

THYROID DISEASE – CLINICAL FEATURES IN LATE LIFE

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Points of View

What I hope to do in this presentation is to give some insight into two or three of the most common thyroid problems in older people – hypothyroidism, hyperthyroidism and thyroid nodules. The medical profession may sometimes have a tendency to underestimate the level of enthusiasm and comprehension of a lay audience, but I propose to present my information to you in much the same way as I would to an audience of physicians or medical students, but without the use of complex terminology. The basic principles of thyroid disease in the elderly will certainly be emphasized – principles which indeed are not necessarily well understood by all medical practitioners. I also want to demonstrate some real clinical points in the care and diagnosis of thyroid disease in the elderly. I hope that this approach will be helpful to those of you wishing to gain greater understanding of your own conditions.

My point of view is that of an expert in the internal medicine of the elderly, but not that of a thyroid specialist. A particular concern for older patients is that, unfortunately, their problems do not fit neatly into a territory that belongs to any particular group of specialists. Endocrinologists with an interest in thyroidology may not have a great deal of experience with the very old. By the same token, many geriatricians will not have the same depth of understanding as a thyroidologist about the physiology and treatment of thyroid illness. In treating the elderly with thyroid disease, we ideally need both areas of expertise.

How common are thyroid problems in older people?

Most statistics on this topic refer generally to those over the age of 65. However since most geriatricians would normally deal with those in their seventies and eighties, we may have to “extend” these statistics to get a thyroid picture of this older group. Several studies referring to those over the age of 65 show that thyroid illness is very

much a disease of the elderly and that it often goes undiagnosed. One study indicates that as many as 4% of older people may have undiagnosed hypothyroidism and half as many have unsuspected hyperthyroidism. *Or to put it another way, underfunction is about twice as common as overfunction.* A geriatrician in England screened 2000 older patients in hospital and found that 5% had thyroid diseases and about half of those had been undiagnosed beforehand. Another researcher in an examination of 50 patients known to be hyperthyroid found that 2/3 of them were over age 60. Overall, research supports the idea that thyroid diseases are very much the diseases of older people and often are not properly diagnosed.

Not in the textbooks

Thyroid problems are more common in older women than in men, but the clinical examination of women is complicated by the changes in posture and anatomy brought on by thinning of the bone or osteoporosis typical in elderly women. This fact is rarely described or pictured in text books. However, by examining the x-ray slides of older women, we can see the anatomical differences in the shape of the head and neck. The head is positioned forward, bringing the lower part of the neck forward and down, causing the structures in the neck including the thyroid, to descend or crawl into the chest often behind the breast bone. This means that it is often difficult or impossible for physicians to examine physically the thyroid of most older women. In fact, one thing that can generally be counted on, (even though it is seldom seen in text books) is that if, during an examination, a thyroid gland *can be* palpated or felt in an older woman, it is probably abnormal. If most of the enlargement is in the chest, what is being felt is the “tip of the iceberg”.

Occasionally these enlargements are calcified thyroid nodules which can cause much discomfort because they squeeze other vital structures such as breathing pipes or

cause distension or engorgement of the veins in the upper chest. They can appear as rock hard masses or lumps in the chest and be misidentified as metastases of cancer from the breast or stomach that have spread to the lymph glands or the neck. These large calcified nodules are essentially problems seen only in old people, but there is very little literature on the subject. There are few text book references and little is known about these large calcified nodules. We know, however, that some malignant tumours of the thyroid gland have a tendency to calcify. We also know that nodular goitre (a common condition in older women) tends to produce calcified nodules. Although these calcified nodules may in fact be benign, it is generally advisable to biopsy them to determine their exact cause.

How hypo and hyperthyroidism differ in older patients

The causes of thyroid dysfunction in the elderly are usually different from those in younger patients. The most common cause of hyperthyroidism (or overactivity) in younger patients is Graves' disease. It is characterized by an enlarged tender thyroid gland which causes symptoms such as weight loss, depression, agitation, tremulousness, muscular weakness, warm sweaty palms, heart palpitations and racing heart. In older patients, however, the most common cause of *hyperthyroidism* is Plummer's Disease. It is characterized by a bumpy, lumpy enlarged thyroid with nodules that are overactive. The symptoms, however, are not as pronounced in older patients as they are in younger patients with hyperthyroidism.

The most common cause of *hypothyroidism* (or underactivity) in older people is Hashimoto's Thyroiditis. It results in an enlargement of the thyroid gland, caused by an autoimmune condition in which the body defences turn on some of the organs of the body, instead of attacking foreign invaders like bacteria or viruses.

The difficulty in diagnosing older patients is that thyroid abnormalities appear to the clinician much differently than the way they are "supposed to" according to textbooks. The textbooks describe typical presentations in younger patients where hyper and hypothyroidism look like two very different entities. In older patients, however, these two conditions often present in exactly the same way. With hyperthyroidism for example, we find that 3/4 of older patients present atypically; 1/3 are clinically euthyroid (have no external symptoms of thyroid dysfunction) while 15% have a syndrome called Apathetic Thyrotoxicosis, a form of hyperthyroidism which in fact looks like hypothyroidism. Correct diagnosis is thus extremely difficult but critical.

Case history

Let me tell you a case history of a patient I was asked to see about five years ago in one of the nursing homes. She was about 94 years old and about eight months earlier she had developed fibrillation of her heart that didn't respond to the usual medications to bring the heart into a more regular, more controlled heart beat. In the ensuing months she became very weak and bound to bed. She became progressively confused and when I was asked to see her, she had lost about sixty pounds, she'd been incontinent for many weeks, her skin was starting to break down, she was severely demented and we couldn't have a conversation with her.

Now I could take you into almost any nursing home in Metro and show you many patients with similar symptoms who do *not* have thyroid disease. In fact, this is not an uncommon end-stage picture of many of the neurologic diseases that may occur in old people. It's easy if somebody's 94 to just accept the fact that this is the way some undiagnosed disease – let's say Alzheimer's disease – has progressed. The physician looking after this lady, however, was significantly concerned and interested to ask for an opinion as to what might be causing her deterioration rather than as is usually the case – writing the patient off. Essentially we found that this lady was extremely toxic from hyperthyroidism but she had none of the features of typical classical thyrotoxicosis.

I tell you this story to bring home a very important point: *When hypo and hyperthyroidism present in old people, they usually present differently from the way they are supposed to in the books and from the way they do in younger and middle-aged people.* We treated this lady with a drug that suppresses thyroid function. She is still alive, she's 98 years old, she has recovered to the point where she's able to walk again and to carry on a very decent conversation. She happily went about her usual activity, capable of dressing herself and once again became part of the nursing home community.

Special signs: Confusing symptoms

In hypothyroidism, there are signs in old people which almost never appear in young patients. These are: (1) Abnormalities in the cerebellum at the back of the brain which leads to an ataxic or drunken gait. (2) Aches and pains that are not in or around the joints – rheumatism that is not arthritis. (3) Carpal Tunnel Syndrome – a compression of an important nerve to our hand in the wrist causes tingling sensations. This may be caused by hypothyroidism and not require surgery.

Nonetheless, the presentation of *hyper* and *hypothyroidism* is often very similar in older patients. In both conditions there will be a failure to thrive, confusion, depression, falling, walking disturbances, incontinence from immobility, heart failure and change of bowel habits (either constipation or diarrhoea or alternating constipation and diarrhoea). Not only do these signs make it difficult to distinguish *hyper* from *hypothyroidism* in the elderly, they are, in fact, the signs of many other common illnesses of older people.

Best test on the market: TSH

Therefore to avoid possible confusion and misdiagnosis, I simply screen all my patients over the age of 50 with the best blood test available today – the Thyroid Stimulating Hormone Test. This, in my opinion, is a test which should be done every 2 years in those over 50 and in the very old it should be done every year. In the past one or two years, new improved testing techniques have been developed that can pin-point thyroid dysfunction through better measurement of thyroid stimulating hormone or TSH. TSH comes from the base of the brain and stimulates the production of thyroid hormone. When there are low levels of thyroid hormone in the body, more TSH is produced by the brain to stimulate the thyroid to produce more thyroid hormone.

When there are high levels of hormone in the system, less TSH is produced to signal the thyroid to produce less. The TSH level is the most accurate indicator of thyroid function and is an even better test than direct measurement of thyroid hormone in the bloodstream.

The TSH test can therefore simplify things for physicians and make diagnosis more precise and timely. This is a very good thing for older patients because it makes it possible to pin-point when the thyroid is just beginning to fail and hypothyroidism is starting to develop. By treating hypothyroidism at an early stage, the slowing of the heart which accompanies this condition can be alleviated. Also the elevated TSH accompanying hypothyroidism can be brought down earlier. This helps prevent the possibility of overstimulation of the thyroid which often leads to the thyroid nodules common in older people.

This improved TSH test combined with the very recent introduction of a new series of thyroid hormone tablets of more varied dosage strengths, enables physicians to replace thyroid hormone more slowly and precisely in smaller increments. Older patients often need to be treated more carefully because of the danger of the thyroid hormone overstimulating hearts that already have

underlying disease and also because, generally speaking, older patients need less hormone replacement than younger patients since their metabolism is different. Because of the recent introduction of these sensitive TSH tests and the introduction of the new thyroid pill dosage strengths, there may be doctors not yet aware of the changes. As patients and consumers of health care services, you have a right to ask for these improvements and for information. In this way you can help spread the word about them to physicians who need to know.



Summing Up

To sum up my remarks on thyroid disease in the elderly, diagnosis may not be an easy matter. Many unusual and contradictory factors, not often described in text books, are at play. Older patients particularly should be aware of the effects and interactions of various drugs and dyes. I hope that the principles and clinical points I have emphasized have been of help to you in understanding and coping with your individual illnesses. □