

Miliary tuberculosis presenting with thyrotoxicosis

Y. Nieuwland, K.Y. Tan¹ and J.W.F. Elte

Departments of Internal Medicine and ¹Pulmonology, Sint Franciscus Gasthuis, Kleiweg 500, NL-3045 PM Rotterdam, The Netherlands

Summary: A male patient is described who presented with thyrotoxicosis, and a large painful neck mass. From the excised mass and stomach aspiration *Mycobacterium tuberculosis* was cultured and a diagnosis of miliary tuberculosis was made. The thyrotoxicosis was attributed to tuberculous thyroiditis.

Introduction

The incidence of tuberculosis in the Netherlands and in the United States has declined in the last decades.^{1,2} Proportionally the share of extrapulmonary form rises (at least in the United States).² The patient to be described had thyrotoxicosis and a large painful neck mass and proved to have miliary tuberculosis with probable localization within the thyroid gland, giving rise to thyroiditis.

Case report

A 30 year old Moroccan man was seen because of hoarseness (paresis of the right vocal chord) and a painful swelling in the right side of the neck. He had fever with night sweats and weight loss.

On examination he looked ill and had a temperature of 38°C. A firm swelling was palpable in the right side of the neck in which no separate lymph nodes or thyroid structure could be felt. Laboratory findings showed an erythrocyte sedimentation rate (ESR) of 45 mm/h and liver function disturbances. Thyroid function tests revealed thyrotoxicosis: plasma thyroxine > 309 nmol/l (reference values: 65–110), triiodothyronine 4.6 nmol/l (1.2–3.0), thyroid-stimulating hormone < 0.05 mU/l (< 6.1). Thyroidal antibodies were negative. At thyroid scintiscanning there was no iodine uptake (Figure 1). Ultrasound of the neck showed an area with poor echoes in the right thyroid lobe and multiple pathologically enlarged lymph nodes on both sides of the thyroid.

At plain chest X-ray and computerized tomographic (CT) scanning of the thorax there were

enlarged lymph nodes in mediastinum, carina and right hilum. CT scanning of the neck demonstrated enlarged lymph nodes with small calcifications in an enlarged thyroid gland. An excision biopsy of the mass at the right side of the neck and a percutaneous liver biopsy showed granulomatous inflammation. From the excised mass and stomach aspiration *Mycobacterium tuberculosis* was cultured. A diagnosis of miliary tuberculosis was made.

The patient was treated with quadruple tuberculostatic therapy and rapid recovery followed. Biochemical laboratory values normalized as did clinical findings in the neck. After 6 months treatment thyroid scintiscanning was nearly normal (Figure 1). At CT scanning the thyroid appeared to have become more dense pointing to diffuse calcifications (Figure 2) and the mass in the neck and the mediastinum had disappeared completely. Antibiotic therapy was given for one year. One year after completing therapy, the patient appears to be cured.

Discussion

The incidence of tuberculosis of the thyroid gland is approximately 0.1%.³ In 7% of cases with miliary tuberculosis the thyroid is involved.⁴ However, textbooks such as *Harrison's Principles of Internal Medicine*⁵ and in review articles² the thyroid, is not mentioned as a possible site of tuberculosis.

Tuberculosis of the thyroid gland can present as a nodule or as thyroiditis.^{6,7} Our patient presented with a large painful neck mass, thyrotoxicosis and absent iodine neck uptake, which was considered by us to be compatible with a diagnosis of thyroiditis.

Thyroid tuberculosis can develop by direct extension from the surrounding tissues or by

Correspondence: Y. Nieuwland, M.D., Sint Franciscus Gasthuis, Kleiweg 500, 3045 PM Rotterdam, The Netherlands.

Accepted: 13 January 1992

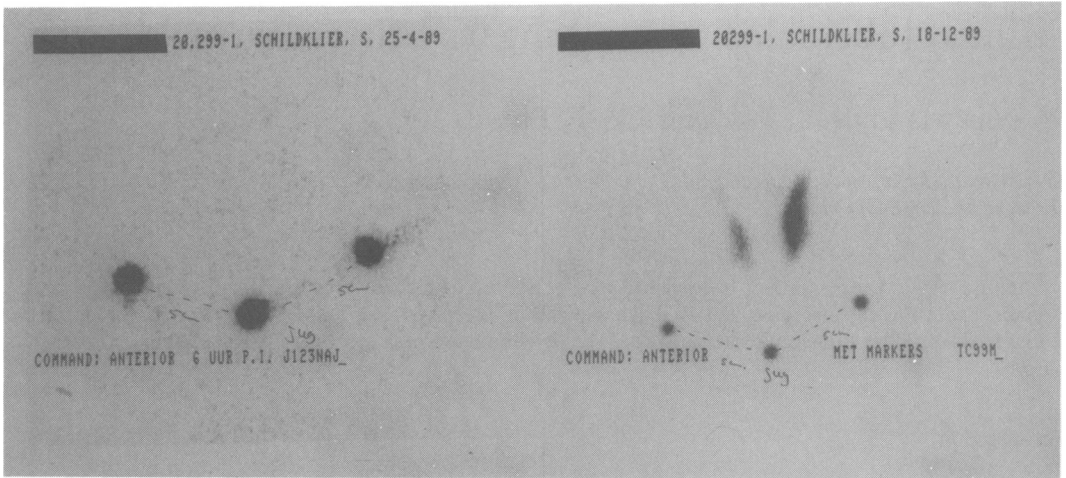


Figure 1 Thyroid scanning before and after 6 months of therapy. Before treatment there is no iodine uptake probably caused by disruption of thyroid follicles; after treatment the thyroid is clearly visible. The black dots are marking signs.

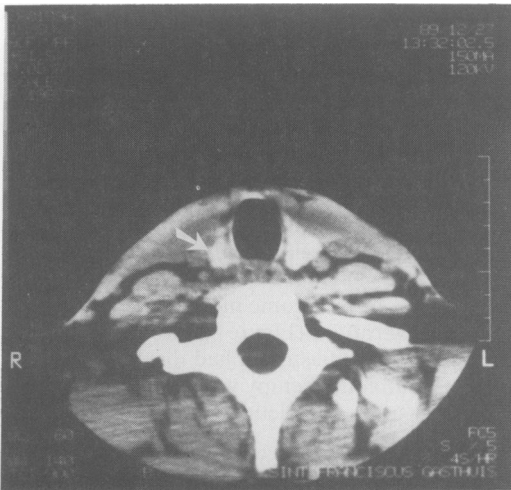


Figure 2 CT scanning of the neck after 6 months of tuberculostatic therapy. The thyroid structure has become dense, pointing to diffuse calcifications (arrow).

haematogenous dissemination in miliary tuberculosis. The latter is the more likely origin in our patient.

The thyrotoxicosis in our patient was caused presumably by disruption of follicles with release of pre-formed thyroid hormone in the circulation, as is usual in (sub)acute thyroiditis.

In recent publications only two case reports have described patients presumed to have tuberculosis of the thyroid accompanied by hyperthyroxinaemia.^{7,8}

One case exhibited recurrent laryngeal nerve palsy and had no evidence of overt tuberculosis elsewhere.⁸ The other patient had systemic disease with enlarged mediastinal lymph glands and multiple skin abscesses.⁷ Both cases had elevated ESR, diminished neck uptake at scintigraphy with positive Ziehl-Neelsen stainings of wound drainage⁸ and aspiration of the skin abscesses,⁷ respectively. In both patients thyroid puncture showed granulomatous inflammation, but no positive cultures were obtained.^{7,8} In a recent overview Berger *et al.*⁹ presented data from 21 patients with tuberculous thyroiditis gathered from the literature between 1900 and 1980. The description of many cases was incomplete. Thyrotoxicosis was reported in two patients, but relevant investigations were only performed in eight.⁹ Decreased regional uptake on thyroid scinti-scan was observed in seven of the nine patients in whom the investigation was done. Positive staining by Ziehl-Neelsen and/or positive cultures were found in most of the 13 patients in whom data were available.

In some of the patients, symptoms such as pain, tenderness, fever, dysphagia and/or dysphonia were noted.⁹ We, however, did not succeed in obtaining a biopsy specimen in which both granulomas and thyroid tissue were visible, possibly because the thyroid destruction had been so extensive.

Acknowledgement

The authors thank Mrs N. Beshay-Hofman for secretarial help.

References

1. Braat, M.C.P. Tuberculosis-unabated alertness. *Neth J Med* 1987, **30**: 217–219.
2. Alvarez, S. & McCabe, W.R. Extrapulmonary tuberculosis revisited: a review of experience at Boston City and other hospitals. *Medicine* 1984, **63**: 25–55.
3. Rankin, F.W. & Stephens, G.A. Tuberculosis of the thyroid gland. *Ann Surg* 1932, **96**: 625–648.
4. Barnes, P. & Weatherstone, R. Tuberculosis of the thyroid: two case reports. *Br J Dis Chest* 1979, **73**: 187–191.
5. Daniel, T.M. Tuberculosis. In: Wilson, J.D., Braunwald, E., Isselbacher, K.J. *et al.* (eds) *Harrison's Principles of Internal Medicine*. 12th ed. MacGraw-Hill, New York, 1991, pp. 637–645.
6. Groen, J.N., Wolffenbuttel, B.H.R., Baggen, M.G.A., Stallaert, R.A.L.M., Prins, M.E.F. & Birkenhäger, J.C. Tuberculosis of thyroid gland. *Neth J Med* 1988, **32**: 199–203.
7. Speelman, P. & Berghout, A. Huidabcessen en thyroïditis door infectie met *Mycobacterium tuberculosis* (abstract). *Ned Tijdschr Geneeskde* 1989, **133**: 1809.
8. Emery, P. Tuberculous abscess of the thyroid with recurrent laryngeal nerve palsy: case report and review of the literature. *J Laryngol Otol* 1980, **94**: 553–558.
9. Berger, S.A., Zonszein, J., Villemena, P. & Mittman, N. Infectious diseases of the thyroid gland. *Rev Infect Dis* 1983, **5**: 108–122.