Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Subacute thyroiditis might be a complication triggered by SARS-CoV-2

La tiroiditis subaguda podría ser una complicación causada por el SARS-CoV-2

Subacute thyroiditis (SAT), also called subacute granulomatous thyroiditis or De Quervain's thyroiditis, is a disease characterized by sudden onset of neck pain and thyrotoxicosis. Although the cause of SAT has not been well established, clusters of the disease have been reported during outbreaks of viral infection. Hence, adenovirus and some enterovirus might be responsible for a large proportion of cases.[1]

The actual coronavirus disease 2019 (COVID-19) pandemia, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has reached more than 16 million confirmed cases worldwide, being the United Kingdom, Spain and Italy the most affected countries in Europe.

We describe a clinical case of SAT following SARS-CoV-2 infection.

On April 15th a 28-year-old nurse, with no prior illness known but a family history of autoimmune disease in first degree relatives (Celiac disease and Crohn's disease), initiated diarrhea and abdominal pain, without fever or respiratory symptoms. She was working in an in-patient COVID-19 ward of a hospital in Lleida (Spain). On May 1st a naso-pharyngeal swab test for SARS-CoV-2 was positive. On May 14th diarrhea ended, while she started with fever up to 38.5 °C, neck pain irradiated to the jaw, sore throat, palpitations and severe asthenia. Thyroid function was assessed, showing hyperthyroidism (thyrotropin (TSH) < 0.001 mU/L (normal range 0.38–5.33), free thyroxine (FT4) 37.5 pmol/L (normal range 7.0–16.0)). She also had a C-reactive protein (CRP) of 176 mg/L (normal range 0.0–6.0) and a mild leukocytosis (11.2 × 10 × 9/L) with neutrophilia (77.9%). Paracetamol (1 g/8 h) was prescribed to treat fever and neck pain. The naso-pharyngeal swab test for SARS-CoV-2 turned negative on May 21st. She arrived at our service on May 25th, without symptoms relief and blood test showed hyperthyroidism had worsened (TSH < 0.001 mU/L, FT4 67.5 pmol/L). Antibodies to thyroglobulin (TgAb), peroxidase (TPOAb) and TSH-receptor were negative. CRP was 173 mg/L and erythrocyte sedimentation rate (ESR) was 116 mm (normal range 0–20). During the physical exam, she presented with a grade 2 goiter that was excruciating when palpated and sharp in character. She had no signs of Grave's ophthalmopathy or any skin lesions. She suffered a sinus tachycardia at 150 bpm without fever at that moment. We started treatment with 500 mg of aspirin and 40 mg of propranolol, both every 6 h. Symptoms improved in 24 h, with a total relief in 2 weeks. On June 2nd FT4 was 50.4 pmol/L. On June 15th FT4 was 10.5 pmol/L, CRP was 2.1 mg/L and ESR 56 mm. Thyroid scintigraphy with 5.73 mCi of ^{99m}Tc-pertechnetate was performed on May 26th, which showed absence of uptake in the gland (Fig. 1).

SAT is thought to be the result of cytolytic T-cell recognition of viral and cell antigens in appropriate complexes, but direct data of the presence of virus or their components in the thyroid gland are limited.[1] To our knowledge, no cases of SAT were reported in the SARS epidemic of 2002.[1,6]

Figure 1 ^{99m}Tc-pertechnetate scintigraphy. Absent ^{99m}Tc-pertechnetate uptake during thyroid scintigraphy performed in day + 12 after onset of thyroiditis symptoms.

In autopsies of patients with SARS, an extensive injury of the follicular epithelial cells and the parafollicular cells was described,[7] although SARS associated coronavirus was not found in the thyroid gland of autopsy samples.[8] To date, four cases of subacute thyroiditis during or shortly after SARS-CoV2 infection have been reported.[2–5] Three of those were in Italy and one in Turkey. No remarkable data in thyroid autopsies of COVID-19 fatalities have been reported to date.[9,10]

SAT is a clinical entity that must be suspected in patients that experience a sudden onset of neck pain and tenderness, during or after COVID-19 disease.

Conflict of interest

The authors declare no conflicts of interest.

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