

# TREATMENT OF CANCER OF THE THYROID WITH DESICCATED THYROID

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**I**N recent years it has been discovered that certain types of goiter diminish in size when patients are given desiccated thyroid. Many large goiters resulting from struma lymphomatosa shrink or even disappear when thyroid is given in doses of 2 to 4 grains daily.<sup>1</sup> Some adenomas of the thyroid and some multinodular goiters get smaller.<sup>2</sup> Now it appears that some well-differentiated cancers of the thyroid also can be controlled by thyroid feeding.

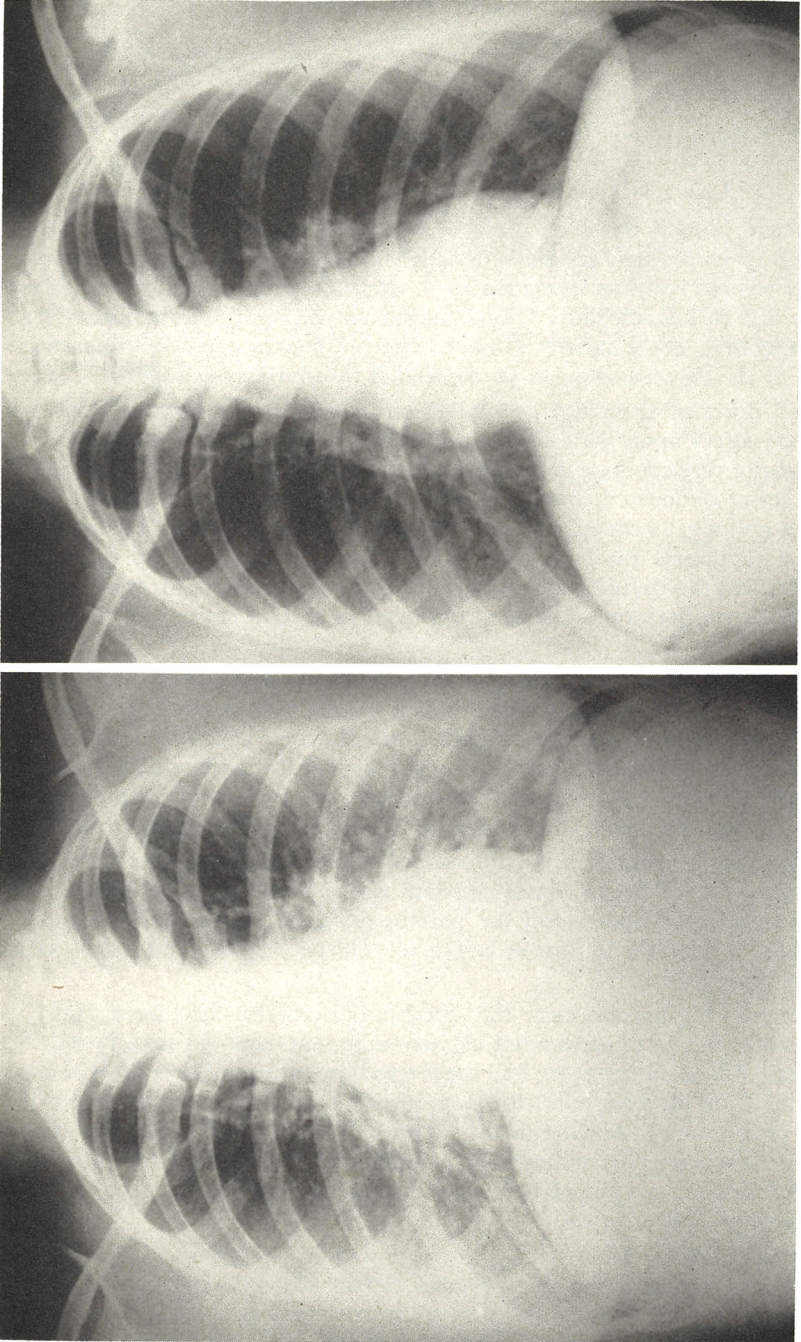
Small doses of thyroid, up to two grains daily, do not appear to have any significant effect upon goiters or cancers. It is necessary to give a full replacement dose of three to four grains daily to obtain favorable results. Presumably such doses of desiccated thyroid furnish so much exogenous thyroid hormone that it is no longer necessary for the thyroid gland to function. The exogenous hormone suppresses the formation of the thyroid-stimulating hormone of the pituitary; and the thyroid, deprived of pituitary stimulation, atrophies. Similar dependency on hormones has been observed in certain cancers of the prostate and breast.

My interest in the dependency of thyroid tumors on pituitary hormones was first awakened eight years ago when I saw a woman with severe hyperthyroidism and an oxyphilic adenocarcinoma (Hürthle cell cancer) of the thyroid that had metastasized to the lungs. Serial roentgenograms of this patient's lungs obtained during the preceding two years showed no increase in the size of the metastatic nodules; in fact, some of them seemed to be getting a little smaller.

I erroneously assumed that the patient's hyperthyroidism was being caused by the cancer, and began treatment with radioactive iodine. Soon the hyperthyroidism was controlled and the patient developed signs of myxedema. At this point the metastatic tumors began to enlarge rapidly, and a few months later the patient died.

In retrospect, it seems clear that the hyperthyroidism had been caused not by the cancer but by hyperfunctioning nonmalignant thyroid tissue. Presumably, the excessive thyroid hormone had suppressed the output of thyroid-stimulating hormone of the pituitary, and this suppression had resulted in an arrest of the growth of the tumor. As soon as the function of the thyroid was destroyed, the resultant deficiency of circulating thyroid hormone stimulated the pituitary. It was the increased output of thyroid-stimulating hormone from the pituitary, that made the cancer grow.

During the next few years I saw several more examples of differentiated thyroid cancers that blossomed and grew rapidly when myxedema had been induced by I<sup>131</sup>. The trend of the tumor's growth was promptly reversed when desiccated thyroid was given in doses of three to four grains daily. I now have



A. Metastasis of papillary carcinoma of thyroid to both lungs, most marked in lower lobes. B. (The same case as shown in A.) Roentgenogram taken after four years of treatment with 3 grains of desiccated thyroid daily. No evidence of metastatic carcinoma.

followed five patients with pulmonary metastases of papillary carcinoma treated with desiccated thyroid for from one to five years, and in every case there has been cessation of growth of the carcinoma, as evidenced by improvement in the roentgenographic appearance of the chest or complete disappearance of the tumors both in the neck and in the chest (Figure). Similar results have been reported in England by Balme.<sup>3</sup> In two other cases with solitary metastases in bone, there were apparent arrest of the cancer's growth for from one to five years and recalcification during treatment with thyroid and roentgen therapy.

### Discussion

For the past three years I have made it a practice to give two to four grains of desiccated thyroid daily to all patients who have had operations for cancer of the thyroid. Since the course of this disease may be extremely slow it is difficult to assess the results. All that can be said at the present time is that there have been no favorable responses to thyroid feeding in patients with highly malignant or undifferentiated cancers of the thyroid. On the other hand, there have been no recurrences of tumors of low malignancy treated with desiccated thyroid even in patients who had only partial removal of extensive papillary carcinomas.

It will take many years to estimate the value of desiccated thyroid in the treatment of low-grade cancers of the thyroid. In the meantime the treatment is inexpensive, harmless, and certainly worth further trial.

To aid in determining the value of treatment with desiccated thyroid in these rare cancers, it would be helpful if those who have had experience with this method would send me summaries of their cases, together with representative slides of the cancers. In this way perhaps we can determine what types of cancer will respond favorably to endocrine therapy.

### Summary

Feeding desiccated thyroid in doses of three to four grains daily appears to arrest the growth of papillary carcinomas of the thyroid. In some cases under treatment metastatic nodules in the lungs have disappeared.

### References

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2. Greer, M. A. and Astwood, E. B.: Treatment of simple goiter with thyroid. *J. Clin. Endocrinol. & Metab.* **13**: 1312-1331 (Nov.) 1953.
3. Balme, H. W.: Metastatic carcinoma of thyroid successfully treated with thyroxine. *Lancet* **1**: 812-813 (April 17) 1954.