Subacute Thyroiditis (de Quervain) Presenting as a Painless "Cold" Nodule

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A 49-yr-old woman presented with a solid, painless, nontender nodule in the left thyroid lobe. Thyroid scintigraphy revealed a solitary "cold" area in the left lobe and a slightly decreased 24-hr radioactive iodine thyroid uptake (9%). Although there were no specific clinical or biochemical signs suggesting thyroiditis needle aspiration cytology showed the presence of a subacute thyroiditis. Approximately 1 mo later the entire thyroid gland was affected leading to a completely suppressed thyroid radioiodine uptake and elevated serum thyroid hormone concentrations. This case illustrates that in the early phase of the disease, subacute thyroiditis may present as a solitary, painless, "cold" nodule and should be considered in the differential diagnosis of such lesions.


Typical clinical symptoms and features of subacute thyroiditis vary widely during the course of illness. In the early stage, characteristic clinical symptoms are local pain, extreme tenderness of the gland and pain frequently radiating to the ears and increasing during swallowing. Otherwise symptoms may be totally absent ("silent thyroiditis"). The gland is typically two to three times normal size and often asymmetrical enlarged (1). Involved parts of the gland are firm and usually extremely tender. In some cases only nodules appear. In ~10% of the subjects with subacute thyroiditis only one nodule is present (2). Regional involvement of the gland may change very quickly. Despite the fact that subacute thyroiditis may appear as a focal or migrating condition (3,4), scintigraphy usually reveals a uniform depression of activity. In cases in which the disease is restricted only to a circumscribed part of the gland, the concomitant thyrotoxicosis will lead to suppressed pituitary-thyroid function. Thyrotoxicosis results from leakage of thyroid hormone from the affected part of the gland. The remainder of the thyroid is then suppressed. The 24-hr radioactive iodine thyroid uptake is decreased or undetectable during the acute phase of the disease in which thyroid hormone levels in serum are high. We describe a serial scintigraphically documented history of a subject initially showing a single "cold" nodule and euthyroid function without the characteristic clinical features suggesting thyroiditis.

CASE REPORT

A 49-yr-old clinically euthyroid woman visited our outpatient internal medicine department in December 1984. Some months earlier, she had developed complaints of sore throat, pain in the anterior part of the neck, fatigue, and general weakness after an influenza-like illness. Previously she had been seen by an otolaryngologist, who found a painless, nontender nodule in the left lobe of the thyroid gland. This finding was confirmed by our own examination. We found a focal, swelling in the left lobe of the thyroid gland with a diameter of ~2 cm. The nodule was not painful on examination. Initially, no signs of hyperthyroidism were present and thyroid hormone levels in serum were normal. Thyroid scintigraphy with Na[131]I revealed homogeneous accumulation of radionuclide except a solitary "cold" nodule partly involving the mid-left lateral lobe (Fig. 1A). There was no thyroid enlargement. The 24-hr radioactive iodine thyroid uptake was 9%. Needle aspiration from the nodule in the left lobe showed findings characteristic and conclusive for subacute thyroiditis de Quervain (Cell-rich material consisting of loosely coherent clusters of thyrocytes, some multinucleated giant cells and histocytes. Macrophages and lymphocytes were rarely observed).

One month later, she had more specific complaints of thyroiditis combined with thyrotoxicosis (anterior neck pain, general weakness, reduced heat tolerance, agitation, and weight loss) supported by typical laboratory findings [elevated values for ESR, T3, T4, and FTI, alkaline phosphatase activity was 160 U/l (normal range 20–110 U/l)]. An extremely
tender nodule in the right thyroid lobe was now present and the nodule previously found in the left lobe was barely palpable.

Scintigraphy (Fig. 1B) showed no thyroid 131I uptake. Thyroid specific antibodies (hemagglutination technique) against colloid were positive and against cytoplasm slightly positive.

Five months later, the patient was entirely free of symptoms and thyroid palpation was normal. All laboratory results were within the normal range. Thyroid scintigraphy (Fig. 1C) showed even distribution of radionuclide in both lobes. Mid-lateral in the left lobe only a small region with decreased concentration of activity was observed. The 24 radioiodine uptake was 36%. Based on the findings in course of time combined with the clinical presentation, the diagnosis "subacute thyroiditis de Quervain" could be established.

DISCUSSION

The findings of moderately elevated serum thyroxine concentration, a tender enlarged thyroid, and a low radioiodine thyroid uptake are characteristic of subacute thyroiditis. Unfortunately, the disorder does not always present in the classic way and that is why subacute thyroiditis may escape recognition (3,6,7). The initial stage of subacute thyroiditis may be confused with pharyngitis (3) and other infections of the upper respiratory tract (5,6). In about one-third of all cases of subacute thyroiditis differential diagnosis is not clear because only a less specific symptom is manifest, e.g., painless goiter, palpable nodules, thyrotoxicosis, atrial fibrillation, or fever of unknown origin may form the clinical picture (9).

Volpé (10) classified the course of subacute thyroiditis in four stages. The first stage includes a thyrotoxic phase with a low radioactive iodine thyroid uptake. Mild thyrotoxicosis may result from release of stored hormone from affected thyroid tissue.

After a brief second euthyroid phase, the serum 
may become low in the third phase with a compensatory increased secretion of TSH. However, normalization of biochemical parameters is not seen before the thyroid gland is sufficiently recovered (last phase).

If a single nodule is found in an euthyroid subject without typical clinical symptom and/or biochemical evidence of thyroiditis, the cause of such an unilateral swelling should be further elucidated. Increased alkaline phosphatase activity in serum is present in ~50% of subjects with subacute thyroiditis (14). Since alkaline phosphatase is routinely measured in many laboratories, it may serve as a diagnostic clue for the physician. A close chronological association between the rise and fall in serum alkaline phosphatase level and serum thyroxine has been demonstrated (13). However, in our patient the alkaline phosphatase was normal in the initial stage of the subacute thyroiditis. In a thyroid clinic, one is frequently confronted as in this case with the differential diagnosis of whether a "cold" nodule is malignant or benign. In most cases it is possible to differentiate a benign from a malignant lesion in a "cold" nodule by examination of a needle aspiration biopsy. In the presented patient we preferred to exclude the diagnosis of thyroid carcinoma early; microscopic interpretation of the aspirate demonstrated the classic picture of subacute thyroiditis (12).

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