

Actual status of preoperative diagnosis of thyroid cancer in Albania

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SUMMARY: Actual status of preoperative diagnosis of thyroid cancer in Albania.

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Introduction. *Thyroid cancer is the most common endocrine malignancy and accounts for almost 1% of human cancer. It is well known that the majority of cases occur in women in the middle decades of life. Thyroid cancer is a relatively rare disease; on the other hand clinically apparent thyroid nodules are present in 4-7% of the adult population. Most thyroid nodules are not malignant, with reported malignancy rates from 3-12%. It is important for the surgeon to know beforehand the diagnosis of malignancy, in order to perform a more radical operation on the thyroid gland.*

Patients and Methods. *In our study we have analyzed the preoperative clinical data of 84 patients operated in the First Clinic of Gene-*

ral Surgery, UHC "Mother Theresa" in Tirana; all with a positive histopathologic diagnosis of thyroid cancer. The data comprised age, sex, age distribution, blood group, time-lapse from the first endocrinologic visit, clinical examination, signs and symptoms, imaging, functional tests, preoperative FNA, admission diagnosis, associated diseases and preoperative treatment.

Results. *From the study emerged that only 9,3% of these patients were diagnosed preoperatively as thyroid cancer. Another related problem is the low percentage of preoperative FNA – only 22%. Among the signs and symptoms related to thyroid cancer we found that 40 and 33% of these patient presented dyspnea and dysphagia, respectively. The physical examination revealed apparent nodular growth of the thyroid gland in 81% and nodular hard consistency in 79% of cases. The proper endocrinologist consultation lacked in 23% of cases.*

Conclusion. *In our opinion, close collaboration between endocrinologists and surgeons in a multidisciplinary frame is the key to correct preoperative thyroid cancer diagnosis and optimal treatment.*

KEY WORDS: Thyroid carcinoma - FNA - Papillary cancer - Solitary nodule.

Introduction

Thyroid cancer is associated with low mortality, but it remains the most common endocrine malignancy, presenting ca. 1% of all human cancer (1). Most of the cases occur in women in the middle decades of life. The incidence of thyroid carcinoma significantly increased steadily worldwide over the past three decades, but mortality rates decreased, perhaps related to early diagnosis and multidisciplinary treatment. The increase is mainly

due to a rise in papillary cancer rate, attributed to environmental radiation and increased diagnostic accuracy (2, 3). Thyroid cancer is different from other adult population cancers because it is mostly diagnosed in younger people. Opposed to thyroid cancer, thyroid nodules are present in 4-7% of adult population. Most of the thyroid nodules are not malignant, with reported malignancy rates from 3-12% (4-6). Early positive diagnosis of thyroid cancer in an apparently benign nodule is sometimes a difficult challenge. It is very important for the surgeon to know beforehand the diagnosis of malignancy, in order to be able to perform a multidisciplinary approach in the treatment; beginning with a more radical surgery of the thyroid gland (5, 6). The aim of this 8-year retrospective study is to give an account of the demographic and clinic data of all the patients operated with confirmed thyroid cancer in the First Clinic of General Surgery UHC "Mother Theresa" in Tirana, Albania, with special emphasis directed in the problems regarding correct preoperative diagnosis.

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Patients and methods

The medical, pathologic and operative retrospective records of 84 patients who underwent thyroid surgery in the First Clinic of General Surgery, UHC "Mother Theresa" in Tirana, in the timeframe from January 1, 2005 till September 30, 2012; all with positive histopathologic diagnosis of thyroid cancer, done in the Service of Pathology UHC "Mother Theresa" Tirana, were reviewed and analyzed in a cross-sectional study using statistical methods, focused in the evaluation of drawbacks and problems regarding early preoperative diagnosis.

The data collected comprised age, sex, age distribution, blood group, time-lapse from the first endocrinologic visit, clinical examination records, signs and symptoms, imagery results, functional tests, preoperative FNA, admission diagnosis, associated diseases and preoperative treatment.

The classification of thyroid cancer was made according to NCCN Clinical Practice Guidelines on Oncology (Version 3. 2011) (6).

Results

From 2005 to 2012 (8 years) 84 patients underwent surgery of the thyroid gland in the First Clinic of General Surgery, UHC "Mother Theresa" in Tirana. All these patients were positively diagnosed after the surgery as thyroid cancer (histopathologic diagnosis) and treated accordingly. Demographic data of all patients shows a M:F ratio of 4:1 (17 (20%) males and 67 (80%) females) and an average age of 45,7 +/- 12,9 (16 – 70) (males 50 +/- 12,8 (28 – 70)* and females 44,6 +/- 13,1 (16 – 69)*; [*] $t = 1,55$; $P = NS$]. 54,6% of all patients were of the age-group 41-60 years.

Blood group was routinely determined in 75 (89%) patients. The outline of blood groups shows that our patients went 48% group O; 32% group A; 17% group B and 3% group AB. The Rh distribution was 85% positive and 15% negative.

The time-lapse from the first endocrinologic visit was: 6 +/- 4,3 (1 month-30 years) years. The endocrinologic consultation lacked in 19 (23%) patients. ORL consultation lacked in 78 (93%) patients.

Regarding the findings of clinical examination, fast apparent growth of the thyroid gland was observed in 68 (81%) and localized nodule in palpation in 76 (90%) patients.

The palpatory consistency of the thyroid nodules was defined as hard in 66 (79%) patients, as soft (elastic) in 10 (11,5%) patients and in 8 (9,5%) of the patients it was described as "medium". The nodules location were lateral in 77% of the patients, median in 21% and in 2 cases thyroid nodes were found below the SCM muscle.

The characteristics of thyroid nodules included asymmetry in 22 (26%) and fixed nodules in 74 (88%) patients.

The more common symptoms and signs observed in all patient are described in Table 1.

TABLE 1 - SYMPTOMS AND SIGNS IN ALL PATIENTS (84).

Symptom or Sign	Number of pts	%
Dyspnoea	34	40
Dysphagia	28	33
Tachycardia	10	12
Diaphoresis	8	9,5
Palpitations	7	8,3
Weight loss	7	8,3
Dysphonia	6	7,2
Neck pain	6	7,2
Headache	4	4,7

The ultrasonography data demonstrated that we had solitary node in 34 (41%) patients, a multinodular disease in 28 (34%) patients and cystic nodes in 12 (14%) of them. In 10 (11%) cases the US exam found adenopathies.

The scintigraphic functional test done in our patients resulted in 55 (65%) patients as hypofixating area (s), 27 (32%) patients as hyperfixating area (s) and normal scintigraphic images in 2 (3%) patients.

In 86% (72) of our patients we found normal hormonal laboratory values of the thyroid gland function, in 10% (8) hyperthyreosis and in 4% (4) hypothyreosis.

Preoperative Fine Needle Aspiration (FNA) was performed in only 18 (22%) patients. Overall sensitivity of the method was 39% (7 patients). In 2 (11%) patients the FNA result was uncertain and in 9 (50%) patients was negative.

The different admission diagnoses are described in Table 2.

The more frequent associated diseases were hypertension (6%) and iron-deficiency anaemia (2,4%). The preoperative treatment consisted in routine use of thyroid hormones, beta-blockers, sedatives-anxiolytics and antithyroid drugs.

TABLE 2 - ADMISSION DIAGNOSES IN ALL PATIENTS (84).

Diagnosis	Pts	%
Multinodular goiter	55	65,6
Nodular goiter	9	10,8
Thyroid cancer	8	9,3
"Cold" nodule	7	8,3
Toxic multinodular goiter	3	3,6
Toxic adenoma	1	1,2
Graves-Basedow disease	1	1,2

The histopathologic types of thyroid cancer are shown in Table 3.

TABLE 3 - HISTOPATHOLOGIC TYPES OF THYROID CANCER IN ALL PATIENTS (84).

Cancer type	Pts	%
Papillary carcinoma	54	64,3
Follicular carcinoma	16	19
Anaplastic carcinoma	7	8,3
Hürthle-cell carcinoma	4	4,8
Medullary carcinoma	3	3,6

Discussion

Thyroid nodules are more common in women than men. Palpable nodules increase in frequency through the entire life, reaching a prevalence of about ca. 4-7% of population aged 50 years or older (5-7). The development of new nodules in higher rates is observed principally after head and neck irradiation. By contrast, thyroid carcinoma is relatively rare and uncommon. The lifetime risk of being diagnosed with thyroid carcinoma is less than 1% (3, 5). The overall incidence in the Albanian population is 0,6/100 000, being 0,7/100 000 in females and 0,5/100 000 in males (data obtained from the National Hospital Tumor Registry), representing 0,9% of all malignant tumors in females and 0,6% in males. Although thyroid carcinoma can occur at any age, the peak incidence is around age 49 years, fully confirmed by the age distribution of our patients (54,6% were of the age-group 41-60 years). The patient age and gender remain an important factor in predicting thyroid cancer. The risk of malignancy is higher in patients younger than 15 years and older than 45 years (4-6). Other factors that increase the suspicion of malignancy include a history of head and neck irradiation and history of diseases associated with thyroid carcinoma in a multiple endocrinopathies frame (7).

Evaluating all thyroid nodules for malignancy is difficult and unproductive, because thyroid carcinoma is rare. On the other hand, both benign and malignant thyroid nodules are mostly asymptomatic and correct diagnosis is difficult. Half of the malignant nodules are discovered during physical examination, imaging studies or after surgery for supposed benign disease (8, 9). In our series of patients, preoperative correct diagnosis of thyroid cancer was obtained in only 9,3% of cases. Possible reasons for this situation are:

- Lack of cooperation between surgeons and endocrinologists (23% and 93% of our patients lacked endocrinologist and ORL consultation respectively).
- Different protocols (sometimes obsolete) of diagnosis

of thyroid cancer used by endocrinologists.

- Minimal use of FNA (in only 22% of patients with 39% sensitivity) and minimally invasive bioptic techniques.
- Lack of national healthcare projects for screening and prevention of the population for thyroid diseases in endemic areas.

Although Fine Needle Aspiration (FNA) biopsy is the procedure of choice for evaluating suspicious thyroid nodules, it was used rarely in our series of patients and without the necessary expertise to produce positive diagnostic results (10). This is a major drawback in the diagnostic protocols of thyroid cancer in Albania and in this direction is necessary an immediate change of attitudes.

Clinical examination seems to be important in the diagnosis of thyroid cancer. Signs and symptoms highly suspicious of thyroid cancer include: dyspnoea (40% of our pts); dysphagia (33% of our pts); dysphonia (7,2% of our pts); fast apparent growth of thyroid (81% of our pts); localized nodule on palpation (90% of our pts); fixed nodule (s) (88% of our pts); hard palpatory consistency (79% of our pts); asymmetry (26% of our pts) and lateral position of nodule (s) (77% of our pts).

Imaging techniques and functional tests of thyroid are also important in correct preoperative diagnosis of thyroid cancer. Imagery and functional data suspicious of thyroid cancer include: deviation of trachea (9,5% of our pts); solitary nodule (41% of our pts); adenopathy (12% of our pts) and hypofixation in scintigraphy (65% of our pts). Other important ultrasound suspicious criteria include increased central hypervascularity, hypochoic microcalcifications, infiltrative margins etc (6, 11-13).

Conclusion

The main problem evidenced in our series of patients was that correct preoperative diagnosis of thyroid cancer was obtained in only 9,3% of cases. The situation of a solitary, hard and fixed nodule with fast apparent growth in lateral neck position, associated with dyspnoea, dysphagia and dysphonia is highly suspicious of thyroid cancer (6, 14, 15). Imaging and functional signs as deviation of trachea, solitary nodule associated with adenopathy and hypofixation in scintigraphy highly supports the preoperative diagnosis of thyroid cancer (16, 17). FNA techniques expertise is necessary to improve the correct preoperative diagnosis of thyroid cancer (6, 10). Close cooperation between surgeon and endocrinologist in a multidisciplinary frame is very important for the early diagnosis of thyroid cancer (14, 18, 19). Thyroid cancer remains a very serious disease and its optimal treatment and associated survival depends mainly on early preoperative diagnosis.

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