

Occurrence of Subacute Thyroiditis following Influenza Vaccination

Sir,

We want to discuss a case scenario of a 35-year-old woman who presented with palpitations, weight loss, increased sweating, and tremors for 2 weeks. Thyroid function test revealed a thyrotoxic profile (T3: 2.42 ng/mL, T4: 18.92 µg/dL, and thyroid stimulating hormone (TSH): <0.005 µIU/mL) at that time. On examination, the patient had mild tenderness on the thyroid region and also gave history of central lower neck pain that radiated to both ears. Her symptoms worsened over the next one month. For thyrotoxicosis workup, she underwent technetium-99m pertechnetate scan, which revealed decreased radiotracer uptake in both lobes of thyroid gland with preserved salivary background activity, as shown in Figure 1. During interpretation of the scan, a detailed history was sought by the nuclear medicine physician from the patient. There was no antecedent history of viral infections, sore throat, or any drug/iodine interference to explain low uptake in the scan. These are the common causes that are considered for explaining the thyroiditis picture in the scan. But on further enquiring, she gave history of being vaccinated with a live

attenuated influenza vaccine, 8 weeks prior to onset of symptoms. The patient reported some symptomatic improvements with atenolol. Over the next one month, her toxicosis gradually decreased, she reported weight gain and reduced tremors, and her thyroid profile showed subclinical hypothyroidism (T3: 1.06 ng/mL, T4 7.29 µg/dL, and TSH: 8.22 µIU/mL). She became euthyroid at the end of 23 weeks (T3: 1.07 ng/mL, T4: 7.32 µg/dL, and TSH: 4.15 µIU/mL).

Subacute thyroiditis (De Quervain thyroiditis) and autoimmune thyroid diseases are frequently associated with viral infections.^[1] Thyroid inflammation is caused due to cross recognition of virus and thyroid cell antigens by the cytolytic T cells. Subacute thyroiditis following viral vaccines has been reported previously with vaccines against influenza virus. One such reported case was of a 28-year-old woman who presented with pain and swelling in the thyroid 2 weeks post vaccination against influenza with symptomatic relief after methyl-prednisolone.^[2] In another report, a 36-year-old patient presented with palpitation, anxiety, neck pain, and symptoms of

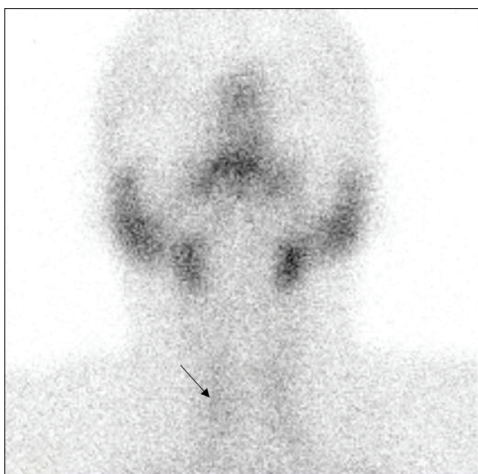


Figure 1: Technetium-99m pertechnetate scan showing negligible radiotracer uptake in both lobes of thyroid gland. There is normal background and salivary gland radiotracer activity

thyrotoxicosis 1 month after she received H1N1 vaccine. There was no antecedent thyroid disease or viral infection prior to the episode.^[3] Similarly, in another reported case, a 25-year-old woman had episodes of fever, left neck swelling. She also had a history of having received vaccine against influenza virus before this episode. The patient recovered after receiving a course of nonsteroidal antiinflammatory drugs and steroids.^[4] The time between vaccination and thyroiditis was higher in our case compared to other published cases. There are also reports of subacute thyroiditis post vaccine against hepatitis B.^[5] The etiology of subacute thyroiditis remains unclear many a times, but as in this case, considering temporal association between the vaccination and onset of thyrotoxicosis, lack of any other precipitating factor coupled with lack of any other cause for negligible 99m-Tc pertechnetate uptake on scan, a diagnosis of subacute thyroiditis probably post influenza vaccination was favored. Hence these findings emphasize that history of recent live attenuated vaccination should also be enquired as one of the possibility along with other more common causes during interpretation of thyroid scan showing thyroiditis picture.

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Conflicts of interest

There are no conflicts of interest.

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