

Thyroid and Cancer

A. Hoffer, M.D., Ph.D.¹

Loeser (1954) reported the follow-up effects of thyroid maintenance on sixteen women treated by radical mastectomy for cancer of the breast. Two with axillary gland involvement received deep x-ray treatment post operative. Both had plasma cholesterol levels over 280 per 100 ml. Out of a further fourteen women the axillary glands were affected in ten. All were scirrhous carcin-omata. In eleven, cholesterol levels were over 260 mg/100 ml. All were given thyroid, 65 to 320 mg per day. After four years there was only one recurrence.

Since then I have not been able to locate any reports where Loeser's studies were repeated using the same thyroid preparation and the same treatment protocol. Not that there have been no attempts to test his findings.

Vorherr (1978) states "but other investigators (Chalstrey and Benjamin [1966], Lyons [1968]) found that thyroid hormone could not prevent breast cancer recurrence." Yet, Chalstrey and Benjamin did not treat any patients with thyroid. Only one of their patients was given 0.2 mg of 1-thyroxine daily for two years, but because her basal metabolic rate was elevated this was discontinued two years before she developed a lump in the breast. Contrary to the impression left by Vorherr,

these authors concluded "there are two important prophylactic measures which can be adopted in the management of patients with thyroid disease. Firstly, in order to avoid pituitary overstimulation no patient should be allowed to remain in a hypothyroid state following thyroidectomy." There is a clear indication here that thyroid will prevent recurrences.

Lyons' (1968) report is singularly lacking in data. He treated 109 patients with cancer using thyroid extract (not the same as desiccated thyroid) on the first patients treated, but later he used thyroxine. We are not told how many had thyroid gland, how many had thyroxine, for how long and what dose of thyroxine was used. Nor is there any indication cholesterol levels were used to determine optimum dose of thyroid. The 109 patients fared no better than a control group not given thyroid.

Vorherr also stated, "Thyroid hormone medication has also been claimed to be beneficial for the treatment of advanced

1. 3A - 2727 Quadra St. Victoria, B.C. V8T 4E5

breast cancer (Loeser [1954], Lemon [1957], Gardner et al. [1962], Witt et al. [1963])." However, Lemon used a combination of cortisone and thyroid, Gardner et al. used a combination of prednisone and sodium liothyronine, and Will et al. used replacement hormones including liothyronine. Vorherr further adds, "but others (Stoll [1962], Emery and Trotter [1963], Lyons [1968], and O'Bryan et al. [1974] found thyroid hormone of no curative or palliative value in breast cancer cases." Again, Stoll used triiodothyronine, not thyroid gland, Emery and Trotter used triiodothyronine and Lyons used thyroid, but we are not told how many of his series were included. O'Bryan et al. used a combination of oophorectomy and either placebo or thyroid 120 mg. per day.

Finally, Vorherr reports that Moossa, Price-Evans and Brewer (1973) observed that thyroid hormone excess was associated with decreased survival rates from breast cancer. Nowhere have Moossa et al. left such an implication. In their series of 21 patients with hyperthyroidism, 11 were given thyroidectomies 1 to 12 years before the breast cancer developed. When the cancer was discovered all were euthyroid clinically and by laboratory tests. None of them were hyperthyroid. But 11 had been treated by surgery. At five years about 33% of this group were alive compared to the control group with 63% survival.

Kardinal and Donegan (1979) also referred to the use of thyroid in the treatment of cancer in a strong negative sense. They wrote, "Thyroid hormone acquired rather dubiously deserved credit for producing a nonspecific beneficial effect in women with advanced mammary cancer," and later, "The well controlled studies of Emery and Trotter (1963) and the Cooperative Breast Cancer Group (O'Bryan et al. 1974) have failed to demonstrate any therapeutic benefit from the use of thyroid hormone in the treatment of advanced carcinoma of the breast. There is little evidence to support the use of thyroid hormone in the treatment of mammary carcinoma unless it is indicated as replacement therapy." But Emery et al. and O'Bryan et al. did not use thyroid.

I have not been able to find a single report following Loeser where whole dried thyroid gland was used following surgery or radiation.

The "confirmatory" reports used thyroid with cortisone, or pure hormone, or pure hormone with oophorectomy.

From these reports I have seen we have the following conclusions:

1. Thyroid gland decreased the rate of recurrence of breast cancer.
2. The pure hormone alone or with other treatment had no significant effect.
3. Thyroidectomy was followed by an increased occurrence of breast cancer.

I believe that Loeser's finding, still not corroborated or denied by experiment, should be repeated. It is possible the thyroid gland secretes an anti cancer substance which is not thyroxine or its derivatives. If true, this could account for the three main conclusions.

Desiccated thyroid should be used following Loeser, using the same type of cancer cases, the same dose range of thyroid and the same dependence on cholesterol levels to determine optimum dose.

A true repetition would use women with similar breast cancer, using surgery with follow-up radiation. About half would have high blood cholesterol levels. The dose of desiccated thyroid would be increased until cholesterol levels, if high, decreased to about 175 mg. per cent. Once this is done we can decide whether Loeser (1954) has been confirmed or not.

Footnote

This note was submitted to a widely circulated medical journal but was rejected by two referees. One stated there is not evidence to suggest that desiccated thyroid tissue has any role to play in treatment of this disease. This critic completely rejects Loeser's evidence. Had he said he did not find the evidence convincing it would have been clear his own bias was a factor in the evaluation of what is evidence. Surely, Loeser's work, which was not ever replicated, presents some evidence. The second critic merely labelled it anecdotal.

Webster's New World Dictionary defines an anecdote as: 1. originally, little-known, entertaining facts of history or biography; hence, 2. a short entertaining account of some happening, usually personal or biographical. My brief report does record information

little-known. I hope it is more than entertaining, especially for cancer sufferers who have so far been helped little by the cancer research establishment. Loeser does record facts. His patients had very few recurrences. I suppose, then, the evidence is anecdotal. But what does this have to do with research? Is there any account of any patient or disease which is not anecdotal unless it is fiction? Double blinds are merely experiments in which a number of anecdotes are shuffled into separate piles using modern technology.

Even if there is only one chance in a million desiccated thyroid does contain an anti cancer factor, it is worthwhile looking. Less than 1 per cent of the annual U.S.A. cancer research budget would provide an answer.

Perhaps some enterprising physician will examine this possibility.

Literature Cited

CHALSTREY, L.J. and BENJAMIN, B.: High incidence of breast cancer in thyroid cancer patients. *British J. Cancer*, 20:670-675,1966.
 EMERY, E.W. and TROTTER, W.R.: Triiodothyronine in advanced breast cancer. *Lancet*, 1:358-359, 1963.
 GARDNER, B., THOMAS, A.N. and GORDAN, G.S.: Antitumor efficacy of prednisone and sodium liothyronine in advanced breast cancer. *Cancer*, 15:334-337,1962.

KARDINAL, C.G. and DONEGAN, W.L.: Endocrine and hormonal therapy. In: *Cancer of the Breast*, ed. W.L. Donegan and J.S. Spratt, published by W.B. Saunders Company, Philadelphia, London, Toronto, 1979. Pages 361-403.
 LEMON, H.M.: Cortisone-thyroid therapy of metastatic mammary cancer. *Ann. Int. Med.*, 46:457-484, 1957.
 LOESER, A.A.: A new therapy for prevention of postoperative recurrences in genital and breast cancer. *Br. Med. J.*, 2:1380-1383,1954.
 LYONS, A.R.: Thyroid hormones and breast cancer. In: *Prognostic Factors in Breast Cancer. Proceedings of First Tenovus Symposium Cardiff 12-14th April, 1967.* A.P.M. Forrest and P.B. Kunkler, eds. Baltimore. The Williams and Wilkins Company, pp. 164-170,1968.
 MOOSSA, A.R., EVANS, D.A.P. and BREWER, A.C.: Thyroid status and breast cancer. *Ann. R. Coll. Surg. Engl.*, 53:178-188,1973.
 O'BRYAN, R.M., GORDAN, G.S., KELLEY, R.M., RAVDIN, R.G., SEGALOFF, A. and TAYLOR, S.G. III.: Does thyroid substance improve response of breast cancer to surgical castration? *Cancer*, 33:1082-1085,1974.
 STOLL, B.A.: A clinical trial of tri-iodothyronine as a hormone potentiator in advanced breast cancer. *Br. J. Cancer*, 16:436-440,1962.
 VORHERR, H.: Thyroid disease in relation to breast cancer. *Klin. Wochenschr.*, 56:1139-1145,1978.
 WITT, J.A., GARDNER, B., GORDAN, G.S., GRAHAM, W.P. HI and THOMAS, A.N.: Secondary hormonal therapy of disseminated breast cancer. *Arch. Int. Med.*, 111:557-563,1976.