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MODERN MEDICINE

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Dr. Harry E. Bacon
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Radioactive Iodine for Hyperthyroidism

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MANY operations for toxic goiter could be avoided by treatment with radioactive iodine.

Isotopes are effective and harmless under proper conditions, according to the late Saul Hertz, M.D. Treatment is more economical of time, money, and hospital beds than surgery and does not entail the long invalidism and medical observation required for antithyroid drugs.

The material has been used more than eight years and in over 4,000 reported cases. Adequate supplies are now available and, if handled by rules of the Atomic Energy Commission, are safe for doctor and patient. Rumors of renal damage, sterility, or carcinogenic effects from radioactive iodine are unfounded.

In every case, however, amounts must be regulated with great care. Thyroid capacity for iodine should be measured by tracer tests and routine iodination begun soon after the first radioactive dose.

Although prolonged medical care succeeds for a time in most cases, less than 35 to 40% of patients avoid relapse, and over half eventually require operation for persistently enlarged glands. Increasing numbers are referred for isotope therapy after failure of other methods.

Before irradiation the body should be free of extraneous iodine, sometimes taken in salt, kelp, or cough mixtures. Antithyroid agents such as thiouracil should be stopped also for at least three days before a tracer or therapeutic dose.

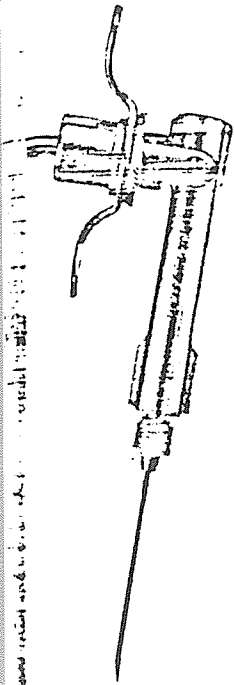
To determine thyroid uptake, 100 microcuries of I^{131} is administered, and urinary excretion is measured for the next forty-eight or seventy-two hours by the Marinelli technic, with a candle type of beaker and gamma ray detector.

Tracer doses are not dependable for early or borderline cases. However, the turnover rate of I^{131} into a protein-bound form in the blood will probably afford a reliable test when microtechnics are perfected for finger sampling.

The standard dose for treatment is 200 to 250 microcuries of I^{131} per gram of thyroid tissue. The total amounts are not likely to exceed 12 to 15 millicuries, unless the gland is more than 7 times normal weight. An impalpable thyroid of less than 25 gm. may be affected by 1 millicurie, or a goiter of 90 to 100 gm. resist 12 millicuries, but a second dose is preferable to giving too much in the first dose.

Full iodination is done with or-

* Assurances as to the advantages and safety of radioactive iodine treatment of hyperthyroidism. *New Orleans M. & S. J.* 103:51-62, 1950.



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dinary iodide to avoid excessive irradiation. The supplement does not reduce benefits of the isotope and permits safe treatment of severely toxic, desperately ill cardiac and diabetic subjects.

Iodide is usually given seventy-two hours after the radioactive dose to prevent excretion of I^{131} . For rapid control in emergencies, iodination is started sooner and enough I^{131} is administered to allow for moderate loss.

Irradiation may cause slight tenderness, cough, or increase of thyrotoxicosis, but local remedies and iodination are protective. Leukopenia and anemia are rare, and moderate doses produce no fever or radiation sickness.

Myxedema results in 1 of 10 cases,

but permanent dysfunction in only 1 of 100. Even after much heavier roentgen therapy, cancer develops no more often than in unirradiated toxic glands. Fertility of men or women is not impaired, and offspring have no congenital defects resulting from the therapy.

Treatment of thyroid cancer by radioactive iodine is promising, although so far the recovery rate has not been high. As much tissue as possible is first excised, and the isotope is then given as long as significant amounts are retained. No patient should be discharged until he is totally myxedematous. From 100 to 934 millicuries has been given without permanently undesirable effects, although dosage is not definitely established.

BACILLUS COLI SEPTICEMIA may occur with Laennec's cirrhosis of the liver, as with other chronic debilitating diseases. If fever develops with advanced hepatic disease, routine blood culture should be done. In the opinion of Robert L. Whipple, Jr., M.D., and J. Frank Harris, M.D., of Emory University, Atlanta, the bacteremia results from deficit of reticuloendothelial tissue, changes of hepatic circulation, or inability to form immune bodies. Streptomycin alone or followed by sulfadiazine apparently cleared the organism from the blood of 2 patients in a few days.

Ann. Int. Med. 33:462-466, 1950.

SYSTOLIC MURMUR in the abdominal aorta is often heard with occlusive peripheral vascular disease. Either stenotic atherosclerosis of the aorta or combined aortic and femoral lesions are responsible, believes Roy J. Popkin, M.D., Los Angeles. Auscultation begins slightly to the left and extends a few centimeters above and below the umbilicus. The sound usually ceases where the aorta bifurcates but may be audible over the entire abdomen. Of 22 persons with a murmur, 20 had arteriosclerosis obliterans and 2 thromboangiitis obliterans.

Angiology 1:244-246, 1950.