selves and clearly show that a 2-mCi scan was markedly less sensitive in detecting thyroid metastases or residual iodine-avid tissue than a comparable 10-mCi scan performed at similar intervals and using the same scanning techniques. We have also shown this to be the case using Anger scintiphotos.

In summary, the paper simply shows that there is a major difference in sensitivity in detecting iodine-avid tissue, and it is dose dependent. Institutions using 500 μCi–2 mCi of I-131 may expect a significantly reduced sensitivity compared with institutions using higher doses such as 10 mCi.

We also suggested that ablation be defined both visually and clinically. This is to say that visualization of residual iodine-avid tissue or metastasis by large doses of I-131 may not necessarily ensure a clinical response to I-131 therapy. Whether a 1-, 2-, or 5- to 10-mCi dose is most appropriate in evaluating the patient with differentiated thyroid carcinoma is not the key issue. A fundamental question to be answered is which patient to treat with high-dose I-131 therapy regimens based upon an arbitrary dose of I-131 used as a diagnostic scan.

We are in the final phases of evaluating our follow-up data on those patients who had negative 2- but positive 10-mCi I-131 scans and were subsequently treated with 100 mCi of I-131. We hope this information will add to our knowledge in determining which patients may be expected to have a beneficial response to I-131 therapy.

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Re: Reduction of Thyroid Uptake by Iodine Absorbed with Eye-Drop Therapy

It is well known that the administration of iodine for therapeutic or diagnostic use reduces the I-131 uptake by thyroid tissue as well as by functioning metastases of thyroid carcinoma. Recently we studied a 66-yr-old woman who had been treated with total thyroidectomy for papillary thyroid carcinoma. She had radiological evidence of widespread lung metastases, and her serum thyroglobulin levels were very high (9,800 ng/ml; normal range 1.5–30 ng/ml). No uptake was demonstrated by conventional whole-body scan performed 48–72 hr after administration of 5 mCi of I-131. The urinary excretion of stable iodine was elevated (2.550 μg/l). A careful clinical history revealed that for a long time the patient had been taking an anticataract collyrium containing NaI, KI, and RbI. Six months after withdrawal of eye-drop therapy, the urinary iodine was 103 μg/l and pulmonary uptake of I-131 could be observed clearly.

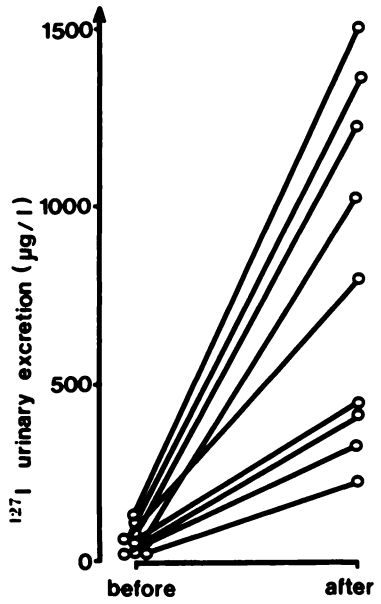

FIG. 1. Urinary excretion of I-127 in nine subjects before and 7 days after treatment with iodine-containing collyrium.

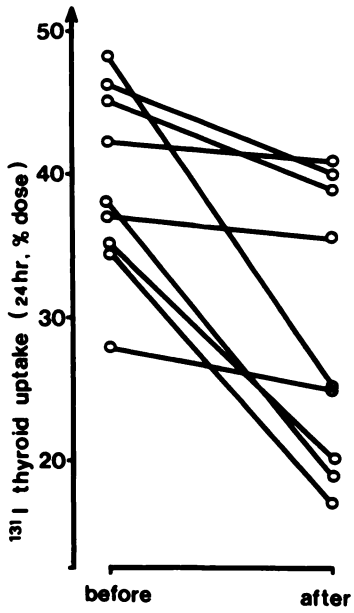

FIG. 2. Thyroid uptake of I-131 at 24 hr in nine subjects before and 7 days after treatment with iodine-containing collyrium.

To the best of our knowledge, no information is available on the possibility that the iodine may be absorbed after administration of eye drops. We therefore studied this problem, analyzing the urinary excretion of iodine and the I-131 thyroidal uptake in nine subjects (8 male, 1 female; age range 41–74 yr; none having thyroid or kidney disease) before and 7 days after administration of the iodine-containing collyrium. The dose was two drops/eye twice a day, corresponding 4 mg of stable iodine. The urinary iodine excretion increased in all subjects (Fig. 1): after treatment the mean value of 814 ± 153 μg/l (mean ± s.e.m.) was significantly higher than that observed before treatment (76.0 ± 13.2 μg/l; $p < 0.001$ by Student's t-test for paired samples). On the other hand, the 24-hr I-131 thyroidal uptake decreased in all subjects (Fig. 2), the mean values being 40.0 ± 2.1% before treatment and 28.1 ± 3.5% after ($p < 0.025$).

These data indicate that the iodine may be absorbed after administration of eye drops and therefore may interfere with thyroid uptake. Since iodine-containing collyria are widely used in Europe—though of dubious effectiveness in the medical treatment of cataract—their effects must be borne in mind during radioiodine studies of thyroid disease, and they should be avoided altogether in such studies of differentiated thyroid carcinoma.

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