

# Highlights of 15th Biennial Congress of the Asian Association of Endocrine Surgeons, April 2016

## Prophylactic Central Neck Dissection in Papillary Thyroid Carcinoma: A Prospective Randomized Controlled Study in a Single Institution

<sup>1</sup>Inhye Park, <sup>2</sup>Nayoon Her, <sup>3</sup>Jun-Ho Choe, <sup>4</sup>Jung-Han Kim, <sup>5</sup>Jee Soo Kim

<sup>1-5</sup>Department of Surgery, Division of Breast and Endocrine Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

### BACKGROUND AND AIMS

The efficacy of prophylactic central neck dissection (pCND) in patients with papillary thyroid carcinoma (PTC) is still unclear. The aim of this prospective randomized controlled study was to evaluate the clinical strengths and weaknesses of pCND.

### METHODS

Between May 2009 and September 2015, a total of 1,134 patients with clinical N0 PTC were randomly assigned to two groups. Group A was treated with thyroidectomy alone and group B was treated with thyroidectomy + pCND. When the surgeon detected extrathyroidal extension or suspicious lymph nodes during the operation, frozen biopsy was performed to confirm the metastasis and the patients were excluded. We analyzed the clinicopathologic characteristics, postoperative complications, and recurrence.

### RESULTS

Of the 1,134 patients, 110 were excluded because they had evidence of either capsular invasion or lymph node metastasis proven by frozen biopsy during the operation (rate of dropout: 9.7%). A total of 1,024 patients were included, 504 patients in group A and 520 patients in group B. In group B, 67 patients had ipsilateral central lymph node metastasis in frozen biopsy that were converted to total thyroidectomy. Clinicopathologic characteristics of the two groups were not significantly different. The median follow-up period was 20 months (1–77 months). Recurrence was detected in three patients (0.3%) in the lateral lymph node. Disease-free survival was not statistically significantly different between the two groups ( $p = 0.561$ ). However, the incidence of temporary hypoparathyroidism in group B was significantly higher than that in group A (group A: 13.1%, group B: 20.8%,  $p = 0.001$ ), while the permanent hypoparathyroidism, vocal cord palsy, chyle leakage, bleeding, and wound infection were similar between groups A and B.

### CONCLUSION

Prophylactic central neck dissection did not reduce locoregional recurrence in clinical N0 PTC, but it significantly increased the incidence of transient hypoparathyroidism. But the assessment of effectiveness of pCND in reducing recurrence and mortality requires a long-term follow-up.

## The Missing Link: Between Ki-67 and Papillary Thyroid Carcinoma

<sup>1</sup>Shahrn Niza Abdullah Suhaimi, <sup>2</sup>Mohamad Aznan Shuhaili, <sup>3</sup>Nurismah Md Isa

<sup>4</sup>Suria Hayati Md Pauzi, <sup>5</sup>Shamsul Azhar Shah, <sup>6</sup>Rohaizak Muhammad

<sup>1,2,6</sup>Department of Surgery, UKM Medical Center, Jalan Yaakub Latiff, Kuala Lumpur, Malaysia

<sup>3,4</sup>Department of Pathology, UKM Medical Center, Jalan Yaakub Latiff, Kuala Lumpur, Malaysia

<sup>5</sup>Department of Public Health, UKM Medical Center, Jalan Yaakub Latiff, Kuala Lumpur, Malaysia

### BACKGROUND AND AIMS

Ki-67 is commonly associated with cellular proliferative activity. For thyroid neoplasm, Ki-67 has been thoroughly investigated for benign and malignant nodule. However, very limited studies have focused on the link between prognostic factors of papillary thyroid carcinoma (PTC) and Ki-67. The objective of this study was to determine the prognostic significance of Ki-67 among PTC patients. We compared Ki-67 with MACIS (metastasis, age, completeness of resection, invasion, size) scoring system. By correlating Ki-67 with poor prognostic features of thyroid carcinoma, we hoped to predict tumor recurrence in PTC, enabling close monitoring and surveillance.

### METHODS

A total of 46 PTC patients whom had undergone surgery from 2008 to 2013 were involved in this study. All of the surgical specimens were analyzed for Ki-67 through immunohistochemistry (IHC), and two independent pathologists evaluated the result for Ki-67. We compared Ki-67 with various prognostic factors for PTC.

## RESULTS

There was no significant relation between Ki-67 and age, tumor size, cervical lymph nodes involvement, and complete tumor removal during the initial surgery ( $p > 0.05$ ). However, there was significant link between Ki-67 and extra-thyroidal extension ( $p = 0.006$ ), vascular invasion ( $p = 0.006$ ), and distant metastasis ( $p = 0.005$ ). Ki-67 was significantly reduced among low-risk groups of PTC ( $p = 0.007$ ). Tumor recurrence at 3 years was significant with Ki-67 ( $p = 0.01$ ). In the presence of an increased Ki-67, the incidence of PTC recurrence was 86.3% with PPV (35.7%), NPV (100%), sensitivity (100%), and specificity (70%).

## CONCLUSION

Ki-67 proliferative index correlates well with several poor prognostic features such as extra-thyroidal extension, vascular invasion, and distant metastasis. Ki-67 is shown to be lower among low-risk PTC patients. Ki 67 is also a good diagnostic tool to predict the recurrence of PTC.

## Parathyroid Carcinoma: 234 Cases in China

<sup>1</sup>Peisong Wang, <sup>2</sup>Shuai Xue, <sup>3</sup>Guang Chen

<sup>1-3</sup>Department of Thyroid Surgery, The First Hospital of Jilin University, Changchun, Jilin, China

## BACKGROUND AND AIMS

Diagnosis and treatment of parathyroid carcinoma (PC) was retrospectively analyzed for the past 30 years in China in order to raise an awareness about this disease.

## METHODS

First we searched the three Chinese databases (from 1984 to 2015) "VIP Periodical Resource Integrated Service Platform," "China National Knowledge," and "Wanfang Data" using the keywords "parathyroid cancer" and "parathyroid tumors."

## RESULTS

A total of 234 cases of PC were reported during the past 30 years. Initial surgery underwent radical resection rate was 60.26% (141 cases). A total of 65 cases underwent surgery more than once (effective 46 cases) among 91 cases of recurrence patients. A total of 25 patients died of PC. Radical surgery of the first operation significantly prolonged recurrence-free survival. Reoperation significantly prolonged disease-specific survival time for patients with recurrence PC. COX regression analysis showed whether the first operation performed by radical surgery was an independent risk factor for postoperative recurrence. Males and patients without reoperation after recurrence are independent risk factors associated with increased mortality. Five- and ten-year cumulative disease-specific survival rates of PC were 83 and 67% respectively.

## CONCLUSION

The incidence of PC has been increasing every year. Parathyroid carcinoma misdiagnosis rate is still high. Whether the first operation performed radical surgery is critical to reduce the recurrence rate. We should re-operate positively after recurrence.

## Laryngotracheal Resection in Locally Advanced Thyroid Carcinoma

<sup>1</sup>Siddhartha Chakravarthy Nalukurthi, <sup>2</sup>Deepak Abraham, <sup>3</sup>Anish Jacob Cherian

<sup>4</sup>Birla Roy Gnanamuthu, <sup>5</sup>Suma Susan Mathew, <sup>6</sup>Regi Oomen, <sup>7</sup>B Selvamani, <sup>8</sup>MJ Paul

<sup>1-3,8</sup>Department of Endocrine Surgery, Christian Medical College, Vellore, Tamil Nadu, India

<sup>4</sup>Department of Cardiothoracic Surgery, Christian Medical College, Vellore, Tamil Nadu, India

<sup>5</sup>Department of ENT, Christian Medical College, Vellore, Tamil Nadu, India

<sup>6</sup>Department of Nuclear Medicine, Christian Medical College, Vellore, Tamil Nadu, India

<sup>7</sup>Department of Radiation Therapy, Christian Medical College, Vellore, Tamil Nadu, India

## BACKGROUND AND AIMS

Thyroid cancer with transmural invasion of trachea and larynx is associated with significant morbidity and mortality. Appropriate surgical resection leads to symptomatic relief and improved survival in selected patients.

## METHODS

We present a retrospective review of 13 patients who underwent laryngotracheal resections for thyroid carcinoma from January 2011 to October 2015.

## RESULTS

Thirteen patients underwent laryngotracheal resection, of which 11 had tracheal resection and anastomosis and 2 had total laryngectomy. Majority of our patients (10) were older than 45 years and 69% (9) were women. The average size of tumor was 3.5 cm on computed tomography. Stridor was present in 77%, dysphagia in 30%, and hemoptysis in 23% of the patients. Preoperative unilateral recurrent laryngeal nerve (RLN) palsy was seen in 46% (6) of the patients.

Out of 13 patients, 10 underwent primary surgical resection and 3 underwent resection for recurrent disease. Two patients needed sternotomy for excision of the infiltrative retrosternal disease. The average tracheal length excised was 2.67 cm (1.7–5 cm) and microscopic positive margins were present in three patients. On histopathology, well-differentiated thyroid carcinoma was seen in 8 patients (61%), poorly differentiated thyroid carcinoma in 3 (23%), medullary (exon 14 GTG804ATG mutation positive) in 1, and anaplastic in 1 patient (this was diagnosed postoperatively).

Three patients had permanent postoperative RLN palsy; two of them needed tracheostomy due to airway compromise and both had preoperative RLN nerve palsy.

There was no perioperative mortality; two patients died during follow-up (one died after 3 months due to metastatic anaplastic thyroid carcinoma, and one died after 9 months, cause unknown).

Postoperative radioactive iodine scan was positive in seven patients, and four patients received radiotherapy.

## CONCLUSION

Laryngotracheal resection is a feasible surgical option for locally advanced thyroid carcinoma. However, each patient's treatment has to be individualized after discussing with a multidisciplinary team for successful outcomes.

## Surgeon-performed Thyroid Fine Needle Aspiration at One-stop Thyroid Nodule Clinic Improves Efficiency of Care

<sup>1</sup>Rajeshbhai Patel, <sup>2</sup>Matthew Shears, <sup>3</sup>Alex Gorelik, <sup>4</sup>Robert Tasevski, <sup>5</sup>Anita Skandarajah, <sup>6</sup>Julie A Miller

<sup>1-6</sup>Department of Surgery, Endocrine Surgery Unit, Royal Melbourne Hospital, Parkville Victoria, Australia

## BACKGROUND AND AIMS

Thyroid nodules are the most common presenting complaint for endocrine surgeons, and many require ultrasound-guided fine needle aspiration cytology (US-FNAC). The time between referral and diagnosis causes heightened anxiety in patients. In an attempt to streamline our service, we introduced same-day surgeon-performed US-FNAC (one-stop clinic) in August 2014. We evaluated the impact of this new model of care.

## METHODS

Three groups were defined: (A) retrospective group with FNAC performed in the radiology department prior to August 2014, (B) prospective radiology-FNAC group, and (C) prospective one-stop clinic group. Patient demographics, nodule characteristics, cytology, and management plans were extracted from a prospectively collected database. The number and dates of hospital attendances were extracted from the hospital information system. Stata12 statistical package was used to perform Fisher's exact test for categorical data and Kruskal-Wallis for continuous data. A p-value < 0.05 was considered statistically significant.

## RESULTS

Three years of retrospective data and 1 year of prospective data were collected. A total of 635 patients underwent 757 FNAC. Patient demographics and nodule size did not differ between groups. Those undergoing FNAC in the one-stop clinic required two visits prior to receiving a management plan, compared to three visits for those performed in radiology. Nondiagnostic rates, malignant FNAC results, and median time from US-FNAC to definitive management plan are shown in Table 1. The introduction of the one-stop clinic resulted in a 41% reduction in patients attending the radiology department for thyroid FNAC.

**Table 1:** Ultrasound-guided fine needle aspiration cytology to definitive management plan

	Group A	Group B	Group C	p-value
n	438	78	119	
Nondiagnostic FNA	6.5%	7.4%	5.4%	NS
Malignant FNA	3%	4%	8%	p = 0.015
Time: US-FNAC to management plan (days)	42	41	14	p < 0.001

NS: Not significant

## CONCLUSION

Surgeon-performed US-FNAC decreases the time from FNA request to definitive plan and reduces the number of patient visits, providing more efficient care. Patients referred to the endocrine surgery clinic with thyroid nodules have thyroid cancer more frequently than patients referred to radiology.

# Detecting Asymptomatic Papillary Thyroid Carcinoma: Overdiagnosis or Preventive Measure?

<sup>1</sup>Hiroki Tokumitsu, <sup>2</sup>Kento Haniu, <sup>3</sup>Momoko Sakurai, <sup>4</sup>Erin Nagai, <sup>5</sup>Yusaku Yoshida  
<sup>6</sup>Yoko Omi, <sup>7</sup>Akiko Sakamoto, <sup>8</sup>Kiyomi Horiuchi, <sup>9</sup>Takahiro Okamoto

<sup>1-9</sup>Department of Surgery II, Division of Endocrine Surgery, Tokyo Women's Medical University, Tokyo, Japan

## BACKGROUND AND AIMS

Thyroid cancer screening programs have been criticized because they may lead to overdiagnosis and overtreatment. In fact, papillary thyroid carcinoma (PTC) has been deemed an indolent disease that may not go on to cause symptoms or death in one's lifetime. A few patients, however, suffer from advanced disease even though they are asymptomatic. The aim of this study was to appreciate clinical stages of PTCs without any symptoms.

## METHODS

Among 394 patients who underwent initial surgery for PTC from 2010 to 2013, 263 (67%) were found to be asymptomatic. Medical records were reviewed to collect the following variables: demographic data, preoperative TNM classification, operative findings including surgical procedures, surgical complications, pathological findings, postoperative TNM classifications, adjuvant or additional therapies, and follow-up observations.

## RESULTS

The male-to-female ratio was 80:183. The median age was 54 years (18–84 years). Papillary thyroid carcinomas were discovered through “health checkup” programs in 193 patients (73%), during diagnostic testing for other health conditions in 53 patients (20%), and at follow-up observations on other thyroid or parathyroid diseases in 17 patients (6%). Preoperative evaluation revealed that 148 patients had low-risk (T1N0M0) PTC (56%) while 20 patients contracted high-risk (T ≥ 5 cm or extra-thyroidal extension or large metastatic N1 or M1) PTC (8%). Additional 19 patients had turned out to have tumor invasion to the adjacent structures at surgery.

## RESULTS

About one-sixth of patients with asymptomatic PTC had advanced disease. Incidental discovery of the disease may provide a good chance to cure such patients.