

Atomic Bomb Survivors Still at Risk for Tumors

BY MARY ANN MOON
Contributing Writer

Nearly 60 years after exposure to radiation from the atomic bomb explosions in Hiroshima and Nagasaki, survivors remain at increased risk for both malignant and benign thyroid tumors, reported Dr. Misa Imaizumi of Nagasaki (Japan) University, and associates.

There is a significant, linear dose-response relationship: The prevalence of thyroid tumors rises as radiation dose increases. And the dose effects are significantly stronger in people who were exposed as children or adolescents in 1945 than they are in people who were 20 years old or older at that time.

These findings show that "careful examination of the thyroid is still important long after radiation exposure, especially for people exposed at younger ages," Dr. Imaizumi and associates said (JAMA 2006;295:1011-22).

The researchers conducted what they described as the first comprehensive examinations for thyroid disease in 4,091 survivors of the Hiroshima and Nagasaki bombings. The 1,352 men and 2,739 women had a mean age of 70 years. About half had been within 2 kilometers of the hypocenters of the explosions.

Thyroid diseases were diagnosed at this examination or had been diagnosed previously in 1,833 subjects (44.8%). The prevalence of thyroid disease was significantly higher in women (51.0%) than in men (32.2%).

Malignant thyroid tumors were found in 87 subjects (2.1%), and benign nodules were detected in 207 subjects (5.1%). Another 71 subjects had previously had malignant tumors removed, whereas 43 had previously had benign nodules removed. Thyroid cysts were noted in an additional 324 subjects (7.9%), whereas 589 (14.4%) had mixed-type solid nodules and 321 (7.8%) had nodules for which cytology results were unavailable.

For all of these lesions, the prevalence increased in direct proportion to the degree of radiation exposure. Moreover, the prevalence was highest in people who had been exposed to the atomic bombs' radiation as children or adolescents. The exact reason for this is unknown, but it is likely that children's organs are more sensitive to radiation because of their higher rates of cell proliferation associated with growth, the investigators said.

Autoimmune thyroid diseases were not associated with radiation dose. A total of 1,127 subjects (27.5%) had antithyroid antibodies, 230 (5.6%) had hypothyroidism, and 62 (1.5%) had hyperthyroidism.

In an editorial comment, John D. Boice Jr., Sc.D., of Vanderbilt University in Nashville, Tenn. said, "It is remarkable that a biological effect from a single brief environmental exposure nearly 60 years in the past is still present and can be detected."

The findings of Dr. Imaizumi and associates show that after radiation exposure, the risk of both malignant and benign thyroid disease "apparently lasts for life," Dr. Boice said (JAMA 2006;295:1060-2). ■

Local Anesthesia Simplifies Outpatient Thyroidectomies

BY JONATHAN GARDNER
Contributing Writer

Outpatient thyroidectomies performed with local anesthesia on eligible patients can achieve clinical results and patient satisfaction comparable with those done under general anesthesia, according to results of a prospective, randomized clinical trial.

Researchers at Texas A&M University in Temple, Tex., monitored 58 patients at Scott & White Memorial Hospital in Temple who underwent thyroidectomies between January 2000 and July 2001 (Arch. Surg. 2006;141:167-73). The patients' ages ranged from 19 to 80 years; 53 of the patients (91%) were women.

The patients were randomized into two groups of 29, and thyroidectomies were performed under general anesthesia in one group and under local anesthesia with monitored anesthesia care in the other. The same surgeon treated all patients.

Researchers found statistically significant differences in the amount of time patients in the two groups spent in post-surgical care, which included time spent in postanesthesia care and the combined time spent in postanesthesia care and the hospital's day surgery unit.

On average, patients who received lo-

cal anesthesia spent 4 minutes in the postanesthesia care unit, compared with 80 minutes for those treated under general anesthesia. The combined time spent in the postanesthesia care unit and the day surgery unit for those treated under local anesthesia was 165 minutes, compared with 229 minutes for those under general anesthesia.

The combined time spent in the postanesthesia care unit and the day surgery unit was 165 minutes for local and 229 minutes for general anesthesia.

As a result of the earlier discharge, researchers estimated the per-patient savings at \$315 for those treated with local anesthesia.

The researchers found no statistically significant differences in the number of patients undergoing either procedure who were admitted to the hospital after surgery or in the 30 days after initial discharge, the number of complications, or the overall satisfaction

with their surgery or anesthesia management.

The researchers also noted a statistically significant difference in physician practice before and after the study. They compared a group of 58 consecutive thyroidectomy patients treated before the study with a group of 58 consecutive patients treated afterward. The share of outpatient procedures performed with local anesthesia and monitored anesthesia care rose from 21% to 50%, and the share of outpatient procedures performed with general anesthesia dropped from 79% to 50%. ■

Thyroidectomy Safe, Durable Fix for Grave's

BY MARY ANN MOON
Contributing Writer

Total thyroidectomy can be performed more safely than many clinicians realize, and offers more durable results for people with Grave's disease than do antithyroid drugs or radioiodine, according to Dr. Kaare J. Weber of Mount Sinai School of Medicine, New York, and his associates.

The researchers reviewed the records of all 48 patients who underwent total thyroidectomy for Grave's disease at their hospital between 1993 and 2005. All but 7 of the patients were women, and the mean age was 40 years. All had typical symptoms including palpitations, eye disturbances, anxiety, weight loss, heat intolerance, and tremor.

Of this group, 24 patients had failed on medical therapy with or without radioiodine. Another 12 had refused radioiodine because of concerns about radiation exposure. The remaining 12 chose surgery for assessment of thyroid

nodules that were presumed to be related to their disease.

After thyroidectomy and a mean of 40 months of follow-up, there were no recurrences of hyperthyroidism. In contrast, relapse rates of 20%-75% are cited in the literature for medical therapy, Dr. Weber and his associates said (Am. J. Surg. 2006;191:400-5).

Of the 20 patients who had mild or severe ophthalmopathy before surgery, 11 showed marked improvement or resolution of eye disorders and the remaining 9 showed either improvement or stabilization. In contrast, radioiodine treatment has been associated with the onset or exacerbation of ophthalmopathy, they said.

Eight patients (17%) were found to have papillary cancer of the thyroid at surgery. "These patients would not have received appropriate treatment for their coexisting cancer if they were treated only with antithyroid drugs and/or radioiodine," the investigators noted.

No patients suffered perma-

nent laryngeal nerve injury from the procedure. Complications included three cases of transient hypocalcemia and one case of temporary right vocal cord paralysis. Only one patient developed permanent hypoparathyroidism, and that case "followed a previous failed [thyroid] exploration at another institution," they said.

"Despite today's methods for a safe thyroidectomy, concern over permanent recurrent laryngeal nerve injury and permanent hypoparathyroidism as a result of the hypervascularity of the thyroid gland prevents some physicians from recommending surgical therapy for Grave's disease," Dr. Weber and his associates said.

These results demonstrate that total thyroidectomy now can be performed safely, with little of the morbidity and mortality that occurred when the procedure was first developed years ago. In addition, thyroidectomy addresses potentially cancerous nodules, as medical and radioiodine therapies do not, they said. ■

EBRT Controlled Locally Advanced Thyroid Cancer

High-dose external beam radiotherapy controlled locally advanced, differentiated thyroid cancer in a retrospective study of 42 patients.

There is little information on the efficacy of external beam radiotherapy (EBRT) as adjuvant therapy in such patients. "The relatively low incidence of this malignancy, coupled with its long natural history, has precluded study of various treatment methods in the context of a prospective clinical trial," said Dr. Kenyon M. Meadows and his associates at the University of Florida, Gainesville.

"Retrospective outcome studies remain the most reliable way of assessing therapeutic efficacy but are hampered by significant heterogeneity in diagnostic evaluation, staging, and treatment strategies that have evolved over time. Accordingly, the indications for EBRT for differentiated thyroid cancer remain poorly defined," they said.

The 10% of thyroid cancer patients presenting with locally advanced disease are at high risk for local or regional recurrence. Five-year survival is 50%.

The investigators reviewed the records and assessed outcomes in all 42 patients who were treated for advanced or recurrent thyroid cancer with adjuvant high-dose EBRT at their university since April 1962. Median patient age was 58 (Am. J. Otolaryngol. 2006;27:24-8).

Ten patients died from thyroid cancer during a mean follow-up of 7 years and 16 died from unrelated causes. There were no local or regional recurrences at 5 years for patients with no gross residual disease at EBRT and 30% recurrence for those with gross residual disease at EBRT. No recurrences were seen with doses over 64 Gy.

Five-year survival free of distant metastases was 82% in those without metastasis at EBRT.

—Mary Ann Moon