We performed an $^{131}$I thyroid imaging on a 26-year-old man who had the clinical features of thyrotoxicosis. Physical examination revealed no goiter, no palpable nodules, and no tenderness. The imaging showed decreased activity of bilateral thyroid lobes with depressed radioactive iodine uptake. The thyroid function test showed thyrotoxicosis. Thyroglobulin antibody and microsomal antibody were undetectable. ESR was 2 mm/h (normal 0-15 mm/h). While being confronted with this information, the patient admitted he was secretly taking L-thyroxine to cut down his weight. Reviewing the clinical history and data, the possibility of subacute thyroiditis was ruled out, and the results of tests confirmed the diagnosis of thyrotoxicosis factitia. As the similarities in thyroid function tests, $^{131}$I uptake and scan, differential diagnosis between subacute thyroiditis and thyrotoxicosis factitia is important. We report here such a case.

**Key words:** $^{131}$I, thyroid uptake and scan, thyrotoxicosis factitia, hyperthyroidism


**Introduction**

Thyrotoxicosis refers to the clinical symptoms and signs of increased systemic metabolism due to elevated serum concentrations of free thyroxine ($T_4$), free triiodothyronine ($T_3$), or both. It should be made to identify the exact cause of thyrotoxicosis that determines the prognosis and treatment [1-4]. Etiologies of thyrotoxicosis include Graves’ disease, multinodular goiter, subacute thyroiditis, silent thyroiditis, and drug-induced thyrotoxicosis. We here present one case of thyrotoxicosis factitia that is rarely a cause of thyrotoxicosis with depressed radioactive iodine uptake.

**Case Report**

A 26-year-old man was presented with relatively rapid onset of palpitations, insomnia, anxiety, neck pain, and mood swings. Physical examination revealed a pulse rate of 104 beats per minute, and hand tremor. On palpation of the neck, there was no goiter, no palpable nodules, and no tenderness. Laboratory values were as follows: $T_4=18.2 \mu g/dl$ (normal 4.5-12.5 $\mu g/dL$), $T_3=221.7 \mu g/dL$ (normal 86-187 $\mu g/dL$), and TSH 0.06 $\mu IU/mL$ (normal 0.25-4 $\mu IU/mL$). The anti-TSH receptor antibody (ATR) was 1.4 IU/L (normal 0-1.5 IU/L). The ESR was 2 mm/h (normal 0-15 mm/h). The serum thyroglobulin antibody and microsomal antibody were both negative at 1:100 (negative result). Thyroid imaging using $^{131}$I showed minimal thyroid activity (only slightly higher than background activity) (Figure 1). The 2-h and 24-h $^{131}$I radioactive iodine uptake (RAIU) were 1.1% (normal 4-12%) and 3.5% (normal 15-40%), respectively. On the second interview for medication history, the patient denied previous iodine, interferon and amiodarone administration, but he admitted he was secretly taking levothyroxine tablets to lose weight. These results essentially confirmed the diagnosis of thyrotoxicosis factitia. After withdrawal of levothyroxine for one month, thyrotoxic symptoms disappeared. Thyroid func-