

TO THE EDITOR:

It was with considerable interest and anticipation that we read Dr. Spring's paper on a potassium iodide thyroid suppression test. We, too, find the time required for a cytomel suppression study and the necessity for patient cooperation mild drawbacks to the use of this test. However, our experience in several hundred such studies has convinced us of the outstanding reliability of the T-3 suppression test. It is because of this experience that we must find fault with Dr. Spring's paper in the fundamental areas of:

1. Method and interpretation of data
2. Concepts upon which conclusions are based

With regard to the method we must challenge the assumption that the uptake in normal patients two weeks after the T-3 suppression test can be assumed to be identical with the initial uptake. In fact had nothing been done to the patient the uptakes could easily vary in this time interval by several percentage points—and differences of this insignificant magnitude are accepted as the basis for comparative judgments (e.g. Case D.O., Table IV; Case K.K., Table IV; Case R.S., Table IV; and possibly Cases O.M., Table IV and the second run of Case I.L., Table IV). Where the entire procedure was repeated (Cases I.L., and I.W., Table IV) the separate occasions (we are not given the intervals) vary by amounts greater than those observed in the suppression testing. Furthermore, in the same patient the T-3 suppression is greater in one instance, while the KI suppression is greater in another (e.g. Case I.W., Table IV and Case F.C., Table VI). For some reason cases A.P. and M.L., Table VI, do not have the same initial uptakes before the two types of suppression. Does this bear out our contention that if checked before the second suppression test the uptake might be found to be significantly different?

Another challenge of the method is in regard to case selection for Table I—presumably patients with normal thyroid function. Four of these patients had hot nodules and are obviously not properly included in a normal group, even if clinically euthyroid. Furthermore, one patient had previous surgery for hyperthyroidism, two had nodular goiter, and two unilateral exophthalmos. It would seem more appropriate for patients with nothing to suggest abnormal thyroid function to be selected for the euthyroid group. These patients cannot properly be referred to as having “no evidence of thyroid disease.”

The most glaring defect appears to be the very high initial radioiodine uptakes in the euthyroid group for which the author has no explanation. We would have been more favorably impressed if the author had stated that patients were deliberately selected for high uptakes in the face of a clinical impression of an euthyroid state for here is precisely the place for suppression testing. However, apparently such was not the case since 8 of 17 initial uptakes in Table IV were less than 40 per cent. The author's contention that all of these patients were “proven euthyroid beyond doubt by the degree of suppression by KI” is not acceptable in view of the observation that Case C.M., Table V, a proved hyperthyroid, failed to suppress on T-3 to the degree seen in Cases I.L., W.R., A.A., and O.M. in Table IV is a distinct abnormality indicating at least autonomous function. Case O.M. is a “hot nodule” and should be excluded. This leaves 3 of 17 “euthyroid” patients failing to suppress on the adequate doses of T-3 employed. The incidence of such a phenomenon in our experience would be closer to 1-3 per hundred, if that high. However, our euthyroid patients have uptakes averaging one half the mean value reported here. We must conclude that the selection of the euthyroid group appears to have been fortuitously inappropriate.

We would differ with the arbitrary decision as to the difference in results which the author chose to accept as significant and favoring one method of suppression over another. This is particularly obvious in Cases C.T., D.O., V.G., J.C., T.G., K.K., R.S., and O.M., Table IV; and Cases F.C., A.P., A.A., and M.S. in Table VI. In all of the

examples cited the suppressive effects are similar enough on inspection to make a meaningful comparison impossible. We doubt that a statistical analysis would indicate otherwise.

Our next major area of contention is in the realm of concepts and conclusions. It is generally accepted that the ideal suppression test would suppress all borderline high uptakes in normal patients to clearly low values while suppressing the uptakes of those patients with autonomously functioning thyroid glands not at all or even rendering these uptakes higher if possible. Therefore, any suppression method which does not suppress a significant proportion of the patients with normal thyroid function (euthyroid) or which does suppress patients with autonomous function (usually hyperthyroid) is unsatisfactory. Dr. Spring seems pleased that KI was "more suppressive than T-3 in both euthyroid and hyperthyroid subjects." Suppression of the hyperthyroid subjects should be a source of displeasure. Furthermore, in those cases in which the KI suppression test fails to agree with the T-3 suppression we would submit that in all likelihood the KI test was erroneous. We refer here only to differences great enough to lead to a differing conclusion as to the presence of autonomous function or not. The vast experience with the T-3 test attests its sensitivity and validity. Until the KI test can be shown to duplicate the results of the T-3 test consistently most of us would, we believe, place our faith in the T-3 test.

A final note of caution is in order as regards conclusions about the functional state of the patient (euthyroid vs. hyperthyroid) on the basis of a suppression test. Such tests determine only whether thyroid function is suppressable or on the contrary autonomous. Although hyperthyroidism is not seen in patients with T-3 suppressable glands, non-suppressable or autonomous glands may be associated with either the euthyroid or hyperthyroid state. This final determination must be made on clinical criteria. Efforts to reduce this judgment to a laboratory exercise are undoubtedly doomed to failure.

We very much enjoyed reading this paper and appreciate the author's frankness in supplying adequate data to permit a meaningful evaluation of the work. We would hope that a much more extensive study might be undertaken since such a test, if well worked out, could offer definite advantages in selected cases. We would especially like to see such a study restricted only to borderline cases.

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