

CASE OF SUBACUTE THYROIDITIS PRESENTING AS THE CAUSE OF PYREXIA OF UNKNOWN ORIGIN

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ABSTRACT: Pyrexia of unknown origin (PUO) is not infrequently a diagnostic dilemma for clinicians. Endocrine causes of PUO are rare. The endocrine disorder likely to present as PUO is subacute thyroiditis. Subacute thyroiditis usually occurs in middle-aged women as viral prodrome, classic symptoms of thyrotoxicosis, and an elevated erythrocyte sedimentation rate. The patient may have abrupt onset of fever and chills with complaints of thyroid pain, or only low-grade fever with poorly characterized anterior neck pain. We present a case of PUO in a 40-year-old male who had fever for more than two month. Despite an extensive evaluation, the patient had persistent fever and no cause was found, with the exception of subacute thyroiditis. The fever resolved from the fifth day of treatment with low-dose steroid (Prednisolone, 10mg per day). This case illustrates that subacute thyroiditis should be considered in cases of FUO.

KEYWORDS: Pyrexia of Unknown Origin, Thyroiditis, Subacute.

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INTRODUCTION: Pyrexia of unknown origin (PUO), first described by Petersdorf and Beeson, is among the most difficult diagnostic problems encountered in internal medicine.¹ PUO is a term used to describe fevers that are undiagnosed that have persisted for ≥ 3 weeks with a temperature of $\geq 38^\circ\text{C}$. The diagnosis of PUO should only be used if the disorder causing the prolonged fever remains undiagnosed after an intensive diagnostic workup in the hospital/outpatient setting. The most common PUO categories are infectious, neoplastic, rheumatic and inflammatory.² Endocrine causes of PUO are rare. The most common endocrine disorder presenting as PUO is sub-acute thyroiditis.² Sub-acute thyroiditis is a spontaneously remitting, painful, inflammatory disease of the thyroid gland, probably of viral origin, and is the most frequent cause of anterior neck pain. Sub-acute thyroiditis is often preceded by an upper respiratory tract infection and occurs concurrently with outbreaks of viral diseases, including mumps, measles, and influenza. There is usually a viral prodromal period exemplified by myalgia, thyroid or neck tenderness, fever, a sore throat, and dysphagia or, alternatively, only low-grade fever with poorly characterized anterior neck pain. Thyrotoxicosis occurs during the initial inflammatory phase in half of patients, but cases presenting as FUO are rare.³ We report a case of sub-acute thyroiditis presenting as FUO.

CASE REPORT: A 40 year old male. The patient was having fever since 2 months. The patient was treated with antipyretics but his fever persisted.

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Then, he underwent diagnostic workup for fever in the outpatient setting of another hospital. The results of routine laboratory test, chest X ray, unremarkable. Patient was given (Antibiotics for 1 week) and antipyretics in another hospital.

On admission, the patient's blood pressure was 118/78mmHg, her heart rate was 108 beats/min, and his body temperature was 38.3°C . The results of a physical examination were unremarkable. Chest radiography showed normal findings. Routine laboratory test results were unremarkable, except for an ESR of 90 mm/h. Other viral markers, such as CMV, EBV, HSV, adenovirus, mumps virus, measles virus, parvovirus B19, RSV, VZV, and HIV were all negative.

Antibodies for leptospira was also negative. Blood, urine and stool culture results were also negative, as were malaria blood smear results. The patient underwent contrast-enhanced computed tomography (CT) scanning of the chest, abdomen, and pelvis, the results of which were within normal limits. However, thyroid function tests revealed an elevation serum FT4 level of 3.66ng/dL and a decrease in TSH to 0.02 $\mu\text{IU/mL}$; TSH receptor antibody and thyroid peroxidase antibody test results were negative.

Thyroid ultrasonography showed enlargement of both lobes, with hypoechogenicity and a heterogeneous structure (Fig. 1). Random fine-needle aspiration (FNA) of the LT thyroid gland showed a result consistent with subacute thyroiditis. A thyroid scan with Tc-99m pertechnetate showed decreased uptake in both lobes and radioactive iodine uptake (RAIU) of iodine-131 was extremely low: 6 h, 2.1% (n=8-15); 24h, 0.6% (n = 15-45).

However, the patient's thyroid scan and RAIU analysis were performed one day after contrast-enhanced CT scans. Isotope imaging of the thyroid should be avoided for two months after iodinated contrast medium injection. So, this result did not help to reach a diagnosis of subacute thyroiditis.

Based on the above-described evidence, the diagnosis of subacute thyroiditis was made. The patient's was treated with low-dose steroid (Prednisone, 10mg per day).

His response was rapid, with her fever remitting completely from the fifth day (Fig. 2). Two weeks later, his symptoms had disappeared and the ESR and CRP level were normalized. Low-dose steroid therapy lasted for 10 days and was discontinued without a taper. Thyroid function tests that were performed at 3 weeks after discharge and showed a decrease in the serum FT4 level to 0.21ng/dL and an increase in TSH to 56.81 μ U/mL. Regrettably, the patient was not followed up further so data on her thyroid function are confined to the intra-hospital period.

DISCUSSION: PUO is not infrequently a diagnostic dilemma for practicing clinicians and often requires extensive diagnostic evaluation. Subacute thyroiditis is usually classified among the miscellaneous causes of PUO, and is the most common endocrinological cause of PUO.⁴

Sub-acute thyroiditis is characterized by generally self-limiting, usually painful, inflammatory lesions of the thyroid gland, and is probably of viral origin. The peak incidence occurs at 30 to 50 years, and women are affected five times more frequently than men. Patients characteristically present with a painful, tender thyroid that is firm, with pain radiating to the ears, mandible, or occiput. Fevers are usually 38.8°C or less (Rarely higher) and cervical lymphadenopathy is rare.⁵

A review of the literature revealed that subacute thyroiditis manifesting as PUO could be possible without anterior neck pain or symptoms of thyrotoxicosis, while typical features of thyroiditis are gradual appearance of pain in the region of the thyroid gland and symptomatic thyrotoxicosis.^{6,7}

Our patient had several features that are commonly observed in sub-acute thyroiditis, such as elevated sedimentation rate. However, he had no clinical symptoms of thyrotoxicosis,

which usually present during the early phase of sub-acute thyroiditis. So, a thorough workup of PUO was carried out. Major causes of PUO including infections, neoplasms, and connective tissue disorders were excluded by negative hematological, microbiological, immunological, and imaging results. When elevated thyroid hormone levels were noted in our hospital, the possibility of sub-acute thyroiditis was considered.

The present case suggests that, when a fever is of unknown origin, sub-acute thyroiditis should be considered, even if clinical symptoms of thyrotoxicosis are not present during the early phase. A subsequent thyroid function test may be helpful in such cases.

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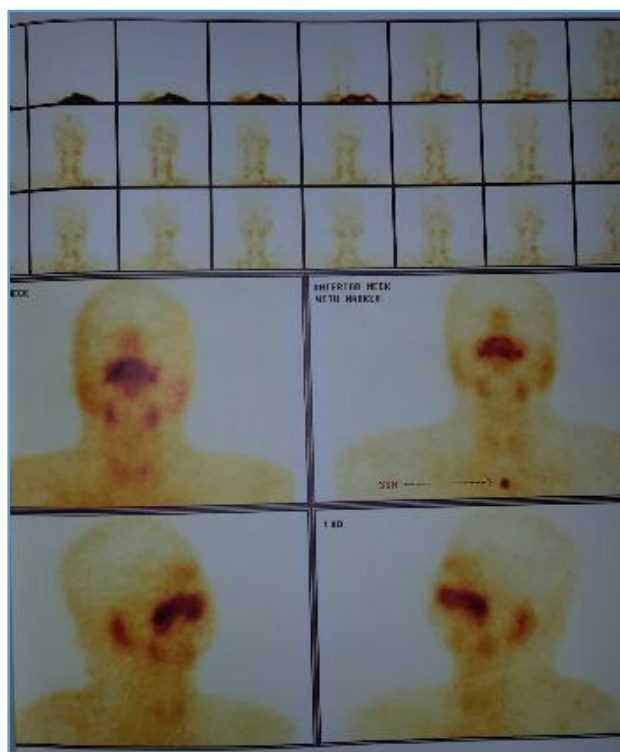


Fig.1: Thyroid scan with Tc-99m pertechnetate and Radioactive iodine uptake with iodine-131.

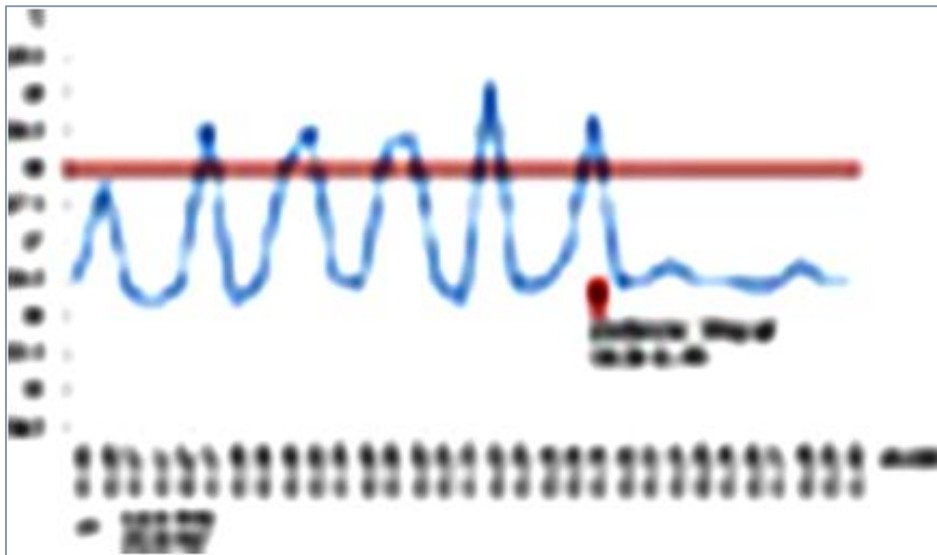


Fig. 2: The fever subsided completely from the second day of low-dose steroid