Subclinical Subacute Thyroiditis Discovered Incidentally at Operation for Thyroid Nodule

YOSHIHIDE FUJIMOTO AND ATSUSHI OKA
Second Department of Surgery, Faculty of Medicine,
University of Tokyo, Bunkyo-ku, Tokyo 113

Synopsis

At the operation carried out primarily for removal of thyroid nodules, a firm lesion less than 1 cm in diameter was incidentally found in the remnant thyroid tissue in two cases. With suspicion of an occult carcinoma of the thyroid, partial thyroidectomy was performed. Microscopically the lesion was proved to be subacute thyroiditis. Retrospective review of the clinical and laboratory findings revealed nothing to suggest the coexistence of the inflammatory process. Postoperatively no recurrence of thyroiditis was seen in the remaining thyroid tissue. These cases imply the presence of patients with subacute thyroiditis which may proceed subclinically throughout the course.

Patients with subacute thyroiditis usually present a moderately enlarged, firm, tender thyroid, often accompanied by the systemic manifestations such as fever and malaise. At the stage of active inflammatory process, the 24-hour radioiodine uptake at the thyroid is markedly depressed and the erythrocyte sedimentation rate is remarkably elevated. All these findings were totally absent in the two patients in whom the lesion of subacute thyroiditis less than 1 cm in diameter was found incidentally at the operation performed for the removal of the larger, clinically apparent thyroid nodules. These cases are presented here, because of the rarity of this sort of lesion. Its clinical implication is also discussed.

Case Report

Case 1
A 39-year-old man with a lump in the neck of 10 years’ duration was referred to us for its further evaluation in January, 1968. The mass increased in size recently.

On examination, the patient was a well nourished man in apparent good health except for a non-tender tumor, approximately 2 cm in diameter, located in the right lobe of the thyroid. The tumor was firm, irregular and adherent to the trachea. The ultrasonic examination showed irregularly arranged echo spots from the inside of the tumor and the neck roentgenogram demonstrated multiple punctate calcific deposits. No lymph nodes were found in the neck. The 24-hour radioiodine uptake determined 13 days before the operation was 16%. Scintiscanning showed a low uptake area in the lower half of the right lobe, the accumulation of radioiodine in the other thyroid tissue being completely normal. The erythrocyte sedimentation rate determined on the day before operation was 1 mm per hour. No pain or tenderness was noted in the neck. Other laboratory findings were all within normal ranges; serum protein 7.6 g/dl, albumin 4.6 g/dl, total cholesterol 232 mg/dl, zinc sulfate test 12, red blood cell 500 × 10^4, hemoglobin 100%, white blood cell 8800 with
normal differentials, no albuminuria and no glycosuria. The preoperative diagnosis was the differentiated carcinoma of the thyroid locating in the right lobe.

On February 5, 1968, an operation was performed. The right lobe and the isthmus were resected and the modified neck dissection was carried out. When the left lobe of the thyroid was carefully palpated, a firm, irregular mass less than 1 cm in diameter was felt in the lower portion of the lobe. Either a metastatic lesion or an independent occult carcinoma was suspected and the lower half of the left lobe was further removed (Fig. 1).

Pathological examination revealed the follicular carcinoma of the thyroid, 2 by 2 cm in size in the right lobe (Fig. 2). The lesion in the left lobe was 9 by 5 mm in size on the cut surface, irregularly outlined and whitish gray. Microscopically there was marked inflammatory reaction both in the thyroid acini and in the interstitial tissues. Desquamated epithelia, inflammatory cells and multinucleated giant cells were seen in the acinar spaces (Fig. 3 and 4). These findings were consistent with those of subacute thyroiditis. The inflammatory reactions were confined within the resected thyroid specimen, not reaching the cut margins.

Postoperatively the patient recovered uneventfully, without the recurrence of symp-

---

![Fig. 1. Schematic diagram of the cut surfaces of the resected specimens in Case 1, showing the carcinoma in the right lobe and the small lesion of subacute thyroiditis in the left lobe.](image)

![Fig. 2. Photomicrograph of the right lobe specimen in Case 1, showing the follicular carcinoma of the thyroid. (H and E, ×100)](image)
Fig. 3. Photomicrograph of the left lobe specimen in Case 1, showing the pathological changes of subacute thyroiditis. (H and E, ×40)

Fig. 4. High power view of the specimen shown in Fig. 3. (H and E, ×100)

toms and signs of subacute thyroiditis in the remaining thyroid parenchyma.

Case 2
A 46-year-old woman visited our clinic on July 2, 1970, with a neck tumor of one year's duration. Two weeks before her visit, there occurred a sudden enlargement of the nodule, accompanied by slight local pain and its radiation to the left jaw.
Examination revealed a round, smooth, non-movable nodule, measuring 6 cm in diameter, located in the lower part of the left lobe of the thyroid. Another nodule, 3 cm in diameter, was felt in the lower part of the right lobe. It had a smooth surface and was readily movable. Ultrasound scanning showed that both of them were cystic. Triiodothyronine resin uptake was 28.3% and serum cholesterol was 184 mg/dl. Erythrocyte sedimentation rate was 19 mm per hour.

By the day of operation, which was carried out on September 11, 1970, the nodules decreased in size. There were no pain and no fever. At operation, the apparently benign cystic nodules were removed from the lower poles of both lobes, which were measured 3.5 cm and 3 cm in diameter, respectively. Then careful examination of the remnant thyroid tissue revealed a small firm, irregular mass in the left upper portion. An occult carcinoma was suspected and the upper third of the left lobe was removed. On pathological examination, the nodules were colloid adenomas having undergone cystic degeneration.

The third small lesion was whitish, firm and 1.0 by 0.7 cm in size on the cut surface of the specimen. Microscopically it showed a typical figure of subacute thyroiditis at the acute inflammatory phase (Fig. 5). Postoperative course was completely smooth without development of clinical signs and symptoms of subacute thyroiditis.

Discussion

The thyroid nodule less than 1 cm in diameter is generally undetectable by palpation from outside. Scintiscanning is less valuable for the detection of small lesions. However, when the thyroid gland is exposed at operation and is directly palpated between the two finger tips, the much smaller lesions can be found. Since 1960 this method has proved to be useful in discovering an occult carcinoma. In the two cases here reported, the small lesions found at the time of operation were initially supposed to be either one of the intraglandularly metastasized foci or an

Fig. 5. Photomicrograph of specimen in Case 2, showing the lesion of subacute thyroiditis. (H and E, ×100)
independent occult carcinoma. On microscopical examination, however, they were lesions due to subacute thyroiditis.

During the 14 year period since 1960, we have experienced only two cases reported here in which the area involved by subacute thyroiditis was discovered incidentally as a small firm mass at the operation. Thus the association of clinically silent subacute thyroiditis with the clinically apparent thyroid nodules was assumed to be quite rare. On the other hand, small nodules are not uncommonly detected at the pathological examination of the surgical specimens having resected from the patients with clinically dominant subacute thyroiditis, as was documented in the series before 1960 (Fujimoto et al., 1958; Woolner et al., 1957). It could be proposed that such nodules are remaining persistently once it develops, while the subacute thyroiditis is a self-limited, transient disease.

In the two patients reported here, the pathological findings of the excised specimens were consistent with those commonly seen at the early phase of subacute thyroiditis. After the operation, therefore, the patients were closely followed up for more than one year. However, there have been neither clinical signs, symptoms nor laboratory findings which indicate the recurrence of the disease. Possibly, the lesion less than 1 cm in diameter is too small to produce inflammatory signs and symptoms.

These two cases, thus, strongly suggest the presence of patients with subacute thyroiditis which may remain clinically silent throughout the course of the disease.

References