Hemithyroiditis - A Rare Scintigraphic Insight on Pertechnetate Thyroid Scan

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Abstract

Hemithyroiditis is a rare form of thyroid inflammation characterized by involvement of only one lobe of thyroid gland. The exact pathophysiological mechanism remains unclear; however, it is thought to represent a localized manifestation of chronic thyroiditis that may be triggered by upper respiratory tract infections, trauma and radiation exposure. It has a preponderance for middle aged women. Normally, most thyroiditis conditions (like Hashimoto's or subacute thyroiditis) involve both lobes, but occasionally inflammation is confined to one side. We report a case of hemithyroiditis identified on a 99m-Tc pertechnetate thyroid scan, highlighting the importance of imaging in recognizing this uncommon presentation.

Keywords: Hemithyroiditis, unilateral thyroiditis, thyroid scan
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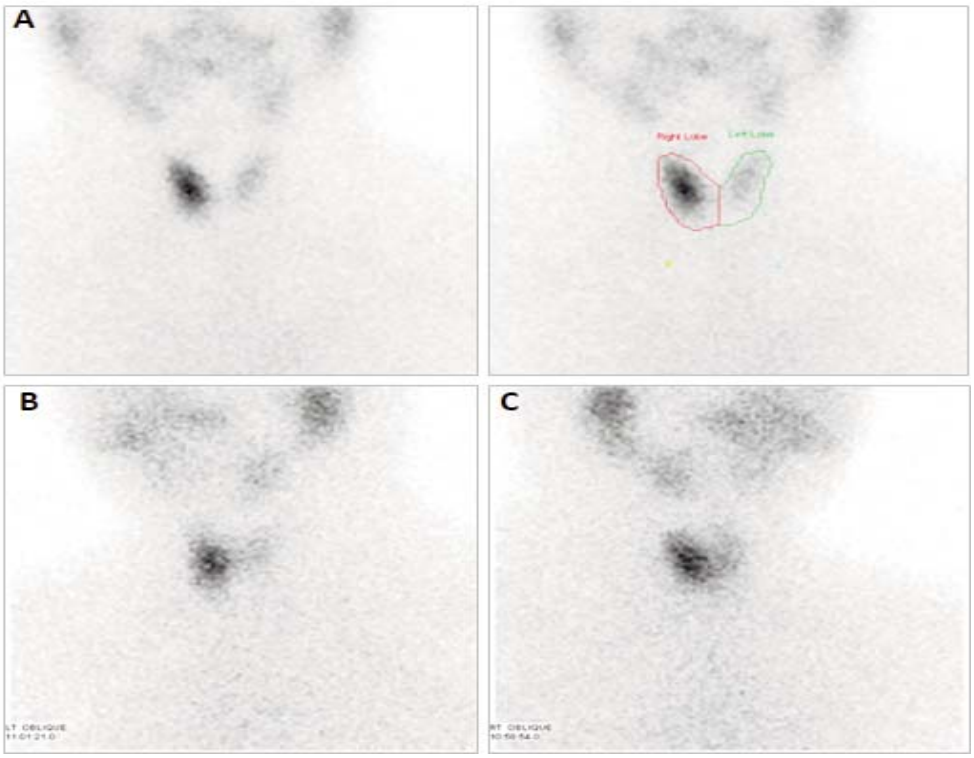

Figure: The thyroid scan was acquired 20 minutes after injecting 175MBq of Tc99m-pertechnetate. Anterior views of the neck (A) and left and right oblique views (B, C) showed reduced tracer uptake in the left thyroid lobe. The right thyroid lobe showed homogenous and better uptake than the left lobe. No discrete nodularity was identified in either lobe. Background tracer activity was within normal limits. Thyroid uptake function 0.5% [Normal = 0.4-4.5%]. Corresponding thyroid function tests showed serum TSH 0.9 µIU/mL, T4 1.21 µg/dL and T3 3.30 ng/dL.

Case Report

A 39-year-old woman presented with painful left-sided neck swelling and symptoms of recent cough, sore throat, and fever. Examination revealed an enlarged, tender, and firm left thyroid lobe, while the right lobe was not palpable. She was biochemically euthyroid and ultrasound showed normal thyroid lobes. 99m-Tc pertechnetate thyroid scan showed markedly reduced tracer uptake in the left lobe with preserved homogeneous uptake in the right lobe. The overall uptake was 0.5% (0.1% left lobe, 0.4% right lobe).

Hemithyroiditis or unilateral thyroiditis is a rare entity. Its pathogenesis remains uncertain, but it is thought to represent a localized form of chronic thyroid inflammation,[1] potentially triggered by preceding upper respiratory tract infection, as in this patient. Thyroid scintigraphy has long been used to evaluate thyroid diseases and can help in differentiating hemithyroiditis from other thyroid pathologies with decreased or absent tracer uptake such as nodules or malignancy. In this case, imaging findings correlated well

with the patient's clinical presentation.

Subacute thyroiditis typically causes painful neck swelling and prior history of most commonly viral respiratory tract infections. Thyroid function usually evolves from transient hyperthyroidism to hypothyroidism and eventually euthyroidism.[2] . Our patient presented during the later stages of thyroiditis when she was biochemically euthyroid. In its usual course it can start from one lobe and then "creep" to the other lobe.[3] Gradually it recovers on its own, and the gland becomes less tender. Management is primarily symptomatic, using non-steroidal anti-inflammatory drugs (NSAIDs) or corticosteroids for more severe pain. This case highlights an uncommon presentation important for both clinicians and nuclear medicine physicians.

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