

**Background:** Subacute thyroiditis typically occurs a few weeks after a viral infection and is the most common cause of painful thyrotoxicosis. Cases of subacute thyroiditis have been reported following both inactivated and live-attenuated vaccines, such as the influenza vaccine. We describe a case of subacute thyroiditis in the setting of the Pfizer-BioNTech mRNA COVID-19 vaccination.

**Clinical Case:** A 40-year-old man with no significant medical history presented with signs and symptoms of thyrotoxicosis after receiving the Pfizer COVID-19 vaccine. Symptoms began 3 days after receiving the second vaccine dose and included 9 kg unintentional weight loss, arthralgia in both knees, palpitations, fatigue, bilateral thigh weakness, and diffuse neck swelling, pain, and tenderness. Initial treatment with antibiotics for presumed upper respiratory infection did not improve symptoms, and PCR testing for COVID-19 infection was negative. Thyroid ultrasound obtained 15 days after symptoms onset revealed a 4 cm nodule in the left lobe of the thyroid gland. Testing 30 days after onset of symptoms demonstrated TSH < 0.005 uIU/mL (ref: 0.45-4.50 uIU/mL), elevated free T4 of 2.53 ng/dL (ref: 0.82-1.77 ng/dL), and elevated erythrocyte sedimentation rate of 42 mm/hr (ref: 0-15 mm/hr). Repeat labs and imaging 9 days later demonstrated improvement with a TSH of 0.071 uIU/mL and free T4 of 1.04 ng/dL as well as decreased nodule size (2.5 cm). At this time, the patient reported resolution of all symptoms and return to baseline weight. Thyroid ultrasound obtained 3 months after symptoms onset demonstrated normal thyroid without detectable nodules or enlargement, and complete normalization of TSH and free T4 levels to 4.250 uIU/mL and 1.22 ng/dL, respectively.

**Conclusion:** This is the second documented case of subacute thyroiditis following the Pfizer-BioNTech vaccine for COVID-19 in a male patient. A literature review demonstrates 12 other cases of subacute thyroiditis following the Pfizer-BioNTech mRNA COVID-19 vaccine, 3 cases following the Moderna mRNA COVID-19 vaccine, 8 cases following the AstraZeneca recombinant COVID-19 vaccine (one male patient), 4 cases following the CoronaVac inactivated SARS-CoV-2 COVID-19 vaccine, 1 case following the Covaxin inactivated SARS-CoV-2 COVID-19 vaccine, and 3 cases following the Janssen viral vector SARS-CoV-2 COVID-19 vaccine. Albeit uncommon, providers should be aware that transient thyrotoxicosis following COVID-19 vaccination may occur. Similar to subacute thyroiditis due to viral infection, the clinical course is generally self-limited with patients returning to a euthyroid state within a few months. Usual management of subacute thyroiditis with symptomatic management and watchful waiting is appropriate.

*Presentation:* Sunday, June 12, 2022 12:30 p.m. - 2:30 p.m.

Abstract citation ID: bvac150.1758

## Thyroid

PSUN36

### **Subacute Thyroiditis Following mRNA Vaccine for COVID-19 in a 40-Year-Old Male Patient**

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