

## DISCUSSION

DR. OLIVER H. BEAHR (Rochester, Minnesota): Dr. Thomas and Dr. Rutledge have made an important contribution to the proper selection of thyroid pathology for thyroidectomy. This is especially important today, when it's recognized that during the year only about 9000 cases of cancer of the thyroid gland will be encountered, and when autopsy information would indicate that approximately 50% of adult glands might contain thyroid pathology.

The manuscript clearly defines the proper selection of thyroid pathology for thyroidectomy. In 605 cases of Hashimoto's thyroiditis operated at the Mayo Clinic, there were 18 cases of papillary adenocarcinoma, an incidence of 3%, and 12 cases of lymphosarcoma coexisting with Hashimoto's thyroiditis, 2%. This series was accumulated at a time when it was not fully recognized that thyroiditis was an autoimmune disease, and also at a time when only approximately 10% of nodular goiters, diagnosed clinically, came to thyroidectomy. If one considers these facts, and also the patient population selection, and considers them mathematically, the incidence of cancer coexisting with Hashimoto's thyroiditis would be extremely rare.

We would concur with Dr. Thomas that Hashimoto's thyroiditis, for the most part, is a medical disease, and most appropriately treated with thyroid replacement therapy. We would also agree that if, in following these patients—and they all should be carefully followed postdiagnosis—that if a discrete nodule becomes apparent, then the lesion becomes a surgical problem.

There are several instances where the gland is very fibrotic, and it's not possible to obtain a needle specimen, or where the gland might be 100 g or more in size. Would Dr. Thomas comment on these two problems, as to whether or not the particular glands, or lesions, might then be surgical.

Likewise, in a certain number of patients with Hashimoto's thyroiditis, Hashitoxicosis occurs. Is this a surgical problem in these patients, or should the hyperthyroidism be treated medically? Dr. Woolner and others have shown that in thyroid glands containing cancer there is a significant number of glands containing lymphocytic infiltration in the parenchyma other than the malignant tumor. Some pathologists have interpreted this finding as an indication that Hashimoto's thyroiditis is present. He's identified this in his report, I believe, as nonspecific lymphocytic infiltration, and not Hashimoto's thyroiditis, and I wonder if this finding isn't a fact that has led many to feel that the incidence of cancer in Hashimoto's thyroiditis is greater than, in fact, it is. Would you comment on this point?

DR. A. HAMBLIN LETTON (Atlanta, Georgia): This information concerning thyroiditis has been a concern of mine for many years. It was the first paper that I read as a new member of the American Goiter Society right after World War II. I found the first thyroiditis in our practice, which I inherited, in 1933, and by the end of the war we only had about 22, which was a fairly large group at that time, rather the canopener for many other people finding large groups of this disease. At that time we were doing almost total thyroidectomy, and we were followed by a considerable amount of myxedema.

This brought us to the thought that we would cut the isthmus and take off the anterior portion of the gland to relieve them of the knot in the neck and the little choking of which most of these people complain.

This was fine until Dr. Crile suggested to me one day: why don't you give them some radiation therapy? And this worked very well until Dr. Winship pointed out radiation as carcinogenic for carcinoma of the thyroid.

And then we started using one of the cortisones. Finally Dr. Rosalind Pitt-Rivers suggested this to be an autoimmune disease, and after that time we started suppressing TSH with  $T_4$ .

And now, with over 2000 thyroidectomies under my belt, I find that we're rarely operating on thyroiditis. The ones that we are operating on are the ones that Dr. Thomas has suggested.

The problem that still remains with us are those that Dr. Behrs mentioned a moment ago with this fibrotic material in them. When we have taken needle biopsy specimens of these glands early on—and they have been typical of Hashimoto's thyroiditis—we have placed them on suppressive therapy with L-thyroxin.

Later on, some of them have not decreased in size, and we have done repeat needle biopsies, and finally operated on them. We, at that time, find considerable fibrosis in them, which reminds me of Toby Levitt's work, with which I have never really agreed, when he was working in Dr. Raymond Green's laboratory in London, in which he thought that thyroid diseases were all one process, *i.e.* from hyperthyroidism to chronic thyroiditis, Hashimoto's disease to Riedel's struma.

We're now seeing some of these Hashimoto's disease that are becoming rather fibrotic. And I wonder if Dr. Thomas has seen this, and does he have any suggestion for treatment of these glands to prevent the fibrosis, so that we can prevent operating on them?

DR. JONATHAN E. RHOADS (Philadelphia, Pennsylvania): Some years ago I was called to help defend a member of the American College of Surgeons in Wilmington who had operated rather radically on a thyroid lump which had turned out to be Hashimoto's disease, and he had had the misfortune to damage the recurrent nerve and he was being sued: and the question was whether he was justified in operating on this patient.

I looked up some of the literature, and found that my former dissecting partner at Hopkins, Dr. David Sprong, and his colleague, Dr. Pollock, had written a paper on this, and in some 53 cases of Hashimoto's disease had found a 10% incidence of malignancy. So I testified from that paper and the case was dismissed.

But I really rise to raise the question of: just when do you know that it's all right not to operate? A needle biopsy is a good thing, when positive, but when negative, you're never quite sure whether you put the needle in the right place. And sometimes the specimens, as has been mentioned, are difficult to interpret.

And then, suppressive therapy is useful, but, as mentioned, six to 12 months is desirable for a full test of this, and this is a rather long time to wait to see if a malignancy is present.

I think it's important not to do unnecessary operations. But at the same time, I think one can shrink too far from operating when in doubt, and, with care, I'm not sure that a great deal of harm is done to patients with Hashimoto's disease if you do a conservative resection and satisfy yourself that there really is no malignancy.

So I don't disagree with the thrust of this paper, but I would like to ask the essayists whether they have, after waiting six to 12 months for suppressive therapy, ever found that they did indeed have a carcinoma in the gland.

DR. ROBERT RUTLEDGE (Closing discussion): It seems that most of the questions center on the problem of: how much can you trust a needle biopsy, and when can it be used?

As Dr. Behrs pointed out, there are times when needle biopsy will not be diagnostic, and cannot be used in assisting in making the diagnosis preoperatively. In situations such as when the mass is located low near the apex of the lung, or in cases where there may be a small nodule, needle biopsy cannot be used.

At other times, the question arises whether or not the biopsy is correct. I think that numerous studies have shown that needle biopsy is accurate in identifying the histologic factors of a thyroid mass.

Dr. Behrs raised the question about so-called Hashitoxicosis. Two of our patients operated on were patients with mild hyperthyroidism and Hashimoto's thyroiditis. Both of these patients were operated on because they could not undergo suppressive therapy. They could not tolerate the thyroxin. In most cases, though, because the disease is self-limited and the severity of the toxicosis is mild, a period of waiting will provide resolution of this problem.

Finally, I think the point brought up that nonspecific thyroiditis may explain why some other groups have reported a higher incidence of thyroid cancer in patients with Hashimoto's thyroiditis is a good one. We found that patients with well-differentiated cancer had a higher incidence of thyroiditis, but it is a nonspecific thyroiditis, and does not show the classic histologic findings with Hashimoto's thyroiditis, with Askanazy cells and sheets of lymphocytes infiltrating the thyroid stroma.

We believe that Hashimoto's thyroiditis does present a distinct clinical picture which is associated with a similarly specific histologic picture. A thoughtful preoperative evaluation, including routine diagnostic studies and needle biopsy and suppressive therapy if necessary, should spare these patients from undergoing unnecessary thyroid operations.