THE MOST COMMON THYROID CANCER IS < I CM IN A >45-YEAR-OLD, BUT NOT ALL SMALL CANCERS ARE INSIGNIFICANT

Hughes DT, Haymart MR, Miller BS, Gauger PG, Doherty GM. **The most commonly occurring** papillary thyroid cancer in the United States is now a microcarcinoma in a patient older than **45** years. Thyroid. January 26, 2011 [Epub ahead of print].

SUMMARY • • • •

BACKGROUND

Thyroid carcinoma has the fasting-growing incidence of all cancers in the National Cancer Institute's Surveillance, Epidemiology, and End results (SEER) database. The incidence of thyroid cancer has risen from 3.85 cases per 100,000 population in 1975 to 11.99 per 100,000 in 2007. The mortality has decreased slightly from 0.55 deaths per 100,000 in 1975 to 0.47 deaths per 100,000 in 2007, suggesting that there may be an increase in the proportion of lower-risk tumors being diagnosed.

METHODS

This was a retrospective evaluation of the papillary thyroid carcinoma (PTC) incidence rates from 1973 to 2006 reported in the SEER database, with an emphasis on new cases each year based on age and size.

RESULTS

Examination of the SEER database between 1974 and 2006 showed that the most common age to be diagnosed with PTC shifted from patients in their 30s to patient in the age range of 40 to 50 years.

Until 1999, the majority of cases occurred in patients younger than 45 years, and after 1999, PTC became more common in patients older than 45 years. From 1988 to 2003, there was an increase in all sizes of PTC, with the largest increase in tumors <1 cm in patients older than 45 years.

CONCLUSIONS

This study demonstrates the changing demographics of patients in whom PTC developed between 1973 and 2006, based on a population database sponsored by the National Cancer Institute. When the patient was under the age of 45 years at diagnosis, the most common tumor size had decreased from 1.1 to 2 cm to <1 cm. Over the age of 45 years, the most common size of tumor has always been <1 cm in size. Because of the aging American population, the majority of patients diagnosed with PTC are now older than 45 years, while in the late 1980s the majority of PTC patients were in their late 20s and early 30s. The authors suggest that the disproportionate increase in PTC in patients older than 45 with <1 cm tumors may be related to increased early detection with imaging studies and treatment of incidentally discovered thyroid nodules.

COMMENTARY • • • • •

There have been at least 4 studies demonstrating the increasing incidence of thyroid cancer, primarily PTC, in the American population using the SEER database (1). This database was designed to sample more than 28% of the population with representation of sex, race, and socioeconomic status that reflects a snapshot of America. Although there is no dispute that there has been a 2.5- to 3-fold increase in the diagnosis of thyroid cancer over the past 30 years, there continues to be controversy concerning whether this is simply increased detection of small, insignificant tumors, as

initially described by Davies and Welch in 2006 (2). Studies such as those by Chen et al. (1), Morris and Myssiorek (3) and Hughes et al. (the article under discussion) demonstrate that the increase in thyroid cancers is occurring in all sizes of tumor. Morris et al. demonstrate that there is a doubling in incidence of large (4 to 6 cm) tumors. This current study is important because it shows, for the first time, the shift in the age of diagnosis of PTC to people older than 45 years. Although the largest proportion of tumors is small (<1 to 2 cm), they are not all insignificant. Morris et al. emphasize that extrathyroidal extension and cervical metastases in small tumors have doubled

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in incidence in the past three decades. Based on the American Joint Committee on Cancer (AJCC) staging, a <2-cm thyroid cancer in a >45-year-old with paratracheal (level VI) nodes or extrathyroidal extension would be stage III; those with lateral nodes (level 2, 3, 4, or 5) would be stage IVA. This has serious implications because of the need for the evaluation and treatment of the higher-stage tumors, even if they are <1 cm at the time of diagnosis in an older person.

- Stephanie L. Lee, MD, PhD

References

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- 3. Morris LG, Myssiorek D. Improved detection does not fully explain the rising incidence of well-differentiated thyroid cancer: a population-based analysis. Am J Surg 2010;200:454-61. Epub June 18, 2010.