



## THYROID CANCER

# Do patients with multiple papillary thyroid cancers have a worse prognosis compared to those with a single cancer?

### BACKGROUND

Papillary thyroid cancer is the most common cause of thyroid cancer. There is some uncertainty about the clinical importance and treatment implications of having multiple cancers in the thyroid (multifocal papillary thyroid cancer) as opposed to a single cancer (unifocal papillary thyroid cancer). In addition, there have been some conflicting reports examining whether multifocal papillary thyroid cancer is a risk factor for thyroid cancer recurrence (i.e. disease coming back after treatment).

This study was performed to examine the independent risk of multifocal papillary thyroid cancer in predicting thyroid cancer outcomes, including cancer recurrence and death. In order to account for potential differences in the characteristics of the patients that could also impact risk of disease outcomes, the authors performed a study in which statistical techniques were used to adjust for differences between groups.

### THE FULL ARTICLE TITLE

Geron Y et al 2019 Multifocality Is not an Independent Prognostic Factor in Papillary Thyroid Cancer: A Propensity Score–Matching Analysis *Thyroid* 29:513–522.

### SUMMARY OF THE STUDY

The authors reviewed the medical records of patients with classical or follicular variant papillary thyroid cancer who were treated at the Assaf Harofeh and Rabin Medical Centers in Israel and registered in a study database since 2005. About half of the patients were followed more than 10 years after thyroid cancer treatment. There were 1039 eligible patients identified, including 51% (534) with multifocal papillary thyroid cancer. There were 690 patients who were included in the statistical analysis who had sufficient data available on clinical features and outcomes. Relevant clinical features accounted for in the analysis included: age, sex, radiation exposure,

family history of thyroid cancer, primary cancer size, stage of cancer, blood vessel invasion, American Thyroid Association risk of recurrence level, and the presence of extrathyroidal extension (the cancer invading outside the thyroid into adjacent tissues).

The authors reported that patients with multifocal papillary thyroid cancer were older, more frequently male, had a higher rate of extrathyroidal extension, more lymph node metastases, more advanced disease (stage III/IV), and a higher American Thyroid Association recurrence risk level, compared to those with unifocal papillary thyroid cancer. Furthermore, patients with multifocal papillary thyroid cancer received more aggressive treatment (higher rates of more extensive surgery, radioactive iodine use [and dose], and external beam radiation treatment). By the end of study follow-up, about 13% of patients in the entire study population died (from all causes) and 2% died from thyroid cancer. After the statistical analysis, the presence of multifocal papillary thyroid cancer did not significantly predict papillary thyroid cancer recurrence or death from all cause, but was associated with having persistent thyroid cancer at one year following treatment (detected on imaging or suspected on bloodwork).

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors concluded that the presence of multifocal papillary thyroid cancer is associated with other higher risk disease features at baseline, but is not necessarily a significant independent predictor of long-term thyroid cancer outcomes. Patients diagnosed with papillary thyroid cancer should discuss the features of their disease with their thyroid cancer specialist, to fully understand any potential implications for treatment decision-making.

— Anna M. Sawka, MD, PhD





**THYROID CANCER, continued**

**ATA THYROID BROCHURE LINKS**

Thyroid Cancer (Papillary and Follicular): <https://www.thyroid.org/thyroid-cancer/>

Thyroid Surgery: <https://www.thyroid.org/thyroid-surgery/>

Radioactive Iodine: <https://www.thyroid.org/radioactive-iodine/>

**ABBREVIATIONS & DEFINITIONS**

**Papillary thyroid cancer (PTC):** the most common type of thyroid cancer. There are 4 variants of papillary thyroid cancer: classic, follicular, tall-cell and noninvasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP).

**Multifocal papillary thyroid cancer:** having multiple papillary thyroid cancers in the thyroid

**Thyroidectomy:** surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed, such as in removal of a lobe, it is termed a partial thyroidectomy.

**Radioactive iodine (RAI):** this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).

