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ORIGINAL

Thyroid cancer in patients undergoing thyroidectomy total in the Otorhinolaryngology Department of the Hospital de Clínicas during the period 2018-2022

Cáncer de tiroides en pacientes sometidos a tiroidectomía total en el Servicio de Otorrinolaringología del Hospital de Clínicas durante el periodo 2018-2022

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ABSTRACT

Introduction: Thyroid cancer, considered one of the most frequent malignant tumors of the endocrine system, accounts for 80%–90% of cases. The most common histological type observed in most studies is papillary cancer**. Objective:** To determine the frequency of thyroid cancer in patients undergoing total thyroidectomy at the Otorhinolaryngology Department of the Hospital de Clínicas between the period 2018-2022. **Methodology:** This retrospective study included 260 patients treated during the study period. Data were obtained from the patients' medical records, and sociodemographic and clinical variables related to thyroid cancer were analyzed. Data were analyzed with the SPSS v25 program, using descriptive statistics. **Results:** The frequency of thyroid cancer was 48.1%. The mean age of the cancer patients was 42.10±13.10 years. A higher frequency was observed in females 34.2%, n=89) and among those aged 25-44 years 20.0%, n=52). The most frequent were papillary (36.9%), follicular (2.7%), medullary (1.5%), and anaplastic (1.2%) types. **Discussion:** The frequency of thyroid cancer is high; it is more common in women and as age increases.

Keywords: Thyroid cancer; thyroidectomies; tumors; thyroid surgery.

RESUMEN

Introducción: El cáncer de tiroides, considerado uno de los tumores malignos más frecuentes del sistema endocrino, representa entre el 80% y el 90% de los casos. El tipo histológico más común observado en la mayoría de los estudios es el cáncer papilar**. Objetivo:** Determinar la frecuencia de cáncer de tiroides en pacientes sometidos a tiroidectomía total en la Cátedra y Servicio de Otorrinolaringología del Hospital de Clínicas durante el período 2018-2022. **Metodología:** se realizó un estudio retrospectivo con un total de 260 pacientes atendidos en el período de estudio. Los datos fueron tomados de las historias clínicas de los pacientes, en el cual se analizan variables sociodemográficas y clínicas relacionadas con el cáncer de tiroides. Los datos se analizaron con el programa SPSS v25, mediante estadística descriptiva. **Resultados:** La frecuencia del cáncer de tiroides fue del 48.1%. El promedio de edad de los pacientes con cáncer fue de 42.10±13.10 años. se observó una mayor frecuencia en las personas del sexo femenino 34.2% (n=89) y entre quienes tuvieron de 25-44 años 20.0% (n=52). El más frecuente fue el tipo papilar 36.9%, el folicular 2.7%, el medular 1.5% y el anaplásico 1.2%. **Discusión:** la frecuencia de cáncer de tiroides es alta, es más frecuente en las mujeres y a medida que aumenta la edad.

Palabras clave: cáncer de tiroides; tiroidectomías; tumores; cirugía de tiroides.

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INTRODUCTION

In recent years, the incidence of thyroid cancer has increased worldwide, with a higher frequency in women (1–4). Some risk factors postulated for this increase are greater exposure to radiation during medical procedures (5), obesity (6), diet, and environmental factors (7).

Thyroid cancer, considered one of the most frequent malignant tumors of the endocrine system, accounts for 80%–90% of cases. The most common histological type observed in most studies is papillary cancer (8). Differentiated tumors have the best survival, especially if the tumor is small and localized; currently, 97% of patients survive for 10 years (9).

According to several studies, the increase in the incidence of thyroid cancer may be due to overdiagnosis (10) or by 50% in the identification of intrathyroid papillary microadenomas due to improvements in the use of diagnostic tests and medical care (11).

Currently, there is an increase in thyroid cancer, and at the same time, it is being discussed whether this increase is due to overdiagnosis, which implies overtreatment (12). In Paraguay, there is no national cancer registry, and its incidence has not yet been established. The objective of this study was to describe the frequency of thyroid cancer in a specialized center for the surgical resolution of thyroid gland problems in Paraguay, focusing on age, sex, and histological type of tumors.

METHODS

This was an observational, descriptive, cross-sectional, retrospective study. Data were obtained from the medical records and pathological anatomy reports of the patients of the Otorhinolaryngology Department of the Hospital de Clínicas during the period 2018-2022. The patients included in the study underwent total thyroidectomy. To determine the type of cancer, pathology reports were analyzed to confirm the presence of one of the following diagnoses: papillary, follicular, Hurthle cell, medullary, poorly differentiated, anaplastic thyroid, or thyroid cancer not otherwise specified.

Data were analyzed using SPSS v25. Qualitative variables such as sex, pathological diagnosis, and type of cancer were analyzed using frequencies and percentages, and numerical variables such as age were summarized in the central tendency and dispersion data.

RESULTS

The observed frequency of cancer in the Otorhinolaryngology Department of the Hospital de Clínicas during the period 2018-2022 was 48.1% (95% CI: 42.31-53.9). The mean age of the cancer patients was 42.4±13.9 years. A higher frequency was observed in females 34.2%, n=89) and in those aged 25-44 years 20.0%, n=52) (Table 1).

TABLE.1 FREQUENCIES OF THYROID CANCER ACCORDING TO GENDER AND AGE (N= 260)

Variable	Thyroid cancer		Total n (%)
	Yes n (%)	No n (%)	
Gender			
Female	89 (34.2)	130 (50.0)	219 (84.2)
Male	21 (8.1)	20 (7.7)	41 (15.8)
Age			
18-24 years	10 (3.8)	11 (4.2)	21 (8.1)
25-44 years	52 (20.0)	42 (16.2)	94 (36.2)
45-64 years	42 (16.2)	80 (30.8)	122 (46.9)
≥65 years	6 (2,3)	17 (6.5)	23 (8.8)

Table 2 describes the final diagnoses of the patients undergoing total thyroidectomy. Benign tumors represented 38.5%, malignant tumors 42.3%, and other types 19.2%. The most frequent diagnosis was benign tumor 38.5% (n=100) more frequent in women 34.6% (n=90), which was more frequent in women 28.8% (n=75), followed in frequency by papillary cancer 36.9% (n=96). Table 3 shows that benign tumors were more frequent in people aged–45-64 years 20.8%, n=54), and malignant follicular type tumors were more frequent in people aged 25-44 years 17.7%, n =46).

TABLE 2. FREQUENCY OF FINAL DIAGNOSES ACCORDING TO SEX IN PATIENTS UNDERGOING TOTAL THYROIDECTOMY (N=260).

Diagnosis	Sex		Total n (%)
	Female n (%)	Male n (%)	
Benign	90 (34.6)	10 (3.8)	100 (38.5)
Papillary	80 (30.8)	16 (6.2)	96 (36.9)
Follicular	6 (2.3)	1 (0.4)	7 (2.7)
Medullary	2 (0.8)	2 (0.8)	4 (1.5)
Anaplastic	1 (0.4)	2 (0.8)	3 (1.2)
Others	40 (15.4)	10 (3.8)	50 (19.2)

TABLE 3. FREQUENCY OF FINAL DIAGNOSES ACCORDING TO AGE OF PATIENTS UNDERGOING TOTAL THYROIDECTOMY (N=260).

Diagnosis	Age (years)				Total n (%)
	18-24 n (%)	25-44 n (%)	45-64 n (%)	≥65 n (%)	
Benign	6 (2.3)	27 (10.4)	54 (20.8)	13 (5.0)	100 (38.5)
Papillary	9 (3.5)	46 (17.7)	36 (13.8)	5 (1.9)	96 (36.9)
Follicular	0 (0.0)	5 (1.9)	2 (0.8)	0 (0.0)	7 (2.7)
Medullary	1 (0.4)	1 (0.4)	2 (0.8)	0 (0.0)	4 (1.5)
Anaplastic	0 (0.0)	0 (0.0)	2 (0.8)	1 (0.4)	3 (1.2)
Others	5 (1.9)	15 (5.8)	26 (10.0)	4 (1.5)	50 (19.2)

DISCUSSION

This study shows that the incidence of thyroid cancer is high (42.3%), much higher than that reported in other studies, because the sample included patients who had thyroid pathology for which they underwent thyroidectomy. Palmero et al. reported that the incidence of thyroid cancer is 6.77 new cases per 100,000 inhabitants per year, with a higher frequency in women (13). Diaz-Soto et al., report in a similar study that the incidence rate is 25.7 per 100,000 people per year in women and 2.3 to 7.1 per 100,000 inhabitants per year in men (14). The higher frequency observed in other studies was also determined in this study, women are the ones who have a greater tendency to this cancer 84.3% compared to men 15.7%.

The observed trend of the most frequent thyroid cancer was benign histological type (38.5%), which was more frequent in women. Papillary cancer was the most frequent (36.9%), followed by the follicular (2.7%) and medullary (1.5%) types. As in other studies, the most common histological type is low-risk papillary tumors, which have an excellent prognosis and important clinical implications for the management of these patients.

A higher frequency of thyroid cancer has also been observed in women and older age groups. Similarly, Cohen et al. determined a higher frequency in women (83.8%) than in men (16.2%) (15). The mean age was also similar to that observed in this study (43 years), with the highest incidence between 40-49 years for both sexes (15). In this study, the mean age of the patients was 42 years, and it was more frequent in women.

The higher incidence of this cancer in women may be related to hormonal factors (15). According to the histological types, Cohen et al. determined that the most frequent is papillary thyroid carcinoma 90.8%, follicular 3.5%, medullary 3.1%, mixed 1.3% and anaplastic 1.3% (15). Papillary carcinoma was the most frequently diagnosed carcinoma in the sample analyzed in this study (36.9%).

The data showed a higher frequency of thyroid cancer among older people. In fact, the data are consistent with studies that show that the frequency of thyroid cancer is higher among those aged 25-64 years (16). One of the most common histological types is papillary (17), and differentiated thyroid carcinoma is the most common, including papillary and follicular carcinomas, which represent 80% and 90% of all thyroid cancers, respectively (18). Similarly, Palmero et al., in Argentina found that the most frequent histological type is papillary thyroid carcinoma 98.7%, followed by metastatic lymphadenopathy 22.9%, multifocal 36.9% with 80.2% in women (13).

The determination of the histological type of thyroid cancer leads to a search for the causes that determine

this greater frequency to investigate the risk and etiological factors of this disease. Currently, improvements in diagnostic techniques and the more frequent use of ultrasound at the neck level have allowed a better diagnosis of this disease, especially in asymptomatic patients (19). Overdiagnosis, understood as the detection of a disease that was never intended to affect a person during their lifetime, can be a problem because patients may be harmed by treatment, not helped, because treatment was not necessary (20).

The increase in thyroid cancer is a trend that has been maintained in most studies; for example, from 4.9 per 100 000 people per year observed in 1975 to 14.63% per 100 000 people per year in 2016 (2). Some reasons that have been proposed for this increase are controversial; some authors suggest that it is due to an increase in medical controls and the use of ultrasonography. However, other causes may include changes in lifestyle, radiation exposure, increasing obesity in the population, low iodine intake, heredity, and other environmental factors.

Studies of this type are important, especially for surgeons to understand the evolution of most cancers of the thyroid gland and for making clinical decisions regarding the management of thyroid cancer, which includes the extension of surgery for lobectomy or total thyroidectomy (21). Other implications derived from these data are the determination and organization of specialized departments for postsurgical management, in which the time that patients should take thyroid hormone supplements and the monitoring time to prevent complications should be analyzed.

The increase in thyroid cancer observed in some studies may be due to overdiagnosis of clinically asymptomatic thyroid cancer (22). However, the incidence of thyroid cancer is increasing. Although no increase in anaplastic thyroid cancer has been observed in other studies, timely action is necessary due to the high morbidity and mortality (23). Differentiated thyroid carcinomas are mainly treated with surgery and radioactive iodine, and they have a good prognosis with adequate clinical and surgical management (24).

Some limitations of this study are that the incidence of cancer was observed in patients who underwent total thyroidectomy, which excluded patients who underwent lobectomies or other minor procedures. Similarly, aggressive thyroid cancer types were grouped into three subgroups, which may have been different if classified according to cancer staging. Another limitation is that the data cannot be generalized to the general population because it is from a specialty clinic, which determines a higher frequency than that observed in other population studies. Unfortunately, tumor size was not systematically collected from patient databases.

AUTHORS CONTRIBUTIONS

RS: conception of the research idea. CMC: review of the research draft and design. RTM: data analysis. MV: critical revision of the manuscript. All authors have approved the final version of the manuscript.

REFERENCIAS

1. Busco S, Giorgi Rossi P, Sperduti I, Pezzotti P, Buzzoni C, Pannozzo F. Increased incidence of thyroid cancer in Latina, Italy: A possible role of detection of subclinical disease. Cancer Epidemiol. 2013;37(3):262-9. https://doi.org/10.1016/j.canep.2013.02.007
2. National Cancer Institute. SEER. 2020. Citado 21 de noviembre de 2023. SEER Cancer Statistics Review, 1975-2016. URL
3. Dal Maso L, Panato C, Franceschi S, Serraino D, Buzzoni C, Busco S, et al. The impact of overdiagnosis on thyroid cancer epidemic in Italy,1998–2012. Eur J Cancer. 2018;94:6-15. https://doi.org/10.1016/j.ejca.2018.01.083
4. Pizzato M, Li M, Vignat J, Laversanne M, Singh D, La Vecchia C, et al. The epidemiological landscape of thyroid cancer worldwide: GLOBOCAN estimates for incidence and mortality rates in 2020. Lancet Diabetes Endocrinol. 2022;10(4):264-72. https://doi.org/10.1016/s2213-8587(22)00035-3
5. Schonfeld SJ, Lee C, Berrington de González A. Medical exposure to radiation and thyroid cancer. Clin Oncol R Coll Radiol G B. 2011;23(4):244-50. https://doi.org/10.1016/j.clon.2011.01.159
6. Wolin KY, Carson K, Colditz GA. Obesity and cancer. The Oncologist. 2010;15(6):556-65. https://doi.org/10.1634/theoncologist.2009-0285
7. Estrada AP, Bohórquez ME, Prieto R, Duque CS, Vélez A, Mateus G, et al. Asociación de factores ambientales con el carcinoma de tiroides en pacientes colombianos. Rev Colomb Cancerol. 2017;21(1):46. http://dx.doi.org/10.1016/j.rccan.2017.02.007
8. Mondragón-Terán P, López-Hernández LB, Gutiérrez-Salinas J, Suárez-Cuenca JA, Luna-Ceballos RI, Erazo Valle-Solís A. Mecanismos de señalización intracelular en cáncer de tiroides. Cir Cir. 2016;84(5):434-43. https://doi.org/10.1016/j.circir.2016.05.017
9. Schmidt A, Cross G, Pitoia F. Metástasis a distancia en cáncer diferenciado de tiroides: diagnóstico y tratamiento. Rev Argent Endocrinol Metab. 2017;54(2):92-100. https://doi.org/10.1016/j.raem.2017.05.001
10. Lanitis S, Gkanis V, Sekadakis D, Lainas S, Ntalaperas K, Tournis S, et al. High rate of Incidental thyroid Cancer in Greece. Is it a time to revise the literature? Eur J Surg Oncol. 2023;49(2):e146-7. https://doi.org/10.1016/j.ejso.2022.11.412
11. Leboulleux S, Tuttle RM, Pacini F, Schlumberger M. Papillary thyroid microcarcinoma: time to shift from surgery to active surveillance? Lancet Diabetes Endocrinol. 2016;4(11):933-42. https://doi.org/10.1016/s2213-8587(16)30180-2

12. Galofré JC. Incidencia de cáncer de tiroides: el descubrimiento del iceberg oculto. Endocrinol Diabetes Nutr. 2017;64(6):285-7. https://doi.org/10.1016/j.endinu.2017.04.001
13. Palmero CS, López MM, Zelaya SP, Díaz LM, Morresi LE, Muñoa E, et al. Incidencia de cáncer de tiroides en la provincia de Río Negro. Rev Argent Endocrinol Metab. 2016;53(1):16-21. https://doi.org/10.1016/j.raem.2016.05.004
14. Díaz-Soto G, Torres Torres B, López JJ, García S, Álvarez Quiñones M, de Luis D. Incidencia y estadificación dinámica del riesgo del carcinoma diferenciado de tiroides en una unidad de alta resolución. periodo 2002-2017. Endocrinol Diabetes Nutr. 2021;68(9):636-41. https://doi.org/10.1016/j.endinu.2020.10.014
15. Cohen Sabban MA, Palmero C, Bertrand B, Aiello A, Ghiglioni A, Mac Donell MC, et al. Incidencia de cáncer de tiroides en la provincia de Neuquén, período 2001-2012. Endocrinol Nutr. 2014;61(9):455-9. https://doi.org/10.1016/j.endonu.2014.04.005
16. Araque DVP, Bleyer A, Brito JP. Thyroid cancer in adolescents and young adults. Future Oncol Lond Engl. 2017;13(14):1253-61. https://doi.org/10.2217/fon-2017-0024
17. Dal Maso L, Lise M, Zambon P, Falcini F, Crocetti E, Serraino D, et al. Incidence of thyroid cancer in Italy, 1991–2005: time trends and age–period–cohort effects. Ann Oncol. 2011;22(4):957-63. https://doi.org/10.1093/annonc/mdq467
18. Leenhardt L, Grosclaude P. Épidémiologie des cancers thyroïdiens dans le monde. Ann Endocrinol. 2011;72(2):136-48. https://doi.org/10.1016/j.ando.2011.03.025
19. Haymart MR, Banerjee M, Reyes-Gastelum D, Caoili E, Norton EC. Thyroid Ultrasound and the Increase in Diagnosis of Low-Risk Thyroid Cancer. J Clin Endocrinol Metab 2019;104(3):785–792. https://doi.org/10.1210/jc.2018-01933
20. Davies L. How Understanding Thyroid Cancer in Belgium Can Help Us Mitigate the Problem of Increasing Incidence. J Clin Endocrinol Metab. 2013;98(10):3977-9. https://doi.org/10.1210/jc.2013-3505
21. Genere N, El Kawkgi OM, Giblon RE, Vaccarella S, Morris JC, Hay ID, et al. Incidence of Clinically Relevant Thyroid Cancers Remains Stable for Almost a Century: A Population-Based Study. Mayo Clin Proc. 2021;96(11):2823-30. https://doi.org/10.1016/j.mayocp.2021.04.028
22. Lim H, Devesa SS, Sosa JA, Check D, Kitahara CM. Trends in Thyroid Cancer Incidence and Mortality in the United States, 1974-2013. JAMA. 2017;317(13): 1338-1348. https://doi.org/10.1001/jama.2017.2719
23. Janz TA, Neskey DM, Nguyen SA, Lentsch EJ. Is the incidence of anaplastic thyroid cancer increasing: A population based epidemiology study. World J Otorhinolaryngol - Head Neck Surg. 2019;5(1):34-40. https://doi.org/10.1016/j.wjorl.2018.05.006
24. Fernández-Vañes L, Llorente JL, García-Cabo P, Menéndez M, Pedregal D, Rodrigo JP, et al. Manejo de los carcinomas diferenciados de tiroides. Acta Otorrinolaringológica Esp. 2019;70(4):200-6. https://doi.org/10.1016/j.otorri.2018.03.002