

Clinical Science

Papillary thyroid carcinoma: prognostic significance of cancer presentation



Heywood Choi, M.D., F.R.C.P.C.^a, Katayoon Kasaian, B.Sc., B.C.S.^b,
Adrienne Melck, M.D., F.R.C.S.C.^c, Kaye Ong, B.Sc.^c,
Steven J. M. Jones, Ph.D.^d, Adam White, M.D., F.R.C.P.C.^a,
Sam M. Wiseman, M.D., F.R.C.S.C.^{c,*}

^aDivision of Endocrinology, Department of Medicine, St Paul's Hospital & University of British Columbia, 1081 Burrard Street, Vancouver, British Columbia, Canada; ^bMichael Smith Genome Sciences Center, British Columbia Cancer Research Center, 100-570 West 7th Avenue, Vancouver, British Columbia, Canada; ^cDepartment of Surgery, St Paul's Hospital & University of British Columbia, 1081 Burrard Street, Vancouver, British Columbia, Canada V6Z 1Y6; ^dDepartment of Medical Genetics, University of British Columbia and Michael Smith Genome Sciences Center, British Columbia Cancer Research Center, 100-570 West 7th Avenue, Vancouver, British Columbia, Canada

KEYWORDS:

Papillary thyroid carcinoma;
Cancer presentation;
Cancer prognosticator

Abstract

BACKGROUND: The objective of this study was to evaluate whether the clinical presentation of papillary thyroid carcinoma (PTC) has prognostic significance.

METHODS: Retrospective evaluation was carried out of sequential, primary presentation, >1 cm diameter, PTC cases treated at a single center. PTC cases were grouped into 3 groups: (1) incidental detection by imaging, (2) incidental detection by physical examination, and (3) detection because of complaints related to a thyroid mass. The MACIS (metastasis, age, completeness of resection, invasion, and size) system was used to determine cancer prognosis for each group.

RESULTS: Of the 168 PTC cases, 28 patients (17%) were in group 1, 60 patients (36%) were in group 2, and 80 patients (47%) were in group 3. Overall, 53% of differentiated thyroid cancers were detected incidentally. The difference in the proportion of patients in each MACIS score groups among the 3 clinical presentation categories, and for each component of the MACIS score, was not statistically significant ($P = .36$).

CONCLUSION: The manner in which PTC initially clinically presents has no relationship with cancer prognosis.

© 2015 Elsevier Inc. All rights reserved.

Differentiated thyroid cancer (DTC) incidence has increased markedly over the past several decades. DTC's overall incidence has increased from 1.3/100,000 for women and 4.6/100,000 for men in 1935, to 16.3/100,000 for women and 5.6/100,000 for men in 2008.¹ Age-adjusted incidence increased by 4.3% per year between 1992 and 2001, which is the most rapid rise of all cancer types.²

The authors declare no conflicts of interest.

* Corresponding author. Tel.: +1-604-806-9108; fax: +1-604-806-9957.

E-mail address: smwiseman@providencehealth.bc.ca

Manuscript received October 3, 2014; revised manuscript December 15, 2014

This increase is mostly because of papillary thyroid carcinoma (PTC), with 87% of this rising incidence being attributed to tumors smaller than 2 cm.³ However, over this time period, thyroid cancer mortality has remained stable.^{4,5} This suggests that thyroid cancers that may have remained subclinical during a patient's lifetime are now being detected and treated. In addition, patients with PTC that is limited to the thyroid gland have extremely favorable outcomes, with disease-specific mortality that ranges between 2% and 4%.⁶ Total thyroidectomy, currently the cornerstone of PTC treatment, carries a risk of permanent hypoparathyroidism and laryngeal nerve injury that ranges between 0% and 5%.⁷ It has also been shown that the survival rate did not differ between patients who receive immediate definitive treatment compared with those who did not receive such treatment.⁶ Regardless, many patients would find a watchful waiting approach, after a thyroid cancer diagnosis, unacceptable. It is assumed that increased utilization of medical imaging has been a major reason behind increased detection and evaluation of incidentally diagnosed thyroid nodules, but little data are available to validate this belief. A recent retrospective cohort study revealed that only 27% of thyroidectomies at a single center were carried out because of symptoms directly attributed to a thyroid mass.⁸ Current American Thyroid Association Guidelines for thyroid nodule management suggest that fine-needle aspirate biopsy (FNAB) should be based on nodule size, ultrasound characteristics, patient family history of thyroid cancer, and a history of prior radiation exposure.⁹ Currently, thyroid nodule management guidelines do not take into account how the thyroid nodule was detected or whether it causes symptoms.

Many multifactorial-based risk stratification systems have been developed to estimate disease-specific mortality for DTC. For example, the MACIS (metastasis, age, completeness of resection, invasion, and size) system,¹⁰ developed at the Mayo Clinic, is widely utilized and has been validated.¹¹ However, it is not currently known whether the manner in which a thyroid cancer presents has prognostic significance that could impact subsequent management. We hypothesized that PTCs that are preoperatively detected incidentally carry a more favorable prognosis and thus thyroid nodules that are detected incidentally may potentially be managed more conservatively.

Patients and Methods

We conducted a retrospective cohort study utilizing a prospectively maintained thyroid cancer database from St Paul's Hospital, Vancouver, BC, Canada. St Paul's Hospital is a tertiary care referral center for the management of thyroid disease and cancer. This database contains clinical and pathological information for thyroid cancer patients treated surgically at our center between 2000 and 2013. The charts of patients treated between January 2000 and January 2013 were reviewed to identify the initial event

that led to thyroid cancer detection. These initial events were then grouped into 3 categories as follows:

- (1) Incidental Imaging Detection Group: The detection of thyroid nodule by imaging performed for indications unrelated to the thyroid mass.
- (2) Incidental Physical Examination Detection Group: The thyroid nodule detected by a clinician during an evaluation for complaints not related to a thyroid mass.
- (3) Nonincidental Detection Group. The patient presents with complaints possibly related to the thyroid mass such as dysphagia, dysphonia, neck pain, self-detection of a neck mass, or self-requested screening for thyroid cancer.

Anaplastic and medullary thyroid carcinomas were excluded from our study group as these cancers tend to present with clinical signs and symptoms and have more aggressive natural history. We also excluded micropapillary carcinoma (PTC < 1 cm in size) as the vast majority of these cancers are detected incidentally after surgery for benign disease. Follicular carcinomas were also excluded because the MACIS system does not allow for their accurate prognostication.¹⁰ The MACIS thyroid cancer risk stratification system was then used to calculate a prognostic score reflecting the 20-year disease-specific survival for each PTC case.¹⁰ The 20-year disease-specific survival rate is 99% for MACIS score less than 6, 89% for MACIS score 6 to 6.99, 56% for MACIS score 7 to 7.99, and 24% for MACIS score greater than 8.¹⁰ Significant associations between the type of PTC presentation and MACIS score, as well as with each component of the MACIS score, were assessed using the Fisher's exact test. Scripts written in the R programming language (version 3.1.1, R Development Core Team, R Foundation for Statistical Computing, Vienna, Austria) were used for these analyses. *P* values were corrected for multiple testing using the Benjamini-Hochberg correction.¹² All statistical tests were 2 tailed and a *P* value of less than .05 was considered statistically significant.

Results

One hundred sixty-eight PTC patients met study inclusion criteria and made up the study patient population. There were 126 women and 42 men in the study population. Twenty-eight (17%) patients had incidental imaging that led to their PTC detection, 60 (36%) patients had their PTC detected incidentally during a physical examination by a physician, and 80 (47%) patients presented with complaints related to a thyroid mass. Overall, 53% of PTCs were detected incidentally. There was no significant difference in gender and whether PTC presented incidentally or symptomatically. The distribution of MACIS scores for patients in the incidental imaging PTC-detected group was as follows: less than 6 (85%), 6 to 6.99 (4%), 7 to 7.99

Download English Version:

<https://daneshyari.com/en/article/4278291>

Download Persian Version:

<https://daneshyari.com/article/4278291>

[Daneshyari.com](https://daneshyari.com)