of a total 33 patients received isotope radioactive scanning, of them 19 cases had single nodular and 7 cases were with multiple nodular goiter. Of the cases with single nodule, 4 cases (21.05%) had warm and 15 cases (78.9%) had cold nodules. Of the cases with multinodular form, 2 cases (28.57%) had warm and 1 case (14.28%) had cold nodules, and also 4 cases (57.14%) had mixed nodules (See Table-2). The pathological examination of the patients' biopsies were 15 cases goiter, 9 cases benign tumor and 7 cases had malignancy.

Table-2: The frequency of different types of thyroidal nodules diagnosed by histopathological tests. All of the cases underwent thyroid surgery.

Nodule Type	Number	Warm Nodule	Cold Nodule	Mixed Nodule	Percent
Singular Nodule	19	4	15	-	70.07%
Multiple Nodule	7	2	1	4	26.92%
Total					100.00%

The patients were classified according to the age groups. The results show that one case, i.e. simple goiter, occurred in the age range of 61-70 years, and another one, i.e. nodular goiter, occurred in the range 71-80 years. The all data were tabulated according to the age groups of the objects. See the Table-3 for the summary of the patients profile according to the gender, percent by the sex, and the type of the histopathological lesions.

Table-3: The frequency and the profile of patients according to the gender, percent by the sex, and the type of the histopathological lesions. All of the cases underwent thyroid surgery.

Microscopic Diagnosis	Female	Male	Sum
multinodular goiter	6 (85.71%)	1 (14.28%)	7
simple goiter	4 (80%)	1 (20%)	5
nodular goiter	3 (100%)	0	3
papillary carcinoma	5 (83.33%)	1 (16.66%)	6
follicular carcinoma	1 (100%)	0	1
follicular adenoma	6 (100%)	0	6
colloid adenoma	3 (100%)	0	3
Cyst	1 (100%)	0	1
chronic granulomatosis (Tuberculosis)	1 (100%)	0	1

DISCUSSION AND CONCLUSION

According to the data collected from the patients of Imam Hospital of Urmia showed that the most common disease led to surgery was “goiter”. The benign tumors and thyroidal carcinomas were at the second and third ranks. According to the world statistics, the rate of goiter incidence has been remarkably decreased. The main reason of this decrease has been mentioned as the knowledge of the people in using iodine salts in the daily diets. The other cause of goiter diseases with genetically etiologies, because of early diagnosis of the disease and hormone replacement therapy, the rate has been decreased again.

Another effective and important cause for decreasing the disease is the thyroid surgeries. Evidently, the thyroid surgery has limited indications, including the pressing conditions of the enlarged gland and the esthetic reasons. Therefore, sometimes the surgery is done without any reasonable indication. Hence, the definite determination for the necessity of the surgery should be brought among the engaged internists, pathologists and the surgeons. Fortunately, almost the nodular tumors of the thyroid gland are benign and they do not threat the life of the patient.

Regarding the pathological examination of the patients’ biopsies in this study, there were 15 cases goiter, 9 cases benign tumor and 7 cases had malignancy. Larijani *et al.* in a study performed in Tehran, evaluated the patients with thyroid cancers in the regions of iodine insufficiency. All the patients (n= 438) were investigated by histopathological examinations. The occurrence rate of the studied malignancies were reported as follows: papillary carcinoma (67.1%), follicular carcinoma (10.7%), medullary carcinoma (5.3%) and anaplastic form (4.3%), the rest was other diagnoses (12.4%).

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