Journal of Nuclear Medicine & Radiation Therapy

Laketic, J Nucl Med Radiat Ther 2018, 9: 6
DOI: 10.4172/2155-9619.1000392

Short Communication Open Access

Difference between T Classification, Histopathological and Biohumoral Characteristics of the Two Most Common Papillary Carcinoma Subtypes

Nenad Laketic*, Kata Kovacic and Aleksandar Simic

Nuclear Medicine Specialist, Special Hospital for Thyroid Gland and Metabolism Čigota, Zlatibor, Serbia

***Corresponding author:** Nenad Laketic, Nuclear Medicine Specialist, Special Hospital for Thyroid Gland and Metabolism Čigota, Zlatibor, Serbia, E-mail: nenad.s.laketic@gmail.com

Received date: October 17, 2018; **Accepted date:** December 11, 2018; **Published date:** December 18, 2018

Abstract

Papillary thyroid carcinoma is the most common thyroid gland cancer. Among several subtypes, classical (CVPC) and follicular (FVPC) subtype are the most frequent. The most important tumor characteristics for therapy planning and outcome are size/presence of extra thyroid invasion, multicentricity, lymphatic, vascular and capsule invasion, spreading in local lymph nodes. Level of Thyroglobulin is indirect indicator of tissue remnant after surgery. Among 20 patients with CVPC and 33 with FVPC we found out that there is statistically important difference between these two subtypes of PC regarding T stadium, lymphatic and capsule invasion and spread in local lymph nodes of the neck. CVPC has these characteristics significantly more often than FVPC. The difference between these two subtypes is not statistically important regarding multicentricity, vascular invasion and the level of thyroglobulin.

Keywords: Papillary thyroid carcinoma; Follicular variant of papillary carcinoma; Classic variant of papillary carcinoma

Introduction

Conducting additional radioactive iodine treatment in 1200 patients operated due to differentiated thyroid gland cancer for 8 years, our subjective impression is that patients with initially more severe stage and more complicated treatment had a follicular variant of papillary carcinoma (FVPC). The aim of this paper is to compare the two most common subtypes of papillary carcinoma, classic (CVPC) and follicular (FVPC) in T stage, multicentricity, lymphatic, vascular, invasion of tumor capsules, extension to local lymph nodes and initial thyoglobulin levels at the time of application of radioactive iodine therapy (Tables 1 and 2) [1].

No	T stadium	multic	L1	V1	K1	N1	Tg0	Tgmed	Tg0-Tgmed	X2
1	1	1	1	0	1	1	3,26	21,5	-18,24	3,326,976
2	3	1	1	0	1	1	151	21,5	129,5	16770,25
3	1	0	0	0	0	0	0,36	21,5	-21,14	4,468,996
4	1	0	0	0	0	0	0,2	21,5	-21,3	453,69
5	3	0	1	0	1	1	0,8	21,5	-20,7	428,49
6	3	0	1	0	1	1	0,35	21,5	-21,15	4,473,225
7	3	0	1	0	1	1	76,9	21,5	55,4	3069,16
8	3	0	1	0	1	1	0,2	21,5	-21,3	453,69
9	2	0	1	0	0	1	9,54	21,5	-11,96	1,430,416
10	1	0	1	0	0	1	12,1	21,5	-9,4	88,36
11	3	0	1	0	1	1	34,5	21,5	13	169
12	1	0	1	0	0	0	0,63	21,5	-20,87	4,355,569
13	3	0	1	0	0	1	0,33	21,5	-21,17	4,481,689
14	2	1	1	0	0	1	23,4	21,5	1,9	3,61
15	3	1	1	1	1	1	13	21,5	-8,5	72,25

16	3	0	1	0	1	0	3	21,5	-18,5	342,25
17	3	0	1	0	1	0	0,92	21,5	-20,58	4,235,364
18	3	1	1	0	1	0	1,1	21,5	-20,4	416,16
19	1	0	1	0	0	0	0,4	21,5	-21,1	445,21
20	2	0	1	1	0	1	98,2	21,5	76,7	5882,89
21	%	25	90	10	55	65	215,095		Σ	31272,23
22									Σ/n-1	1,645,907
23									SD	41

Table 1: Classic variant of papillary carcinoma (CVPC); L1-lymphatic vessels invasion, V1-vascular invasion, K1-capsular invasion, N1-lymphatic nodes invasion, Tg0-initial thyroglobuline levels, T1,T2,T3-histopatological T stadium.

No	T stad	multice	L1	V1	K1	N1	TG0	Tgmed	TG0-Tgmed	X2
1	2	0	1	0	0	0	2,61	18,74	-16,13	260,1769
2	1	1	1	0	1	0	0,43	18,74	-18,31	335,2561
3	1	1	1	1	1	1	1,25	18,74	-17,49	305,9001
4	1	1	1	0	0	0	3,37	18,74	-15,37	236,2369
5	1	0	1	1	0	1	1,66	18,74	-17,08	291,7264
6	1	1	0	0	0	0	2	18,74	-16,74	280,2276
7	1	1	1	0	0	1	0,04	18,74	-18,7	349,69
8	2	1	1	0	0	0	1,74	18,74	-17	289
9	2	0	1	0	0	0	0,96	18,74	-17,78	316,1284
10	2	1	0	1	0	0	2,58	18,74	-16,16	261,1456
11	1	1	0	0	0	0	12,7	18,74	-6,04	36,4816
12	2	0	0	0	0	0	4,3	18,74	-14,44	208,5136
13	1	0	1	0	0	0	5,4	18,74	-13,34	177,9556
14	2	0	0	0	0	0	0,55	18,74	-18,19	330,8761
15	3	0	0	1	0	0	7,1	18,74	-11,64	135,4896
16	1	0	1	0	0	1	300	18,74	281,26	79107,19
17	1	0	0	0	0	0	0,2	18,74	-18,54	343,7316
18	2	0	0	0	0	0	0,2	18,74	-18,54	343,7316
19	1	0	1	0	0	0	0,46	18,74	-18,28	334,1584
20	1	0	1	0	1	0	23,5	18,74	4,76	22,6576
21	2	1	1	1	0	1	0,2	18,74	-18,54	343,7316
22	1	1	0	0	0	0	0,2	18,74	-18,54	343,7316
23	1	0	0	0	0	0	0,81	18,74	-17,93	321,4849
24	1	1	1	0	0	0	0,31	18,74	-18,43	339,6649
25	1	1	0	0	0	0	1,1	18,74	-17,64	311,1696

26	1	1	1	0	0	0	0,2	18,74	-18,54	343,7316
27	2	0	0	0	0	0	12,9	18,74	-5,84	34,1056
28	3	1	1	0	0	1	0,4	18,74	-18,34	336,3556
29	3	1	1	0	0	0	0,63	18,74	-18,11	327,9721
30	1	0	1	0	0	0	0,2	18,74	-18,54	343,7316
31	1	0	1	0	0	0	0,2	18,74	-18,54	343,7316
32	2	1	1	0	0	0	1,1	18,74	-17,64	311,1696
33	3	0	1	1	1	1	229	18,74	210,26	44209,27
	%	48,48	63,64	18,18	12,12	21,21	18,74		Σ	131876,12
									Σ/n-1	4121,129
									SD	64

Table 2: Folicullar variant of papillary carcinoma (FVPC); L1-lymphatic vessels invasion, V1-vascular invasion, K1-capsular invasion, N1-lymphatic nodes invasion, Tg0-initial thyroglobuline levels, T1,T2,T3-histopatological T stadium.

Methods

Since histopathological reports are largely incomplete and do not contain all the indicated tumor characteristics in the study, we included 20 patients with classical and 33 patients with follicular papillary carcinoma subtype [2]. The study excluded patients with multiple subtypes of papillary carcinoma. In addition to the impact of the histopathological findings on the results of the work, the quality of the performed surgical treatment must be taken into account, since the higher initial postoperative tissue residues will give more initial tireoglobulin values. We used chi square test for two independent samples [3].

Results and Discussion

Tumor size

All patients included in the study were stages from T1 to T3.
In CVPC T1 stage had 30% of patients, T2 15%, and T3 55% of patients. In FVPC T1, the stage was found at 57.6%, T2 at 30.3% and T3 in 12.1% of patients [4]. The difference in tumor size (T stage) is statistically significant in T1 (p=0.05) and T3 (p<0.001) (Table 3).

- **Multicentricity:** It is present in 25% of patients with CVPC and 48.5% with FVPC. The difference is not statistically significant (p=0.0998).
- **Lymphatic invasion:** Present in 90% of patients with CVPC and 63.64% with FVPC. The difference is statistically significant (p<0.05)
- **Vascular invasion:** Present in 10% of patients with CVPC and 18.18% with FVPC. The difference is not statistically significant (p=0.43).
- **Capsular invasion:** Present in 55% with CVPC and 12.12% FVPC. The difference is statistically significant (p<0.001).
- **Extension to local lymph nodes:** At 65% with CVPC and 21.21% in FVPC. The difference is statistically significant (p<0.05).
- **Initial Thyroglobulin levels:** In CVPC 21.51 ng / mL, in FVPC 18.74 ng / mL. The difference is not statistically significant (p=0.85).

	CVPC (%)	FVPC (%)	stat diff
Multicentricity	25	48,48	P=0.0998
L1	90	63,64	P<0.05
V1	10	18,18	P=0.4333
K1	55	12,12	P<0.001
N1	65	21,21	P<0.05
Tg0	21,51	18,74	p=0,85
T1	30	57,60	P<0.0500
T2	15	30,30	P=0.1488
T3	55	12,10	P<0.001

Table 3: Statistical difference between CVPC and FVPC; L1-lymphatic vessels invasion, V1-vascular invasion, K1-capsular invasion, N1-lymphatic nodes invasion, Tg0-initial thyroglobuline levels, T1,T2,T3-histopatological T stadium.

Conclusion

The difference between CVPC and FVPC is statistically significant at T stage. CVPCs are dominated by tumors of greater diameter and/or with signs of periglandular invasion (higher T stage), while tumors of FVPC are mostly of smaller diameter or without the signs of invasion (lower T stage). The difference is statistically significant in lymphatic invasion, capsular invasion and extension in local lymph nodes. In CVPC these characteristics are more commonly shown than in the FVPC. The difference is not statistically significant in the case of multicentricity, vascular invasion, and level of thyroglobulin at the time of administration of radioactive iodine therapy.

Note: It is necessary to insist on complete histopathological reports that would contain all relevant tumor characteristics. This is particularly important in microcarcinomas where in practice the use of radioactive iodine for ablative purposes is rarely advocated.

References

1. Burns WR, Zeiger MA (2010) Differentiated thyroid cancer, Seminars in Oncology 37: 557-566
2. Cooper DS, Doherty GM, Haugen BR, Kloos RT, Lee SL, et al. (2006) Management guidelines for patients with thyroid nodules and differentiated thyroid cancer: The American Thyroid association guidelines taskforce. Thyroid 16: 2
3. Liu J, Singh B, Tallini G, Carlson DL, Katabi N, et al. (2006) Follicular variant of papillary thyroid carcinoma. Cancer 107: 1255-1264
4. Sacks W (2016) Follicular variant of papillary thyroid cancer has a better prognosis than classic or tall-cell variant of papillary thyroid cancer, Thyroid, Clinical Thyroidology for the Public 9: 5