Review of: "[Short Communication] Individual opinions on the excessive and under diagnosis and treatment of thyroid cancer"

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Review comments:

This short communication nicely highlighted Asian perspectives on the overdiagnosis and overtreatment of thyroid carcinomas. This reviewer would like to emphasize our different cultural backgrounds (1-5), which led us to apply different approaches to the same thyroid disease among us (5-8). The North American medical practice is highly sophisticated and had significant impacts in establishing internationally accepted clinical guidelines (such as the American Thyroid Association [ATA] clinical guidelines) (9) and classification of thyroid tumors (such as the World Health Organization classification of tumors of endocrine organs) (10). These schemas are often tinged with defensive clinal approaches to protect clinicians from malpractice litigation (5, 11, 12). However, the rest of the world does not welcome so-called defensive medicine, which causes unnecessary costs for patients and society. Even after knowing no recurrence and cancer-specific mortality in 109 NIFTP cases with an average of 14 years of follow-up (13), the ATA clinical guidelines recommended surgery (14). It is because NIFTP is a precursor lesion with a potential progression similar to low-risk well-differentiated follicular cell carcinomas (15). However, even in invasive carcinoma, the relative survival rate of early thyroid carcinoma is more than 100% (16). It suggests that stage I papillary thyroid cancer is not biologically malignant and gives eternal life to the patient, who usually lives longer than the general population as a cancer survivor. Proper treatments after confirming progression are not too late because there was no cancer death when active surveillance was applied to more than 2000 patients with low-risk papillary microcarcinomas (17) and no increased mortality after stopping thyroid cancer screening in Korea (18). Endocrinologists, endocrine surgeons, radiologists, and pathologists practicing outside of North America, must be aware of this cultural difference (1-8).

This reviewer introduces an essential study by van Gerwen et al., which reported a 10-year cause-specific survival rate of 94% among 146 patients with papillary thyroid carcinoma who refused surgery (19). It suggests vast majority (94%) of papillary thyroid carcinomas currently treated as malignant tumors did not cause cancer death, even if left untreated, and are thus harmless tumors (19). However, all clinical guidelines recommend thyroidectomy for all patients with invasive papillary thyroid carcinomas, possibly due to defensive medicine.

This reviewer emphasizes that strict risk classification of given thyroid tumors is essential for decision-making and critical to solving the thyroid conundrum, overdiagnosis, and overtreatment of low-risk thyroid carcinomas. In the recent modern

era of genetic tests, we may soon have good methods to predict patient outcomes more accurately. Until then, clinical risk stratification is critical for proper treatment strategy for stage I thyroid carcinomas. It classifies clinically suspicious thyroid nodules into 1) harmless tumors (Welch's non-progressive and very slow-growing carcinomas) that can be followed without surgery, 2) tumors with potential progression (Welch's slow-growing carcinomas) that are curative if treated at an early stage, and 3) fast (lethal) carcinomas that require systemic treatments (20-22).

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