

# The effective factors on our early and late results, recurrence and survival in differential thyroid cancers: "An analysis of 184 patients"

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## Abstract

**Aim:** The purpose of the study was to investigate the effective prognostic factors on recurrence and mortality in patients with differential thyroid cancer.

**Material and Methods:** The effects of various parameters of demographic characteristics, the admission symptoms, physical examination, laboratory findings, pathological examination, and surgical method of 184 patients, who underwent surgery due to differential thyroid cancer between January 1986 and December 2009 in 4th General Surgical Clinic of Ankara Numune Training and Research Hospital, on prognosis were examined. The information of the patients was obtained from automation system of the hospital and Thyroid Cancer Information and Follow-Up Form of 4th General Surgical Clinic of Ankara Numune Training and Research Hospital.

**Results:** The sample group consisted of 172 papillary cancer patients and 12 follicular cancer patients. The mean age of the patients was 45.4 years (15-78). There were 159 (86.4%) female patients and 25 (13.6%) male patients. The mean follow-up period of 161 (87.5%) patients, who were followed up regularly, was 73.26 months (1-231). The mean recurrence period was 77.66 months (1-150). Mortality was observed in eight (4.3%) patients during their follow-up period. The mean life expectancy of those who died was 66.87 months (1-150 months).\*

Single variable analysis revealed that the T stage and pathologic final stage were effective on recurrence. Painful nodules and palpable lymph nodes in the neck and the papillary histological malignant subtype variant, as well as the presence of vascular and adjacent organ invasion, multicentricity, T stage, the lymph nodes, distant metastasis, and the clinical stage during the admission were identified to be effective on mortality.

**Conclusion:** The risk of recurrence is high in DTC patients with high T stage and advanced pathologic stage. The rate of survival of those with multicentric tumors and advanced pathologic stage is low. Therefore, it is important for patients to be followed up closely within a postoperative multidisciplinary context.

**Keywords:** Differential; thyroid; cancer; recurrence; mortality.

## INTRODUCTION

Thyroid cancer is the most frequent endocrine organ cancer. 90% of cancers are differentiated cancers (70-80% papillary and 20-30% follicular type), 7% of the cancers are medullary cancers and the rest of the cancers are anaplastic thyroid cancer, lymphoma and other rare types. Although papillary (PTC) and follicular (FTC) cancers, which are among differentiated thyroid cancers (DTC), have quite good prognosis, the prognosis in the medullary and anaplastic thyroid cancers is quite bad. Ten-year lifetimes for papillary, follicular and Hurthle cell

carcinomas are 93%, 85% and 76%, respectively (1).

The risk for a person to get cancer is less than 1%. This risk is 2-3 times more in women compared to men (W=0.83%, M=0.33%) (2). Although thyroid cancers are observed in every age, they are observed most frequently between the ages of 45-49 in women and 65-69 in men (3). Thyroid cancers in the people aged between 15-24 years constitute 7.5-10% of all cancers (4-6).

The cancer originated from thyroid gland are the most frequent endocrine tumors. What's interesting is that

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although thyroid cancer is observed more in women, the mortality rate is higher in men. That men are older at the time of diagnosis or women go through medical tests more often and therefore that women can be diagnosed in the earlier period are suggested as the reasons for this (3,7). That the radiation exposure increases day by day is suggested as an important reason for the increase in the prevalence of thyroid cancer (8). The number of the early-diagnosed patients increases as patients become conscious and the diagnostic tools, especially ultrasonography and (USG) and thyroid fine-needle aspiration biopsy (TfNAB) come into routine use. In addition, that the effective treatment methods are used have caused a decrease in the mortality rates in the well-differentiated thyroid cancer (9).

We also studied on this subject which gains currency day by day. We assessed the results of 184 patients that we operated due to differentiated thyroid cancer in Ankara Numune Education and Research Hospital 4th General Surgery Clinic between January 1986 and December 2009. We examined the factors affecting postoperative mortality and recurrence.

## MATERIAL and METHODS

One-hundred eighty-four patients who were operated due to differentiated thyroid cancer in Ankara Numune Training and Research Hospital between January 1986 and December 2009 were included in this study. The information of the patients were obtained from Ankara Numune Training and Research Hospital 4th General Surgery Clinic Thyroid Cancers Information and Follow-up Form prepared for each of patients and including data which was entered prospectively and from the automation system of the hospital. The effects of the demographic characteristics, presenting symptoms (swelling on the neck, aphonia, pressure findings and pain), physical examination findings (palpability, presence of lymphadenopathy and nodule attribute) and laboratory findings and several parameters of the surgical method applied and the pathological examinations on the prognosis were examined. All the patient's made the routine vocal cord examination before and after the operation. One patient who had surgical treatment and diagnosed with hurthle cell carcinoma in the same period and 5 patients who were stated to have tumor of uncertain behavior were excluded from the study.

The statistical analyses were carried out with SPSS 15.0 software. The intergroup comparisons were performed with Chi-square test, the mean value comparisons were performed with Student-t and Mann Whitney U test. Disease-free survival and general survival curves were calculated with Kaplan Meier method. The single variables affecting lifetimes were determined with Log rank method. The effects of the factors of the patients on recurrence and survival were determined with univariate analysis. As any other factor could not be determined apart from the factors that were determined accurately and no mortality or recurrence were not observed in some groups, the multivariate analysis methods were not preferred. The aim of the multivariate analysis is summarizing, grouping, scaling etc. data in order

to define them. However, as no effect of the factors, apart from the ones the effect of which on recurrence and general survival were known accurately, could be determined on recurrence and general survival in this study, summarizing and grouping the data were not aimed.  $p < 0.05$  was accepted as the statistical significance limit.

## RESULTS

The patient group was composed of 184 patients, including 172 papillary and 12 follicular cancer patients. The age average of 159 (86.4%) female patients were 44.95 and the age average of 25 (13.6%) male patients were 48.8. 148 (86%) of 172 patients with papillary thyroid cancer were females and 24 (14%) of them were males and 11 (91.7%) of the 12 patients with follicular cancers were females and 1 (8.3%) of them were male.

174 (94.5%) of 184 patients were symptomatic and the average complaint period was 48.5 months (1-360 months). Swelling on the neck was the most frequent presenting complaint. The complaints of hyperthyroidism became prominent in some of the patients and another group of patients complained about hypothyroidism (Table 1). None of the patients had external radiation in the neck. the families of 46 (25%) patients had goiter history. Just 2 of these (4.3%) had cancer. Before the application, 58 patients (21.7%) used drugs for thyroid. 22 of these patients (12%) used thyroid hormone and the other 36 (19.7%) patients used antithyroid drugs.

**Table 1. The Main Complaints of the Patients**

Swelling on the neck	132 (72.9%)
Hyperthyroidism complaints	108 (59.7%)
Pain	49 (27.1%)
Airway pressure findings	33 (18.2%)
Aphonia	28 (15.5%)
Hypothyroidism complaints	13 (7.2%)

In 44 of 142 patients with palpable nodules, the nodule was palpated in firm consistency and enlarged lymph node in the neck was palpated in 16 (8.6%) patients.

Before the operation, fine-needle aspiration biopsy were performed with the nodules in 76 (42%) patients. 35 (46.1%) of 76 patients who had TFNAB (thyroid fine-needle aspiration biopsy), were reported as benign, 21 (27.6%) of them were reported as papillary carcinoma, 3 (3.9%) of them were reported as follicular neoplasia, 1 (1.3%) of them was reported as medullary thyroid carcinoma, 2 (2.6%) of them were reported as Hurthle cell neoplasia, 7 (9.2%) of them were reported as suspicious material and the other 7 (9.2%) of them were reported as inadequate material (Table 2).

**Table 2. The Patients with TFNAB and the Final Pathology Results**

TFNAB	Final Pathology Results	
	Papillary Carcinoma	Follicular Carcinoma
Benign (n:35)	30 (43.5%)	5 (71.4%)
Papillary thyroid ca (n:21)	21 (30.4%)	0 (0%)
Follicular neoplasia (n:3)	2 (2.9%)	1 (14.3%)
Medullary thyroid ca (n:1)	1 (1.4%)	0 (0%)
Suspicious (n:7)	7 (10.1%)	0 (0%)
Inadequate (n:7)	6 (8.7%)	1 (14.3%)
Hurthle cell neoplasia	2 (2.9%)	0 (0%)

Overall, 118 patients (64.1%) had total thyroidectomy and 28 patients (15.2%) had bilateral subtotal thyroidectomy (BST), 12 patients (6.5%) had lobectomy, 19 patients had unilateral total, bilateral subtotal or near total thyroidectomy. Only 1 patient (0.5%) had bilateral near total thyroidectomy. 6 patients (3.3%), who had treatment in other health centers and diagnosed with invasive differentiated thyroid cancer as a result of the final pathology, had completion thyroidectomy.

1 patient, who had lobectomy and was diagnosed with follicular cancer as a result of the pathological examination, 6 patients diagnosed with invasive papillary thyroid cancer and 1 patient, who had BST, had completion thyroidectomy. Central lymph node dissection was added to 14 of the total 20 patients (10.9%) and modified lymph node dissection was added to 6 of the patients concurrently.

In 37 (20.1%) patients, the suspicious lesions were examined with frozen section technique during the operation. As a result of the frozen, malign was reported in 23 patients, benign was reported in 13 patients and the malign-benign distinction could be made in 1 patient.

23 patients were lost to follow-up in the postoperative period. The average follow-up duration of 161 patients (87.5%) with regular follow-up were found to be 73.26 months (1-231 months). R2 resection could be performed

in 3 patients (1.6%). 9 patients with high thyroglobulin (4.9%) had scintigraphy and CT scan and their recurrence regions were found (Table 3). The average recurrence time was 77.66 and it varied between the 1st and 150th months. Neck dissection was applied in 1 patient with recurrence, Completion thyroidectomy was applied in 1 patient with recurrence and RAI and external radiotherapy were applied for the other 7 patients.

**Table 3. The Recurrences in the Patients with High Postoperative Thyroglobulin and Their Regions**

Thyroid	1
Brain	2
Cervical	1
Thyroidectomy Side	2
Cervical + Pulmonary	1
Pulmonary + Bone	2

8 patients (4.3%) had mortality. The average life expectancy of the dead patients was 66.87 (1-150 months).

The patients who underwent curative surgery and had no preoperative distant organ metastasis were included in the analysis of the factors affecting lifetime and recurrence. It was determined that the most important factors affecting recurrence were T value (p<0.001) and clinical stage (p<0.001) in our patients (Table 4).

**Table 4. The Univariate Analysis Results of the Factors Affecting Recurrence**

Factor	Subcategory	n	Mean (±SD)	Range	p-value
Pain	Yes (n:41)	5	187.04 (±12)	163.52-210.57	0.210
	No (n:113)	4	214.16 (±8.84)	196.84-231.49	
Histologic type	Papillary (n:149)	9			0.280
	Follicular (n:8)	0			
Capsule invasion	Yes (n:24)	0			0.127
	No (n:131)	9			
Neural invasion	Yes (n:0)	0			
	No (n:155)	9	207.45 (±7.68)	192.39-222.52	
Vein invasion	Yes (n:14)	2	159.50 (±15.73)	128.66-190.33	0.496
	No (n:141)	7	211.22 (±7.63)	196.26-226.19	
Adjacent Organ Invasion	Yes (n:9)	0			0.546
	No (n:144)	9			
Papillary Variant Type	Classical (n:67)	5			0.276
	Micro (n:53)	0			
	Other Variant (n:26)	3			
Papillary Variant Malignant subtype	Yes (n:26)	3	199.92 (±16.18)	168.19-231.64	0.596
	No (n:120)	5	193.45 (±10.57)	172.72-214.18	
Lymphatic Invasion	Yes (n:15)	0			0.206
	No (n:141)	9			
T stage	1a (n:67)	2	161.34 (±9.86)	141.99-180.68	0.00
	1b (n:43)	2	215.36 (±10.64)	194.49-236.23	
	2 (n:11)	1	182.40 (±13.95)	155.05-209.74	
	3 (n:31)	2	199.00 (±11.70)	176.05-221.95	
	4a (n:4)	1	86.25(±17.97)	51.02-121.47	
	4b (n:1)	1	1 (±0)	1-1	
N	0 (n:143)	7	207.55 (±8.42)	191.04-224.07	0.325
	1a (n:14)	2	171.50 (±17.38)	137.42-205.57	
Stage	1 (n:130)	5			
	2 (n:4)	1			
	3 (n:20)	2			
	4a (n:2)	0			
	4b (n:1)	1			
Multicentric	Yes (n:37)	4	194.84 (±15.42)	164.61-225.07	0.304
	No (n:120)	5	176.35 (±4.76)	167.01-185.70	

When our patients were examined in terms of mortality, it was determined that all the mortalities happened in the patients at the age of 45 and above ( $p=0.003$ ). It was observed that the lifetime was shorter in the patients who had lymph node palpation ( $p=0.006$ ) and who had neck pain ( $p=0.021$ ). It was observed that the mortality was significantly higher in patients with malignant variant of

tumor subtype ( $p=0.030$ ) and who had vein ( $p=0.044$ ) and adjacent organ invasion ( $p<0.001$ ). It was determined that T value ( $p<0.001$ ), lymph node involvement ( $p=0.001$ ), distant metastasis ( $p<0.001$ ), multicentricity ( $p=0.041$ ) and finally clinical stage ( $p<0.001$ ) were the factors affecting mortality in our patients (Table 5).

**Table 5. The Factors Affecting Mortality**

Variable	Mortality	Mean Estimated General Survival	95% Confidence interval	p
<b>Age</b>	Below 45 years of age (n:73)	0		0.003
	Above 45 years of age (n:88)	8		
<b>Pain</b>	Yes (n:44)	6	184.15 ( $\pm 11.91$ )	0.021
	No (n:114)	2	214.16 ( $\pm 8.84$ )	
<b>LAP in FM</b>	Yes (n:16)	4	149.75 ( $\pm 20.89$ )	0.006
	No (n:143)	4	213.09 ( $\pm 8.26$ )	
<b>Histologic type</b>	Papillary (n:153)	8		0.342
	Follicular (n:8)	0		
<b>Vein invasion</b>	Yes (n:16)	3	156.79 ( $\pm 15.98$ )	0.044
	No (n:143)	5	215.02 ( $\pm 7.25$ )	
<b>Adjacent Organ Invasion</b>	Yes (n:12)	3	95.33 ( $\pm 14.84$ )	0.000
	No (n:145)	5	214.01 ( $\pm 7.32$ )	
<b>Papillary Variant Malignant subtype</b>	Yes (n:29)	5	187.47 ( $\pm 17.11$ )	0.030
	No (n:121)	3	202.71 ( $\pm 8.73$ )	
<b>Lymphatic Invasion</b>	Yes (n:17)	2	175.17 ( $\pm 15.16$ )	0.383
	No (n:143)	6	210.81 ( $\pm 8.12$ )	
<b>T stage</b>	1(n:110)	1	222.66 ( $\pm 7.85$ )	0.000
	2 (n:11)	1	184.80 ( $\pm 11.80$ )	
	3 (n:32)	2	201.0 ( $\pm 10.38$ )	
	4a (n:6)	2	72.66 ( $\pm 19.82$ )	
	4b (n:2)	2	6 ( $\pm 5$ )	
<b>N</b>	0 (n:144)	4	214.68 ( $\pm 7.57$ )	0.001
	1a (n:17)	4	152.58 ( $\pm 19.86$ )	
<b>Age and N</b>	Below 45 years of age	0		0.000
	N0 (n:64)	0		
	N1a (n:9)			
	Above 45 years of age	4		
<b>M</b>	N0 (n:80)	4		0.000
	N1a (n:8)			
	0 (n:158)	5	215.39 ( $\pm 6.79$ )	
<b>Multicentricity</b>	1 (n:3)	3	6.33 ( $\pm 2.60$ )	0.041
	Yes (n:39)	5	194.37 ( $\pm 14.78$ )	
<b>Stage</b>	No (n:122)	3	179.63 ( $\pm 4.24$ )	0.000
	1 (n:130)	1		
	2 (n:4)	1		
	3 (n:21)	2		
	4a (n:2)	0		
	4b (n:1)	1		
	4c (n:3)	3		

## DISCUSSION

Generally, papillary and follicular type thyroid cancers, included in differentiated thyroid cancers, have good prognosis. Apart from the histological types of thyroid cancer, several characteristics such as gender, age, extrathyroidal spread, tumor stage, tumor subtype may affect prognosis. Papillary cancers compose 80-85% of all the differentiated thyroid cancers and follicular cancers compose 10-20% of all the differentiated thyroid cancers. In the present study, 172 cases (93.5%) in patient group had papillary cancer and 12 of them (6.5%) had follicular cancer. 159 (86.4%) of the patients with DTC were females and 25 (13.6%) of them were males and females to males ratio was 6.36/1.

The most frequent presenting symptom of our patients was asymptomatic thyroid nodule. In 44 (35%) of 142 nodule palpated patients in their first examinations, the nodule was palpated to be firm. In 16 (8.6%) patients, enlarged lymph nodes were palpated on the neck. 180 (97.8%) of our patients had preoperative ultrasonographic examination. Based on USG findings, 76% of our patients had multiple nodules and 21% of them had single nodule.

We had scintigraphic examination for 59 (32%) patients in our patient group. It was determined that 37 (90%) of 41 (69.5%) patients with cold nodule had papillary carcinoma and 4(10%) of them had follicular carcinoma. 16 (89%) of the 18 (30.5%) patients with hot-warm nodule had papillary carcinoma and 2 of them (11%) had follicular carcinoma. It was observed in the literature that a great majority of the scintigraphic lesions have been composed of cold nodules.

Seven (9.2%) of 76 cases (42%) were assessed to be suspicious material and the other 7 of them (9.2%) were assessed as inadequate material and the final pathologies of these 14 patients were reported as papillary carcinoma in 13 patients and follicular carcinoma in 1 patient.

The aim of surgery is to debulk all of the tumor tissue and metastatic lymph nodes. And this is mainly provided by total thyroidectomy. 30-80% of DTCs may be multicentric (11). All the multifocal focuses are debulked by total thyroidectomy. In the high-risk group, central or lateral neck dissection are added to total thyroidectomy based on the lymph node condition. We performed central lymph node dissection in 14 of the total 20 patients (10.9%) and modified lymph node dissection in 6 of the patients concurrently.

Completion thyroidectomy was recommended for the patients who had inadequate surgery and a tumor size of >1 cm. Because it has been suggested that 50-60% of such patients have bilateral tumors. In addition, bilateral tumor has been found in 60% of the patients who have lobectomy and then followed up for recurrence and distant metastasis (12-16). We performed completion thyroidectomy for 14 patients, 8 of them were in our patient group and 6 of them were referred from other health centers. The final pathologies of the first operation of the 8 patients, who we

performed completion thyroidectomy for, were reported as follicular cancer for 1 patient and papillary cancer for 7 patients.

Although the width of the surgery is not an accurate and reliable method during operation, it may be assessed with frozen examination. In the suspicious conditions, intraoperative frozen procedure should not be avoided. Because the necessity of a second operation is an adversity for both surgeons and patients. We performed frozen examination for 34 patients. The final pathology was determined to be papillary carcinoma in 23 patients, found to be malign in the frozen examination, papillae in 10 of the 13 patients and follicular in 3 of them. In 1 patient for whom the malign-benign distinction could not be performed, papillary carcinoma was determined in the final pathology.

In many studies, the risky age limit has been found to be between 40 and 50. In TNM staging, 45 years of age has been considered as the risky age. In our patient group, no difference was observed in the patients above and below 45 years of age in terms of recurrence. When we assessed in terms of mortality, it was determined that no mortality was observed in 73 patients under the age of 45 and all the mortalities were observed in 8 of 88 patients above the age of 45. In general, males have worse prognosis compared to females (17,18). However, we found in our long-term follow-up that male sex did not have a significant effect on survival.

When the complaints of the patients such as swelling on the neck, aphonia and pressure findings were assessed, it was observed that these were not significant in terms of recurrence and mortality. It was determined that pain on the neck complaint was not significant in terms of recurrence but the survival time of the patients with this complaint were 30 months shorter and their mortality rates were 7.8 times more ( $p=0.021$ ). This may be explained by the local invasion of the tissues adjacent to the thyroid. It was found that the presence of lymphadenopathy in the neck did not affected recurrence and it significantly affected mortality ( $p=0.006$ ).

It has been reported that the survival rates among the patients with papillary thyroid cancer is quite good in general but however it has been reported that the mortality rates vary greatly among the histological subtypes (19). Anaplastic tumor transformation, tall cell papillary variant, columnar cell variant and diffuse sclerosant variants have worse prognosis (20,21). It was observed that the classical type, microcarcinoma and other variant types of the patients with papillary cancer in our group were not significant in terms of recurrence but mortality developed significantly in 3 (2.5%) of 121 patients with papillary variant classical-micro type and 5 (17.2%) of the 29 patients with the other papillary malignant subtype variant ( $p=0.030$ ). In our series, all the recurrences and mortalities were observed in the patient group with papillary cancer. Mortality and recurrence were not observed in patients with follicular cancer. It was considered that this result

was not statistically significant and this may be related to the less number of patients in this group.

Based on the final pathology results, it was determined in the assessment of the capsule, neural, vein, lymphatic invasions that the capsule, neural, vein, lymphatic invasions and the adjacent organ involvement did not affect recurrence in our patients. Also, there were not any effect of capsule, and neural invasion on mortality. On the other side, mortality developed in 5 of 143 (3.5%) patients without vein invasion and in 3 (18.8%) of 16 patients with vein invasion. It was observed that vein invasion was a prognostic factor that statistically and significantly affected mortality ( $p=0.044$ ). The recurrence rate in the local invasive tumors is two times more compared to the noninvasive tumors. Also, 1/3 of the patients from this group die in 10 years (7, 22). In our patient group, a significant relationship was found between the adjacent organ invasion and mortality ( $p<0.001$ ). The mortality rate in the patient group with invasion was 25% and it was found to be 3.4% in the group without invasion. In general, our patients without invasion lived 120 months longer. Mortality in the invasion group was 7.34 times more compared to the group without invasion. There was not any effect of multicentricity on recurrence and it was determined that it had a significant effect on mortality ( $p=0.041$ ). In accordance with the literature, our multicentric patients had more mortality.

TNM staging developed by AJCC is used in the staging of the patients with thyroid cancer. American Thyroid Association (ATA) also recommends TNM classification defined by AJCC. The parameters forming the base of the assessment are age, (limit value, 45), tumor size, lymph node and distant metastasis. In our series, recurrence developed in 4 of 110 patients with T1 tumor and in 1 of the 4 patients with T4a tumor and in 1 patient with 4b tumor. Recurrence developed in the 1st month in the patients with T4b tumor. Mortality was observed in only 1 of 110 patients with T1 and in 4 of the 8 patients with T4a and 4b. It was found that T stage, in accordance with the literature, statistically and significantly affected both recurrence ( $p<0.001$ ) and mortality ( $p<0.001$ ).

Unlike the other malign tumors, the prognostic importance of the regional lymph node metastasis is questionable in differentiated thyroid cancers. In several studies, the presence of lymph node metastasis in differentiated thyroid carcinomas has not been considered as an indication of bad prognosis and it has been emphasized that it has not an effect on recurrence and survival (18,23-26). On the other hand, in some other studies, it has been stated that the regional lymph node involvement is a risk factor for recurrence and mortality. Especially, when there is bilateral cervical or mediastinal lymph node involvement or in the conditions in which tumor is invasive in lymph node capsule, the distant organ metastasis is found to have a relationship with lymphatic involvement (7,27,28). When we assessed our patients with N0 and N1a in terms of recurrence, no significant difference was observed. In

spite of that, 4 (2.8%) of 144 patients with N0 lymph node and 4 (23.5%) of 17 patients with N1a lymph node had mortality. In the present study, pathological lymph node involvement did not affect recurrence while it was found to affect mortality significantly ( $p=0.001$ ).

The effect of the presence of lymph node and age on mortality was researched by taking 45 years of age limit into consideration. Mortality was mostly observed in 64 patients under the age of 45 and with N0 lymph node and in 19 patients under the age of 45 and with N1a lymph node and mortality was determined in 4 of 80 patients with N0 older than 45 years and in 4 of 8 patients with N1a. As stated in TNM staging system, it was observed that the lymph node involvement did not have an effect on mortality under the age of 45.

Distant metastasis is the main cause of death in papillary and follicular cancers. Distant metastasis develops in about 10% of papillary cancers and at the rate reaching to 25% in follicular cancers (29). It was determined in our patient group that the average estimated general survival of 3 patients with distant metastasis was 6.33 ( $\pm 2.60$ ) months and all these 3 patients had mortality. It was observed that the average estimated general survival of 158 patients without metastasis was 215.39 ( $\pm 6.79$ ) months and 5 of these patients had mortality. As stated in the literature, it was observed that metastasis reduced the survival time and increase mortality ( $p<0.001$ ).

In a patient group assessed with TNM classification, it has been reported that survival for 20 years has been 100% in Stage I but survival for 20 years has not been observed in the patients in Stage IV (30). In the assessment of our patients based on their stages, it was determined that recurrence developed in 6 of 134 patients in Stages I-II, in 2 of 20 patients in Stage III and 1 of 1 patient in Stage IVb. No recurrence was observed in 2 patients in Stage IVa ( $p<0.001$ ). Mortality was observed in only 2 of 134 patients in Stage I-II and in 2 of the 21 patients in Stage III. Mortality was not observed in 2 patients in Stage IVa and mortality was observed in 1 patient in Stage IVb and in 3 patients in 4c. It was found in our study that the stage of disease statistically and significantly affected recurrence and mortality, in accordance with the literature (31,32).

## CONCLUSION

As a result, painful nodule on the neck and palpated lymph node in the first examination of the patients did not affect recurrence but both affected mortality significantly. As a result of the univariate analysis of the clinical, laboratory and pathological factors of the patients, it was found that T stage and final stage had an effect on recurrence, the presence of malignant subtype variant of tumor, the presence of vein and adjacent organ invasion, the presence of multicentricity and T stage affected lymph node involvement and distant metastasis, and age limit and pathological stage affected mortality. For this reason, it is important that patients are followed closely with a postoperative multidisciplinary approach.

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