DIAGNOSIS AND TREATMENT OF THYROIDITIS WITH SPECIAL REFERENCE TO THE USE OF CORTISONE AND ACTH

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THE 2 commonest types of thyroiditis are (1) subacute or giant cell thyroiditis and (2) struma lymphomatosa or Hashimoto's disease. Variants of the latter type of thyroiditis are common, but in the absence of the characteristic oxyphilia of the cells we classify them as lymphoid thyroiditis, not as true struma lymphomatosa.

Clinical Features of Subacute Thyroiditis

Subacute thyroiditis may manifest itself in a number of different ways. In its most fulminating form, the onset is quite sudden and is associated with severe pain in the thyroid, a high temperature and a marked systemic reaction. Frequently the patients are prostrated by their illness and narcotics may be required to control the pain. More often the disease is milder, is associated with a low-grade temperature and pain in the region of the thyroid which radiates up to the ears and may be interpreted by the patient as a sore throat.

In the chronic form of the disease, there may be little or no pain and tenderness, but the hard enlargement of the thyroid causes an unpleasant sensation of pressure or choking and the hardness of the gland may simulate adenoma or carcinoma of the thyroid.

Subacute thyroiditis usually involves both lobes of the thyroid but may originate on one side and slowly cross the isthmus and involve the other at a later date. The symmetrical involvement of the entire lobe characterizes the process even when only 1 lobe is involved and differentiates it from adenoma and carcinoma which usually are localized to only a portion of the lobe. A high sedimentation rate and a low uptake of radioactive iodine characterize subacute thyroiditis. In questionable cases, the diagnosis can be confirmed by Silverman needle biopsy of the thyroid.[1]

Conventional Treatment of Subacute Thyroiditis

For many years, we have employed x-ray therapy as standard treatment for subacute thyroiditis, giving 600 to 1000 r. This amount of radiation produces no permanent impairment of thyroid function and results in prompt relief of pain and tenderness, subsidence of the systemic reaction and, within a week or 2, in a striking diminution in the size and hardness of the thyroid. Even in the chronic cases, the process resolves promptly in response to x-ray therapy. There is no indication for surgical removal of a thyroid involved with this type

of inflammatory process, because the disease is self-limited and responds well to conservative therapy. It is said that thiouracil and methyl thiouracil also are effective.[2]

ACTH and Cortisone in the Treatment of Subacute Thyroiditis

Although x-ray therapy is a satisfactory means of treating subacute thyroiditis, there are some cases in which the symptoms are so severe that even quicker relief of symptoms is desirable, and there are others which for diagnostic reasons (because of the suspected possibility of the presence of cancer) it is desirable to obtain a definitive clinical response as early as possible. In such cases, ACTH or cortisone produce a prompt remission of symptoms and resolution of the hard mass in the thyroid. The first patients so treated that we have seen were in the clinic of Doctor Wineblad in Copenhagen where ACTH was being used. Recently we have had occasion to employ ACTH and cortisone in 2 patients with subacute thyroiditis, with excellent immediate results. Although recurrences are to be anticipated following short courses of therapy, these may be prevented by the simultaneous administration of x-ray therapy. Symptoms are relieved within 4 hours of the first dose of steroids and striking changes in the size and consistency of the thyroid occur within 48 hours.

Case Reports

Case 1. The patient was a married woman 29 years of age, who complained of a sore throat and painful swallowing of 6 weeks' duration. Just before the onset of the sore throat, she had had "virus influenza" associated with a high temperature. The "sore throat" did not respond to treatment with Terramycin, and there was a slight daily elevation of temperature.

Examination showed the thyroid to be diffusely enlarged to about twice its normal size, hard and exquisitely tender. The sedimentation rate was elevated to 1.9 mm. per minute, and a tracer dose of radioactive iodine showed no uptake of iodine in the thyroid. A needle biopsy taken with the Silverman needle showed typical subacute thyroiditis with giant cell reaction.

The patient was given 25 mg. of cortisone 4 times daily for 2 days. She felt greatly improved as soon as therapy was started and the pain and tenderness in the thyroid disappeared. These changes were noted within 6 hours of the first dose of cortisone. The dosage was then decreased to 25 mg. twice daily, but within 4 days symptoms recurred and the gland which had shrunk to two-thirds of its original size remained of the same size and consistency. The dose of Cortisone was again increased to 100 mg. daily, and again the symptoms disappeared promptly, the patient felt well, and the gland diminished further in size and became softer. At this point, 2 x-ray treatments of 150 r each were given to the thyroid area. Twelve days later (23 days after the patient was first seen) the thyroid was barely palpable, the patient had gained 7 pounds, was feeling well and had no residual pain or tenderness in the thyroid area.

Case 2. The patient was a married woman 48 years of age, who complained of pain in the right side of the neck radiating up to the right ear. The onset was gradual, 3

months before examination at the Clinic, and was associated with a low-grade fever. She had been given 2 x-ray treatments to the right lobe of the thyroid, with improvement of the symptoms; the pain and tenderness then shifted to the left side of the neck and 2 more x-ray treatments were given. Three weeks before entry she was given a course of penicillin in an attempt to control the fever. Two days previous to entry, she developed severe hives as a result of the penicillin therapy. Benadryl had failed to relieve the itching.

Physical examination showed an uncomfortable woman with severe urticaria, a temperature of 99.6 and an exquisitely tender thyroid gland. She was so uncomfortable that it was felt desirable to have her admitted to the hospital, where she was given 80 mg. of ACTH every 6 hours intravenously. The itching and the pain in the thyroid disappeared within 2 hours of the time the ACTH was started. The next day the eruption was almost gone and the thyroid was much less swollen and much softer. The thyroid was no longer painful and the gland, which on the day before had been so exquisitely tender that it could not be palpated, was no longer tender. After 48 hours of treatment, the patient was so much improved that she was sent home on decreasing doses of cortisone.

Two other patients with subacute thyroiditis have been treated with 75 to 100 mg. of cortisone daily with similar prompt remission of the signs and symptoms of subacute thyroiditis.

Clinical Features of Struma Lymphomatosa

Struma lymphomatosa or its variants loosely grouped under the term "lymphoid thyroiditis" occur predominantly in women. True struma lymphomatosa usually occur in women beyond the age of 40, but lymphoid thyroiditis may occur in young women in the twenties or even in children. Enlargement of the thyroid is frequently noted during or following childbirth. The leading symptom is usually a painless, symmetrical enlargement of the thyroid which sometimes gives unpleasant sensations of pressure. Sometimes the enlargement is rapid and the gland may grow to 4 or 5 times its normal size within a period of a few months. More commonly the onset is gradual, associated with no significant symptoms, and is characterized by a firm, rubbery consistency and a symmetrical involvement of both lobes. Irregular bosselations frequently cause the examiner to make a diagnosis of adenomatous goiter. Often there is a mild hypothyroidism and the basal metabolism is usually below 0. Occasionally myxedema occurs. In all symmetrical, firm, nodular-feeling goiters, when both lobes are involved, struma lymphomaotsa must be suspected, and even more so if the basal metabolism is less than 0. The diagnosis can be confirmed by needle biopsy.

Treatment

Lymphoid thyroiditis responds specifically to the administration of large doses of desiccated thyroid. The rationale of this therapy is to put the thyroid

completely at rest. For this reason, small doses are ineffective and doses of at least 2 gr., preferably 3 gr., of desiccated thyroid daily are required. Patients usually tolerate thyroid well if the dose is increased gradually from 1 gr. to 3 over a 3 weeks' period. The enlargement of the thyroid usually disappears completely after 1 or 2 months of thyroid therapy, but may recur if therapy is discontinued. X-ray therapy, in doses of 1500 to 2000 r, may also be of value in lymphoid thyroiditis, but since the disease responds so specifically to desiccated thyroid neither x-ray nor surgery is indicated.

True struma lymphomatosa may be more resistant to treatment with desiccated thyroid and may also be resistant to x-ray therapy. Nevertheless, 90 per cent of the cases of struma lymphomatosa which we have observed have responded satisfactorily to treatment with large doses of desiccated thyroid, x-ray therapy in doses of 1500 to 2000 r, or a combination of both types of therapy. Usually the enlargement disappears almost completely, but the consistency of the thyroid remains firm due to the fibrosis which is present in the gland. In this respect, the results of treatment differ from those following the treatment of lymphoid thyroiditis, in which the consistency of the thyroid tends to return to normal.

Case 3. The patient is a married woman 46 years of age, who had had a thyroidectomy at another hospital in July of 1949. For the past 3 months, she had noticed a rapid recurrence of the goiter and a sensation of choking.

Examination showed a large, hard recurrence of the goiter involving both lobes and the isthmus and with a tiny nodule 1 cm. in diameter palpable in the midline. A needle biopsy of the thyroid was taken, and it showed typical struma lymphomatosa. Sections made at the time of the original operation were reviewed and showed the same changes. A tracer of radioactive iodine showed 62 per cent uptake in 19 hours. Basal metabolism was plus 16 per cent.

The patient was given desiccated thyroid, grains 3 daily, in an attempt to put the thyroid at rest, but after 2 months there was only slight diminution in the size of the gland. The patient was then given roentgen therapy, a total dosage of 2400 r. Two months later the thyroid had diminished further in size and its estimated weight was now 80 Gm. The little midline nodule had disappeared. The left lobe was definitely smaller. The patient continued to take desiccated thyroid, gr. 2 daily, and 2 months later the thyroid enlargement was no longer visible nor was any thyroid tissue palpable except in the right lobe. Here there was a hard mass of thyroid tissue estimated to weigh about 25 Gm. The possibility of the presence of an adenoma was considered. The patient was feeling well, and had no symptoms of thyroid imbalance or of local discomfort.

Cortisone and Desiccated Thyroid in the Treatment of Struma Lymphomatosa

There are occasional cases of struma lymphomatosa which do not respond dramatically either to x-ray therapy or the administration of large doses of desiccated thyroid. We recently observed such a case, in which a dramatic response in the size and consistency of the thyroid followed the administration of cortisone and large doses of desiccated thyroid.

Case 4. The patient was a woman 54 years of age, who was referred with a diagnosis of nodular goiter with hyperthyroidism and rheumatic heart disease. Propyl thiouracil in doses of 50 mg. three times daily had been given for several weeks without relief of the symptoms. She stated that she had noted no unusual nervousness and had not lost weight. She had had a progressive enlargement of the thyroid during the past 2 years.

Examination showed evidence of rheumatic heart disease with aortic stenosis and insufficiency and mitral stenosis and insufficiency. The pulse rate was 92 and blood pressure 146/70. There was no evidence of cardiac decompensation. The thyroid was enlarged and nodular, with an estimated weight of 75 Gm. The basal metabolism was minus 1 per cent and there was no clinical evidence of hyperthyroidism. Since we could not establish the presence of hyperthyroidism, no treatment was advised at this time.

Eighteen months later, the patient returned, complaining that the thyroid was continuing to enlarge and had become tender. At this time the possibility of struma lymphomatosa was considered, and needle biopsy confirmed its presence. In view of the patient's cardiac status, it was thought inadvisable to give large doses of desiccated thyroid and she was given 1 grain of desiccated thyroid daily. This she tolerated poorly, and thought that it made her heart worse. In view of the fact that the thyroid took up 43 per cent of a tracer dose of radioactive iodine, it was decided to attempt treatment with radioactive iodine and 8 mc. was given. The patient felt that this treatment made her thyroid more tender and that it actually continued to enlarge.

Three months later, she was given a course of x-ray therapy, approximately 2000 r, and a second needle biopsy of the thyroid was taken which confirmed the presence of struma lymphomatosa. Five weeks after the x-ray therapy, the thyroid seemed to be still larger. It was now estimated to weigh over 100 Gm. and was easily visible. 25 mg. of cortisone was given 4 times daily for 5 days, 3 times daily for 2 days, twice daily for 2 days and once daily for 2 days. At the same time desiccated thyroid was started in doses of gr. 1 daily for 1 week, gr. 2 daily for 1 week, then gr. 3 daily. The patient noticed that the tenderness of the thyroid disappeared as soon as the cortisone was started and that the gland diminished steadily in size during the cortisone and thyroid treatment. Within a month it had decreased to less than a half of its original size, and was no longer visible. The patient was gratified with the absence of symptoms.

The effects of cortisone on struma lymphomatosa may be only transitory if large doses of desiccated thyroid are not given at the same time. In one such case the gland diminished to about half of its original size in 10 days but grew again as soon as therapy was discontinued. If desiccated thyroid is given along with cortisone the improvement which cortisone produces in the size and consistency of the thyroid may be maintained.

Summary

1. Subacute thyroiditis and the lymphoid types of thyroiditis including Hashimoto's disease are amenable to medical treatment, and surgical intervention rarely is required.

2. ACTH and/or cortisone produce a prompt and complete remission of the symptoms of subacute thyroiditis and cause rapid regression in the size and hardness of the thyroid swelling in both subacute thyroiditis and the lymphoid types of thyroiditis.

3. X-ray therapy is beneficial to both subacute thyroiditis and the lymphoid types of thyroiditis, but is not often required in the latter because the process usually can be well controlled by the administration of large doses of desiccated thyroid.

4. Needle biopsy of the thyroid has proved valuable in confirming the diagnosis of thyroiditis and in avoiding operation in patients whose problems are amenable to conservative therapy.

References

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