

## Special Article - Subclinical Hypothyroidism

## A Case of Subacute Thyroiditis in the Elderly: A Cause of Fever of Unknown Origin

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## Abstract

Subacute Thyroiditis (SAT) is a self-limited, possibly viral, inflammatory thyroid disorder usually associated with thyroid pain and systemic disorder [1]. And also, it is an important cause of Fever of Unknown Origin (FUO) [2,5]. Common causes of FUO in many series include infectious diseases (30 to 40%), neoplasms (20 to 30%), connective tissue diseases (10 to 20%), miscellaneous conditions (15 to 20%) and undiagnosed causes (5 to 15%) [6,7]. Endocrine disorders such as adrenal insufficiency, pheochromocytomas, and hyperthyroidism are rare causes of FUO because clinical findings usually suggest the diagnosis [8,9].

We report a 67 year old female who presented with prolonged fever, weight loss, sore throat, and fatigue and neck pain for 3 weeks.

**Keywords:** Subacute thyroiditis; Fever; Unknown origin; Elderly

## Case Presentation

A 67-year-old female with fever, weakness, sore throat, fatigue and shortness of breath for 3 weeks. She had type 2 diabetes mellitus, dyslipidemia, hypertension and coronary artery disease during ten years. The condition deteriorated with palpitation, sweats, dizziness and neck pain for last two days. She had lost two kilograms during a week. She did not report any eye symptoms. There was no history of medications, and family history about thyroid disease was negative. She appeared to be weak and agitated. Temperature was 38.2°C, she was tachycardic at 95 beats per minute and normotensive (120/75mmHg). The eye examination was normal. No significant goiter was found. However, her neck was tender to touch in the left side area of the thyroid gland.

The patient's thyroid function tests were abnormal (Thyroid Stimulating Hormone (TSH) = 0.03μIU/mL (normal range: 0.35-5.5 μIU/mL); Free Triiodo Thyronine (FT3)=4.76pg/mL (normal range: 2.3-4.2 pg/mL); Free Thyroxine (FT4) = 1.9ng/dL (normal range: 0.93-1.7 ng/dL). And also, tests for anti-thyroid peroxidase (11.2IU/ml, normal range: <60IU/ml), and anti-thyrotropin-receptor antibodies (<1U/L, normal range: 0-10 U/L) were negative.

Erythrocyte Sedimentation Rate (ESR) was 114mm/hour, C - Reactive Protein (CRP) was 13.4mg/dl (normal range: 0-0.5mg/dl). Complete blood count including white blood cells, renal function and serum electrolytes were normal. From liver function tests, such as Serum Glutamic Oxalic Acetic Transaminase (SGOT) and Serum Glutamik Pirüvik Transaminaz (SGPT) were normal. However, alkaline phosphatase was found to be 160U/L (normal range: 35-104 U/L).

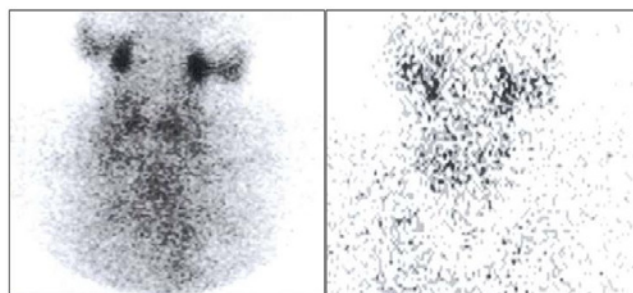
Thyroid scintigraphy with 99m- Tc demonstrated a focal accumulation of radio tracer uptake in the lower all thyroid lobes (Figure 1). Neck ultrasound showed dishomogeneous and bilateral patchy decrease in echo and vascularity, features suggesting thyroiditis. No cervical lymphadenopathy was detected (Figure 2).

Oral prednisone 40mg/d as the starting dose was prescribed and her clinical signs and symptoms improved dramatically. Steroid therapy was tapered and stopped in 20 days. On her follow - up visit in 2 weeks, she had no complained. Thyroid function tests such as TSH, FT3 and FT4 were found to be 0.01μIU/mL, 4.5pg/mL and 1.8ng/dL, respectively. C - reactive protein and ESR levels were decreased. However, four weeks later, her serum TSH, FT3 and FT4 levels were changed to 0.77μIU/mL, 1.5pg/mL and 0.8ng/dL, respectively. Hypothyroidism was diagnosed and L - thyroxin 50μg/day was administered.

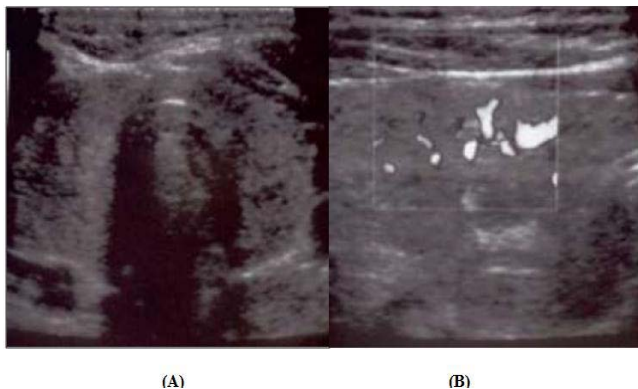
## Discussion/Conclusion

FUO can be described as a temperature higher than 38.3°C on several occasions; a fever lasting more than 3 weeks; and a failure to reach a diagnosis despite 1 week of investigation [10].

In our patient, thyroid function test revealed thyrotoxicosis, which on further evaluation was found to be secondary to subacute thyroiditis. Many of tests and imaging studies to rule out infectious, neoplastic, and rheumatic/immunologic causes of FUO. And also, serologic tests and cultures for an infectious cause were abdominal/pelvic computed tomography scans. After treating with steroids,



**Figure 1:** Thyroid scintigraphy using <sup>99m</sup>Tc pertechnetate. A focal accumulation of radio tracer uptake in the lower all thyroid lobes are shown.



**Figure 2:** Ultrasonography scan shows dys homogeneous and bilateral patchy decrease in echo (A) and vascularity (B) in both thyroid lobes.

hypothyroidism was developed on follow - up and required levothyroxine replacement.

Inflammatory conditions of the thyroid are commonly encountered in clinical practice. Older and middle - aged women are most often affected, and the clinical course may be acute, subacute, or chronic [11]. Fatourechi et al. [12] showed that pain was the presenting symptom in 96% of patients with subacute thyroiditis. However, many case studies [5,13] showed that subacute thyroiditis rarely presents as FOU without anterior neck pain or symptoms of thyrotoxicosis. Recently, Bahowairath et al. [14] illustrated that a case with subacute thyroiditis should be considered as a possible cause of fever even if signs and symptoms of hyperthyroidism and thyroid tenderness are absent.

This case suggests that, when an elderly patient has fever of unknown origin with sore throat, fatigue and neck pain, subacute thyroiditis should be considered.

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