

## Thyroid Cancer in the New Millennium

The aftermath of the nuclear disaster at Chernobyl sensitized a large proportion of the general public about not only the importance of thyroid cancer as a disease, but also the need to minimize radiation exposure of children as a preventive measure. However, many physicians, including some oncologists, regard thyroid cancer as a rather puzzling but thankfully uncommon disease. Perhaps this perception is related to the fact that after diagnosis, management tends to be provided by a small proportion of physician practitioners, comprised of specialized surgeons, endocrinologists, and nuclear medicine specialists. Since oncologists are usually not involved in the management decisions for early or localized disease stages of thyroid cancer, they may be uncertain about the optimal treatment approaches and the risk/benefit ratio of different management options. In fact, many oncologists will see patients with thyroid cancer only if the patients develop advanced metastatic disease.

This issue of *Cancer Control* focuses on some of the critical issues in thyroid cancer management and provides an overview of the recent developments in the diagnosis and treatment of thyroid malignancy.

Detection of thyroid cancer lies within the province of the primary care provider rather than the oncologist. Although thyroid can-

cer represented only 1.5% of new cancer cases and 0.2% of cancer deaths in the United States in 1999, it presents an important clinical problem because thyroid cancer must be distinguished from the very common benign thyroid nodule. Thyroid nodules occur in up to 4% of the population and ultrasound detectable nodules occur in up to 50% of the population over 60 years of age. The need to effectively distinguish malignant nodules from benign nodules becomes important both to assure appropriate and timely management of malignant nodules and to avoid expensive evaluation and treatment of benign disease.

The evaluation of thyroid nodules using appropriate diagnostic testing is presented in the first article, which includes a useful management algorithm. In the second article, a large part of the demystification of initial thyroid cancer management is provided by Diana S. Dean, MD, and Ian D. Hay, MB, PhD, FRCP. These authors provide the powerful evidence from long-term follow-up of large cohorts of patients that readily available prognostic parameters can be used to categorize patients with differentiated thyroid cancer into risk groups that are associated with either extremely good or somewhat less favorable survival outcomes. Several slightly different schemas are available to provide this information. These are important because

they provide more accurate prognostication and allow better choice of initial treatment than can be achieved by using only the classic TNM anatomic staging system.

Ashok R. Shaha, MD, FACS, follows this discussion on prognosis to demonstrate how the information is used to determine the optimal surgical approach for patients with various types of thyroid cancer. Total thyroidectomy is *not* the treatment of choice for most patients who present with differentiated cancer. Additional surgical options are available for patients who have extrathyroid tumor extension. The effectiveness of these approaches are presented and reviewed by Judith McCaffrey, MD. The use of radioiodine thyroid ablation and the context of tumor are discussed in several presentations in this issue. For a more formal exposition of the controversies surrounding use of this treatment modality, the reader is referred to a review article by Wartofsky and colleagues.<sup>1</sup>

The C-cell medullary thyroid carcinoma is of particular pertinence to members of MEN II syndrome, although 75% of cases of medullary thyroid cancer in the United States are considered to be sporadic in nature. Gregory W. Randolph, MD, FACS, and Dipti Maniar, MD, describe the different surgical approach needed for this particular type of thyroid cancer. They also review the value of the RET onco-

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gene in allowing detection of medullary cancer before it becomes clinically evident, resulting in the application of curative total thyroidectomy even in very early childhood.

In the "Pathology Update" feature, Carlos A. Muro-Cacho, MD, PhD, and Ni Ni K. Ku, MD, discuss the interpretation of fine-needle aspirates, now considered the "gold standard" for the diagnosis of thyroid nodules. This first of two reviews also provides an overview of the pathology features of the most common differentiated thyroid tumors.

Thyroid cancer represents a fascinating grouping of diseases that are usually associated with extremely good survival outcomes. Better knowledge of the prognostic factors related to initial therapy will minimize treatment morbidity and maximize patient outcomes and quality of life.

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## Reference

1. Wartofsky L, Sherman SI, Gopal J, et al. The use of radioactive iodine in patients with papillary and follicular thyroid cancer. *J Clin Endocrinol Metab.* 1998;83:4195-4203.