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What has changed in the last 20 years in the postoperative specimen findings of the papillary thyroid cancer cases? A retrospective analysis

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ABSTRACT

Objective: In this study, it was aimed to investigate the changes in surgical approaches and histopathological evaluation of the tumor according to years of patients who were operated on with the diagnosis of thyroid papillary cancer (PTC) in our center in the last 20 years.

Material and Methods: The records of the cases who underwent thyroidectomy in our department were divided into four groups of five years each and analyzed retrospectively. Demographic characteristics, surgical procedures, presence of chronic lymphocytic thyroiditis, histopathological features of tumour and hospital stay of the cases in the groups were evaluated. Based on tumor size, PTCs were classified into five subgroups. PTCs of 10 (mm) or less were accepted as papillary thyroid microcarcinoma (PTMC).

Results: There was a significant increase in PTC and multifocal tumors in the groups over the years ($p< 0.001$). There was a significant increase between the groups in the presence of chronic lymphocytic thyroiditis ($p< 0.001$). In contrast, the total number of metastatic lymph nodes ($p= 0.486$) and the largest metastatic lymph node size were similar between the groups ($p> 0.999$). In our study, it was observed that there was a significant increase over the years in both the total/near-total thyroidectomy cases and the number of cases with a postoperative hospital stay of one day ($p< 0.001$).

Conclusion: In the present study, it was found that papillary cancer sizes decreased gradually and the frequency of papillary microcarcinoma increased gradually in last 20 years. Also, a significant increase was detected in the rates of total/near-total thyroidectomy and lateral neck dissection over the years.

Keywords: Papillary thyroid carcinoma, papillary thyroid microcarcinoma, multifocal tumor, tumor size

INTRODUCTION

Thyroid cancer is the most common type of endocrine cancer accounting for 3% of all cancers and 0.4% of cancer-related mortality in 2019 in the USA (1). According to the data of the Turkish Public Healthcare Institution published in 2014, it was reported that thyroid cancer is the ninth most common cancer in men and the second in women. Also, it is the most common cancer type in women between the ages of 15-24 (2). However, it is cancer that has had the fastest increasing incidence in the world in the last 30 years. In the USA, the annual incidence increased from 4.9 per 100.000 in 1975 to 14.3 per 100.000 in 2009 (3), and almost all of this change was associated with increased incidence of papillary thyroid cancer (PTC) (4). Needle biopsy histopathological evaluations used in the past in the diagnosis of thyroid cancer have changed, and novel classifications are now used, and in this respect, more conservative surgical approaches are preferred in selected cases.

A relation was reported in a meta-analysis conducted in Korea in 2018 among Hashimoto's thyroiditis and multifocal papillary cancer in patients with PTC (5). In their study, Karakoç et al. have reported that 31.95% of PTCs were microcarcinomas and 46.15% of the patients underwent modified neck dissection (6). It was reported in the consensus decisions published by the European Society of Endocrine Surgeons in 2013 that age was not a risk factor for multifocality, but it had prognostic significance, and the prognostic importance of bilateral multifocal papillary thyroid cancer was emphasized. However, it was shown as an opposing opinion that multifocality has little or no prognostic significance in thyroid papillary microcarcinomas (7).

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In the present study, the changes in surgical approaches and histopathological evaluations of the tumor over the years were investigated in patients who were operated on in our center with the diagnosis of thyroid papillary cancer in the last 20 years.

MATERIAL and METHODS

The records of the cases who underwent thyroidectomy and/or neck dissection in Bursa Uludağ University General Surgery Endocrine Surgery Department during 20 years between January 1999 and December 2018 were reviewed retrospectively by scanning electronic (Avicenna "TM"/MIAMed "TM") and written archives. Ethics committee approval was received from Bursa Uludağ University Faculty of Medicine Clinical Research Ethics Committee with the decision number of 2020-14/12. It was found that a total of 3580 cases were operated on for thyroidectomy, and nine out of 777 cases that were diagnosed with PTC over the age of 18 included in the study were excluded because of missing data. The cases under the age of 18 were not included in the study. Although neck dissection was performed along with thyroid surgery or thyroidectomy in a total of 726 cases, it was observed that only neck dissection was performed in 42 cases.

The cases were divided into four groups of five years in the 20 years between 1999-2018. These groups were; Group I (1999-2003), Group II (2004-2008), Group III (2009-2013), and Group IV (2014-2018). Demographic characteristics, surgical procedures for thyroid and lymph node dissection, tumor size, multifocality, number of foci, presence of chronic lymphocytic thyroiditis, capsule invasion, vascular invasion, extrathyroidal spread, and hospital stay of the cases in the groups were evaluated. Extrathyroidal spread was examined as muscle invasion, trachea invasion, and surrounding soft tissue invasion. The presence and number of metastatic lymph nodes and the long size of the largest metastatic lymph node were also recorded. The length of hospital stay was noted as one day, two days, three days, four days, and five or more days.

When the tumor size was considered, PTCs were classified into five subgroups as below 10 mm, 11-20 mm, 21-30 mm, 31-40 mm, and over 40 mm. PTC of 10 (mm) or less was accepted as papillary thyroid microcarcinoma (PTMC) and were divided into two subgroups of 5 millimeters (mm) and less and 6-10 mm.

Statistical analyzes of the present study were performed using IBM SPSS.21 Program. Normal distribution of the data was evaluated with Kolmogorov-Smirnov test. Data that were not distributed normally were expressed as median (minimum-maximum). Kruskal Wallis Test was used in the analysis of numerical data, and Pearson Chi-square test and Fisher's exact test were used in the analyses of the categorical data. $p< 0.05$ was considered statistically significant.

RESULTS

When all of the patients who underwent thyroidectomy were compared with the patients who were diagnosed with PTC after thyroidectomy, there was an increase in the rate of PTCs ($p< 0.001$) (Table 1). In subgroup analysis, an increase was detected in all subgroups except for Group I and Group II ($p< 0.001$), and the highest rate was found in Group IV.

Female sex was generally dominant (78% of the cases). However, no significant differences were detected in the evaluation of age ($p= 0.168$) and sex ($p= 0.177$) among the groups (Table 1).

Significant increases were detected in the evaluation among the groups in multifocal PTCs over the years ($p< 0.001$) (Table 1), and this rate was the highest in Group IV. In the group analyses, the increase between Group I and IV ($p= 0.002$) and Group III and IV ($p< 0.001$) was found to be statistically significant. This difference was not significant in other group analyzes. In unifocal tumors, the tumor size tended to decrease in the analysis among the groups ($p< 0.001$) The smallest tumor sizes were in Group IV, and the largest tumor sizes were in Group I (Table 1).

Significant differences were detected in the evaluations of the total tumor size among the groups ($p< 0.001$) (Table 1). This difference tended to decrease in general; however, there was an increase in Group III when compared to previous years. Tumor size was the smallest in Group IV when compared to all groups.

In histopathological evaluations, the presence of Hashimoto's thyroiditis increased over the years among the groups ($p< 0.001$). No significant differences were detected in the evaluations of the presence of metastatic lymph nodes among the groups ($p= 0.706$), and there were no significant differences in the evaluation of capsule invasion, vascular invasion, and extrathyroidal spread among the groups ($p= 0.056$, $p= 0.240$, $p= 0.534$, respectively) (Table 1).

In the comparisons of the surgical procedures regarding the thyroid, a significant increase was detected in total/near-total thyroidectomy ($p< 0.001$) and a significant decrease in subtotal thyroidectomy ($p< 0.001$) in correlation with this, and Group III and Group IV subtotal thyroidectomy procedure was not carried out in the study. However, no significant differences were detected among the other types of surgeries (Table 2).

Significant differences were detected among the central neck dissection groups ($p= 0.002$), and the highest rate was in Group II and decreased in the following groups. Lateral neck dissection had an increasing trend among the groups ($p< 0.001$). It was found that it was applied at the highest rates in Group IV (Table 2).

Table 1. Demographic characteristics of the patients with PTCs and histopathological features of the tumor (n= 726)

	Group I	Group II	Group III	Group IV	Total	p
Non-PTC Thyroidectomy, n (%)	706 (91)	749 (91)	882 (76)	517 (58)	2854 (80)	<0.001[b]
PTC, n (%)	71 (9)	69 (9)	246 (24)	340 (42)	726 (20)	
Age (min-max)	48 (21-84)	45 (18-80)	50 (18-90)	49 (19-78)	49 (18-90)	0.168[a]
Female sex, n (%)	48 (67)	55 (80)	194 (79)	269 (77)	566 (78)	0.177[b]
PTMC, n (%)	30 (42)	25 (36)	110 (45)	197 (58)	362 (50)	<0.001[b]
Multifocal PTC, n (%)	14 (20)	23 (33)	57 (23)	134 (39)	228 (31)	<0.001[b]
Single-focus tumors, n (%)	57(80)	46 (67)	189 (77)	206 (61)	496	<0.001[b]
Single-focus tumors-size, mm median (min-max)	15 (2-55)	12 (2-50)	12 (1-140)	8 (1-75)	10 (1-140)	<0.001[a]
Total tumor size, mm Median (min-max)	15 (2-155)	13 (2-70)	14.5 (1-140)	11 (1-135)	12 (1-155)	<0.001[a]
Hashimoto's Thyroiditis, n (%)	13 (18)	13 (19)	85 (35)	168 (49)	279 (38)	<0.001[b]
Metastatic LN presence, n (%)	9 (13)	9 (13)	28 (11)	50 (15)	96 (13)	0,706[b]
Capsule invasion, n (%)	15 (21)	14 (20)	75 (31)	73 (22)	177 (24)	0.056[b]
Vascular invasion, n (%)	5 (7)	3 (4)	18 (7)	13 (4)	39 (5)	0.240[c]
Extra thyroidal invasion, n (%)	8 (11)	7 (10)	29 (12)	51 (15)	95 (13)	0.534[b]

[a]: Kruskal Wallis test, [b]: Pearson Chi-square test, [c]: Fisher's exact test.

Table 2. Subgroup analysis of the surgical procedures and postoperative hospitalization durations

	Group I	Group II	Group III	Group IV	Total	p
Surgical procedures, n (%)						
Total/near-total thyroidectomy	48 (68)	53 (77)	203 (83)	305 (90)	615 (85)	<0.001[b]
Subtotal thyroidectomy	11 (16)	6 (9)	0 (0)	0 (0)	11 (2)	<0.001[b]
Hemithyroidectomy-lobectomy	7 (10)	5 (7)	27 (11)	22 (7)	61 (8)	0.253[b]
Completion thyroidectomy	4 (6)	4 (6)	16 (7)	13 (4)	37 (5)	0.454[b]
Biopsy	1 (1)	1 (1)	0 (0)	0 (0)	2 (3)	0.037[b]
Neck dissection	n= 3	n= 25	n= 55	n= 54	n= 137	
Central, n (%)	1 (33)	18 (72)	25 (46)	15 (28)	59 (43)	0.002[b]
Thyroidectomy	1	18	23	15	57	
No thyroidectomy	0	0	2	0	2	
Lateral, n (%)	0 (0)	7 (28)	26 (47)	37 (69)	70 (51)	<0.001[b]
Thyroidectomy	0	3	10	23	36	
No thyroidectomy	0	4	16	14	34	
LN excision, n (%)	2 (67)	0 (0)	4 (7)	2 (4)	8 (6)	0.009[b]
Thyroidectomy	2	0	0	0	2	
No thyroidectomy	0	0	4	2	6	

[a]: Kruskal Wallis test, [b]: Pearson Chi-square test, [c]: Fisher's exact test.

When the cases with postoperative hospital stays of one day were examined among the groups, it was found that there was a significant change over the years (p< 0.001). When subgroup analyzes were made, significant increases were detected between Group I and Group II (p= 0.002), Group I and Group III (p< 0.001), and Group I and Group IV (p= 0.002); however, a significant decrease was observed between Group III and Group IV (p= 0.014). When the patients who had hospitalization periods of ≥4 days were analyzed among the groups, it was observed that there was a significant decrease over the years (Figure 1).

Significant variations were detected among the groups in PTC dimensions of ≤10 mm and >10 mm PTC, and this change tended to increase in tumors of ≤10 mm and tended to decrease in tumors of >10 mm (p< 0.001). In subgroup analysis of PTMCs, increased incidence of tumors below ≤5 mm was detected in recent years (p< 0.01, p< 0.016, respectively) (Table 3).

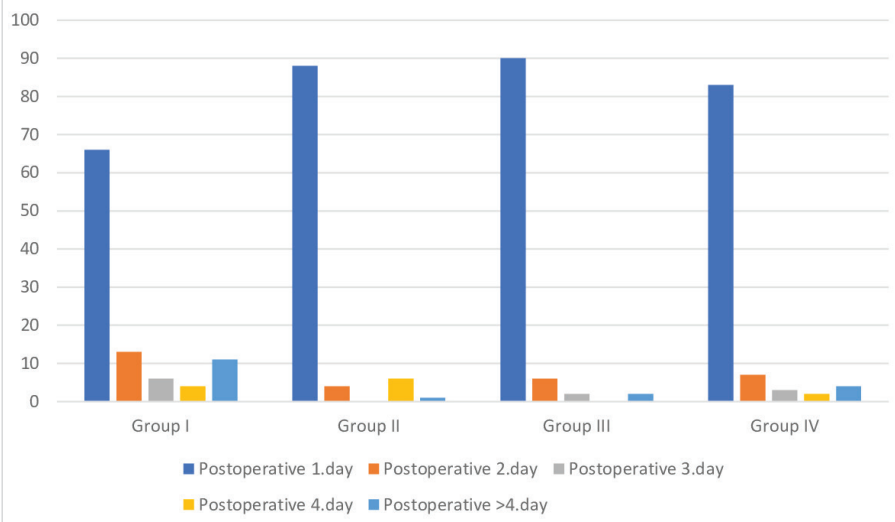

Figure 1. The change of hospitalization days among the groups.

Table 3. Intragroup comparisons of the tumor sizes in PTMC cases

	Group I	Group II	Group III	Group IV	p
≤10 mm, n (%)	30 (42)	25 (36)	110 (45)	197 (58)	<0.001[b]
≤5 mm, n (%)	13 (43)	6 (24)	47 (43)	102 (52)	0.045[b]
6-10 mm, n (%)	17 (57)	19 (76)	63 (57)	95 (48)	0.045[b]
>10 mm, n (%)	41 (58)	44 (64)	136 (55)	143 (42)	<0.001[b]
11-20 mm, n (%)	19 (46)	29 (66)	71 (52)	92 (64)	0.054[b]
21-30 mm, n (%)	12 (29)	10 (23)	31 (23)	28 (20)	<0.001[b]
31-40 mm, n (%)	5 (12)	4 (9)	23 (17)	10 (7)	0.173[b]
>40 mm, n (%)	5 (12)	1 (2)	11 (8)	13 (9)	0.016[c]

[b]: Pearson's Chi-square test, [c]: Fisher's exact test.

In general, metastatic lymph was detected in 13% of the cases and this did not differ among the groups (p= 0.706) (Table 1). The presence of multifocal PTC or the detection of Hashimoto's thyroiditis did not change the presence of metastatic lymph nodes, and no significant differences were detected among the groups (0.917 and p= 0.615, respectively) (Table 4).

The comparison of PTMK characteristics among the groups is given in Table 5. The incidence of PTMC tended to increase over the years (p< 0.001) and was at the highest level in Group IV. In group analyses, significant increases were detected in the comparison of Group IV with all groups (p= 0.016, p= 0.001, p= 0.002, respectively). Although multifocal PTMC appeared more frequently over the years, no statistically significant differences were detected (p= 0.052). When compared in terms of the number of foci, no significant differences were detected among the groups of 2-focal and 3-focal PTMK. Significant

Table 4. The characteristics of the cases with metastatic lymph nodes and intragroup comparisons

	Group I	Group II	Group III	Group IV	p
Number of metastatic LN Median (min-max)	2 (1-7)	2 (1-18)	5 (1-24)	3 (1-27)	0.486[a]
The largest MLN size Median (min-max)	12 (2-30)	15 (3-30)	14 (2-85)	12 (2-45)	>0.999[a]
Multifocal PTC, n (%)	2 (14)	5 (22)	9 (16)	24 (18)	0.917[c]
Hashimoto's thyroiditis, n (%)	0 (0)	2 (15)	12 (14)	24 (14)	0.615[c]

[a]: Kruskal Wallis test, [c]: Fisher's exact test.

Table 5. Intragroup comparison of PTMC characteristics

	Group I	Group II	Group III	Group IV	p
n (%)	30 (42)	25 (36)	110 (44)	197 (58)	<0.001[b]
Multifocal PTK	6 (20)	6 (24)	24 (22)	69 (35)	0.052[b]
Number of foci (mean)	2.3	3.1	2.3	2.4	
2	5 (83)	2 (33)	19 (79)	43 (62)	0.127[c]
3	0	1 (17)	4 (17)	23 (33)	0.186[c]
4	1 (17)	3 (50)	1 (4)	3 (5)	0.006[c]
Capsule invasion	3 (10)	1 (4)	19 (17)	32 (16)	0.088[b]
Vascular invasion	0	2 (8)	0	3 (2)	0.056[c]
Non-tumor spread	0 (0)	2 (8)	6 (1)	15 (1)	
Muscle tissue invasion	0	0	0	2	0.419[c]
Trachea invasion	0	2	1	2	
Lipomatosis tissue inv.	0	0	5	11	
Presence of metastatic LN	2 (7)	1 (4)	4 (4)	10 (5)	0.877[c]
Hashimoto's thyroiditis	5 (17)	5 (20)	35 (32)	98 (50)	<0.001[b]

[b]: Pearson's Chi-square test, [c]: Fisher's exact test.

Table 6. Intragroup comparison of papillary thyroid carcinoma characteristics over 10 mm

	Group I	Group II	Group III	Group IV	p
n (%)	41 (58)	44 (64)	136 (55)	143 (42)	<0.001[b]
Multifocal	8 (20)	17 (39)	33 (24)	65 (46)	<0.001[b]
Number of foci* (mean)	2.3	2.6	2.6	2.6	
2	6 (75)	8 (47)	19 (58)	34 (52)	0.585[c]
3	2 (25)	8 (47)	9 (27)	20 (31)	0.594[b]
4	0	1 (6)	5 (15)	11 (17)	0.607[c]
Capsule invasion	12 (29)	13 (30)	56 (41)	41 (29)	0.125[b]
Vascular invasion	5 (12)	1 (2)	18 (13)	10 (7)	0.094[c]
Non-tumor spread	8 (20)	5 (11)	23 (17)	36 (32)	
Muscle tissue invasion	5	1	6	3	<0.001
Trachea invasion	0	3	5	0	
Lipomatosis tissue inv.	3	1	12	33	
Presence of metastatic LN	7 (17)	8 (18)	24 (18)	39 (27)	0.14[b]
Hashimoto's thyroiditis	8 (16)	8 (20)	50 (37)	70 (49)	<0.001[b]

[b]: Pearson's Chi-square test, [c]: Fisher's exact test.

decreases were detected in 4-focal tumors in the last 10 years when compared to previous years (p= 0.006). When the presence of non-tumor extension (p= 0.056), capsule invasion (p= 0.088), and vascular invasion (p= 0.056) was evaluated, no significant differences were detected. No differences were detected among the groups in terms of the presence of metastatic lymph nodes (p= 0.877). However, when the association of Hashimoto's thyroiditis was evaluated, significant increases were detected, especially in recent years (p< 0.001).

The features of >10 mm PTKs are given in Table 6. Although the number of PTC cases >10 mm tended to decrease in recent years (p< 0.001), this difference was detected among Group IV and other groups (Group I versus Group IV (p= 0.016), Group II and Group IV (p= 0.001), and Group III and Group IV (p= 0.002). However, multifocal tumors were found at the highest levels in Group IV, and there was a difference among the groups (p< 0.001). It was seen that it was highest in Group IV and included the last years. When compared in terms of the number of foci, no differences were detected among the groups. No significant differences were detected when the presence of capsule invasion (p= 0.125) and vascular invasion (p= 0.094) were evaluated. Significant differences were detected among

the groups in the evaluation of non-tumor spread, and Group IV had the highest rate (p< 0.001). In subgroup analysis, the increase between Groups II and IV (p= 0.009) and Groups III and IV (p= 0.006) was significant. No differences were detected in the analysis of the presence of metastatic lymph nodes among the groups (p= 0.188). There was a significant change (p< 0.001), which tended to increase towards the last years in the groups when separated by years.

DISCUSSION

It has been reported that there was an annual increase rate of 3% in the USA as the third fastest-growing cancer type. Similar patterns of increase have been reported in Canada, Australia, and Western Europe (5-8). The increased incidence rate of papillary thyroid cancer may represent an increasing number of diagnoses, either from a true increase in disease or from increased diagnostic investigation methods. Especially with the widespread use of ultrasonography, fine-needle aspiration biopsy, and non-thyroid imaging, more hidden and small thyroid nodules are detected and investigated (9). There has been an increase in recent years by approximately 3% a year in the number of patients diagnosed with PTC, with the increasing share of these newly diagnosed tumors of lesions smaller than 1 cm. Papillary thyroid microcarcinoma (PTMC) is defined as PTC tumors smaller than 1 cm. It is a subtype of PTK. PTMC also accounts for 39% of thyroid cancers in the USA. In the present study, the incidence of thyroid papillary cancer was found to have increased in recent years. PTMC constituted 42-58% of the cases according to the years in the study groups. The increase in the incidence of both PTC and PTMK was found to be significant especially in recent years.

Although sex did not differ at significant levels among the groups, female sex was more dominant than the male sex in all groups. The mean age of papillary thyroid cancer incidence was between 45 and 50, and the age range was similar in all groups.

Multifocality, which is considered a poor prognostic factor, has been reported in the literature as 18-87% in different case series (10). In our series, it varied between 20% and 39%. Especially, the incidence of multifocal PTC has increased significantly over the years. It is considered that thinner cross-sectional examination of pathology specimens is more effective in detecting small multifocal foci causing an increased number of multifocal tumors. In recent studies, the incidence of multifocal PTMC has been reported as 13.47% and 36.18% in all PTMCs. In our series, it varied between 20% and 35% according to years, and the rate of multifocal PTMC has increased in recent years. Especially, more multifocality was detected in lesions >1 cm when compared to PTMC. This remarkable increase in multifocality over the years is correlated with increasing total thyroidectomy in the present study. In the literature, in another study investigating multifocality in PTC, although multifocality has been found to be more common in tumors >1 cm and lymph node metastasis has been detected more frequently in multifocal tumors, only mixed-type pathology has been found to be significant in multifocality in multivariate analyses. In the present study, no relations were detected between lymph node metastasis and multifocality. However, in a meta-analysis, the prognostic importance of multifocality has been emphasized in thyroid cancers, and it has been found that it is highly associated with lymph node metastasis and extrathyroidal spread (11).

Multifocality was found to have increased in both PTCs and PTMCs over the years in the present study. However, this increase in multifocality was significant in tumors >1 cm. Although the number of four-focal tumors decreased at significant levels over the years in PTCs (p= 0.006), the opposite was true in PTCs >10 mm. Although not significant, an increase was detected in four-focal pathologies in these tumors. In a retrospective study published by Ning et al. in 2014, an increase was detected in aggressive tumor features such as lymph node metastasis and extrathyroidal spread, and a poor prognosis was reported as the number of foci increased (12).

It was observed that the tumor size decreased significantly over the years in unifocal PTCs and multifocal PTCs; however, the rate of detection of metastatic LN, capsule invasion, vascular invasion, and extrathyroidal spread did not change. Although tumor size decreased, histopathological aggressiveness of the tumor did not change. Especially in PTCs >10 mm, non-tumor spread was significantly higher than in PTMCs. These findings suggest that the smaller size of cases with PTC in our series might be a result of the increased use of USI in the approach to thyroid nodules.

The discussions about Hashimoto's thyroiditis were first published by Dailey et al. in 1955 and have kept their up-to-date status since then (13). The relation between chronic lymphocytic thyroiditis and PTC continues to increase. The effect of Hashimoto's Thyroiditis on lymph node metastasis is found at lower rates in patients with PTC (5). In the present study, no significant relations were detected on the lymph node. However, we think that the increased incidence of Hashimoto's association in both PTMCs and pathologies of PTCs may have caused earlier diagnosis of patients followed up more closely because of the known relation between chronic lymphocytic thyroiditis and PTC. For this reason, the increasing incidence of Hashimoto's thyroiditis over the years may have caused the detection of smaller tumors in patients who were under close follow-up, which enabled more patients to be diagnosed with PTMC.

It is very difficult to diagnose PTC variants with FNAB. The diagnoses of subtypes with poor prognoses can be made in definitive pathology reports. Performing total/near-total thyroidectomy facilitates the follow-up of any recurrence in thyroglobulin

levels and I^{131} scans. In a study comparing the definitive pathology report after bilateral subtotal thyroidectomy procedure and morbidity of patients undergoing completion thyroidectomy and those undergoing total thyroidectomy, it has been found that recurrent nerve injury and hypocalcemia were more common in completion thyroidectomy (7). The identification of PMTCs has caused the introduction of conservative surgical procedures in selected patients with thyroid cancers and to guide the lobectomy procedure in unifocal PMTCs. However, as stated in a previous meta-analysis, the false-negative rate of the benign diagnosis of the contralateral nodule in a case with unifocal PTMC has been found to be 23% (14). Risk factors for contralateral malignancy in unifocal PMTCs with contralateral negative thyroid nodules are multifocality of primary carcinomas, capsular invasion, and Hashimoto's thyroiditis (14). In our study, it was observed that there was a change in the types of surgeries performed over the years. It is noteworthy that subtotal thyroidectomy decreased significantly over the years and even, it was not performed in the last two groups, and total/near-total thyroidectomy increased at significant levels. No differences were detected among the groups in lobectomies. The fact that the cases found in the present study had more multifocal and Hashimoto associations over the years appears to be the reason for the increased total/near-total thyroidectomy procedure in thyroid surgery. In the study published by Karakoc et al. in 2009, although the incidence of thyroid malignancy associated with the increased rate of papillary thyroid cancer increased after 2000, a significant increase was also detected in total thyroidectomies (6).

Although no significant changes were detected in LN metastasis in the present study, central neck dissection was used widely in surgical procedures in groups including the first years; however, it has gradually decreased in recent years. The reason for this is to avoid the morbidities that may be brought by the changes in the guidelines and unnecessary central dissection in recent years. In the present study, prophylactic lymph node metastasis was not performed if it was not proven by FNAB. As the tumor size decreased, the increase in lateral neck dissections suggests that the tumors take a more aggressive progression; however, the relation between tumor size and lymph node metastasis is controversial in the literature. On the other hand, in Betül et al.'s study, extrathyroidal spread, lymphovascular invasion, capsule invasion, and multifocal tumor have been evaluated as relevant risk factors for lymph node metastasis (15). Although the tumor size decreased in the present study, the multifocality increased, which may have caused the presence of metastatic lymph nodes to remain unchanged.

It was observed that the length of hospital stay after thyroidectomy was significantly shortened over the years. Although the one-day length of stay increased especially in recent years, the significant decrease in hospitalizations of ≥4 days can be explained by the morbidity in central neck dissections, which were applied more frequently in previous years.

The number of tumors of 10 mm or less increased in cases with PTC over the years; however, it gradually decreased over the years in tumors over 10 mm. Especially in tumors larger than 2 cm, there was a significant decrease over the years. Although this increase in smaller tumor diameter can be explained histopathologically by the pathologists who took thinner sections, decreased case counts with larger tumor diameters along with the increased rate of papillary cancer can be explained by the use of more precise criteria in ultrasonographic examinations in the guidelines.

CONCLUSION

In the present study, when the pathology specimens of thyroid papillary cancer cases were examined over 20 years, it was found that the papillary cancer sizes decreased gradually and the frequency of papillary microcarcinoma increased gradually. In addition, a significant increase was detected in the rates of total/near-total thyroidectomy and lateral neck dissection over the years when the operations on the cases were compared.

Ethics Committee Approval: This study was approved by Uludağ University Faculty of Medicine Clinical Research Ethics Committee (Decision no: 2020-14/12, Date: 19.08.2020).

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – TK; Supervision – TK, SK; Materials - Data Collection and/ or Processing – TK, BB; Analysis and/or Interpretation – BB, PT, SK; Literature Search – PT; Writing Manuscript – BB, PT; Critical Reviews – PT, SK.

Conflict of Interest: The authors have no conflicts of interest to declare.

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ORİJİNAL ÇALIŞMA-ÖZET
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Papiller tiroid kanserli olguların ameliyat sonrası spesimen bulgularında son 20 yılda neler değişti? Retrospektif analiz

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ÖZET

Giriş ve Amaç: Bu çalışmada, merkezimizde son 20 yılda tiroid papiller kanseri (PTK) tanısı ile opere edilen hastaların yıllara göre cerrahi yaklaşımlarındaki ve tümörün histopatolojik değerlendirmesindeki değişiklikler araştırıldı.

Gereç ve Yöntem: Bölümümüzde tiroidektomi yapılan olguların kayıtları her biri beşer yıllık dört gruba ayrılarak geriye dönük olarak incelendi. Gruplardaki olguların demografik özellikleri, cerrahi prosedürler, eşlik eden kronik lenfositik tiroidit varlığı, tümörün histopatolojik özellikleri ve hastanede kalış süreleri değerlendirildi. Tümör boyutuna göre PTK'lar beş alt gruba ayrıldı. 10 (mm) ve altındaki PTK'lar papiller tiroid mikrokarsinomu (PTMC) olarak kabul edildi.

Bulgular: Yıllar içinde gruplarda PTK ve multifokal tümörlerde anlamlı artış vardı (p< 0,001). Eşlik eden kronik lenfositik tiroidit varlığında gruplar arasında anlamlı artış vardı (p< 0,001). Buna karşılık, toplam metastatik lenf nodu sayısı (p= 0,486) ve en büyük metastatik lenf nodu büyüklüğü gruplar arasında benzerdi (p> 0,999). Çalışmamızda hem total/total tiroidektomi olgularında hem de postoperatif hastanede kalış süresi bir gün olan olgu sayısında yıllar içinde anlamlı artış olduğu gözlendi (p< 0,001).

Sonuç: Bu çalışmada, son 20 yılda papiller kanser boyutlarının giderek azaldığı ve papiller mikrokarsinom sıklığının giderek arttığı bulunmuştur. Ayrıca, yıllar içinde total/total tiroidektomi ve lateral boyun diseksiyonu oranlarında anlamlı bir artış tespit edildi.

Anahtar Kelimeler: Papiller tiroid karsinom, papiller tiroid mikrokarsinom, multifokal tümör, tümör boyutu

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