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An atypical co-existence of sialadenitis and thyroiditis in a COVID-19 patient: A case report

Bir COVID-19 hastasında sialadenit ve tiroidit atipik birlikteliği: Bir olgu sunumu

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Abstract

COVID-19 (SARS-CoV-2) is an infectious disease that causes respiratory tract infection in humans. This disease, which first appeared in Wuhan, China, has spread worldwide, causing a pandemic. COVID-19, which is constantly came into question with new complications, remains the leading problem all over the world. In this case report, it was aimed to present a COVID-19 case with both sialadenitis and thyroiditis. Although separate cases of thyroiditis and sialadenitis have been reported, we think that it may contribute to the literature since there is no similar case with together.

Keywords: COVID-19 disease, sialadenitis, splenomegaly

Öz

COVID-19 (SARS-CoV-2) insanlarda solunum yolu enfeksiyonuna neden olan bulaşıcı bir hastalıktır. İlk olarak Çin'in Vuhan kentinde ortaya çıkan bu hastalık tüm dünyaya yayılarak bir pandemiye neden oldu. Sürekli yeni komplikasyonlarla gündeme gelen COVID-19, tüm dünyada hala en önde gelen sorun olmaya devam ediyor. Bu olgu sunumunda hem sialadenit hem de tiroidit ile seyreden bir COVID-19 vakasının sunulması amaçlandı. Tiroidit ve sialadenit için ayrı vakalar bildirilmiş olsa da birlikte benzer bir vaka olmaması nedeniyle literatüre katkı sağlayabileceğini düşünüyoruz.

Anahtar kelimeler: COVID-19 hastalığı, sialadenit, tiroidit

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Introduction

COVID-19 disease caused by SARSCoV-2 was accepted as a pandemic by the World Health Organization on March 11, 2019 [1]. Initially, COVID-19 was thought to involve only the pulmonary system, but with the progression of pandemics extra pulmonary symptoms have been reported [2]. Subacute thyroiditis (De Quervain's thyroiditis, subacute granulomatous thyroiditis) and sialadenitis are the inflammation of the thyroid and salivary glands respectively. These inflammatory diseases could be observed following viral infections. Data on COVID-19-related thyroiditis and sialadenitis have begun to emerge [3, 4].

Here in, COVID-19 patient with both sialadenitis and thyroiditis is presented.

Case report

A 52-year-old female patient was admitted to the internal medicine outpatient clinic of our hospital with complaints of pain and swelling that radiated to her chin under both ears. Her complaint started about 7 days ago and was accompanied by fatigue. The patient did not use any medication during this period. She has been suffering from hypertension for 10 years and has been using oral ramipril. In the first physical examination of the patient in the outpatient clinic, her temperature was 37.5°C, her pulse was 88 beats/min, her oxygen saturation was 98%, and her blood pressure was 135/80 mmHg. Edema, hyperemia, and increased body temperature were observed in the anterior neck and from both tragus to the chin. On respiratory examination, bilateral diffuse end-inspiratory crepitant rales were heard. At the first examination of the patient, we obtained the following results: White blood cell count 2500 10^9/L, lymphocyte 720 10^9/L, platelet count 113.000 10^9/L, hemoglobin 11.2 g/dL, glucose 98 mg/dL, urea 32 mg/dL, creatinine 0.76 mg/dL, aspartate aminotransferase 30 U/L, alanine aminotransferase 10 U/L, ferritin 241 ng/mL, CRP 31 mg/dL, sedimentation 63, lactate dehydrogenase 296 u/L, TSH 0.01 mIU/L (range 0.38-5.33), fT4 2.2 ng/dL (range 0.61-1.12), fT3 5.4 pg /mL (range 2.6-4.4), d-dimer 4.4 mg/L.

In the superficial tissue ultrasound taken, both parotid gland parenchyma was distinctly heterogeneous, and they had a patchy pseudocyst appearance. The thyroid gland was diffusely heterogeneous. Both submandibular gland parenchyma was heterogeneous (sialadenitis in both glands) secondary to their appearance with patchy hypoechoic pseudocysts. There were reactive lymph nodes in the neck, with a fatty hilus measuring 9 mm on the short axis of the common larger one at all levels. In the non-contrast lung tomography, in both lungs, there were common nodular consolidated areas, the largest measuring 34x18 mm, prominent in the upper lobes and the center, and the spleen was reported to be 16 cm larger than normal in the cut areas (Figure). Splenomegaly was confirmed by abdominal ultrasound.

COVID-19 PCR nasal swab test and other viral-autoimmune markers were sent from the patient. After the COVID-19 PCR test was positive, subacute thyroiditis, viral pneumonia, acute sialadenitis were considered in the patient, and the treatment of 5-day favipiravir tablet, levofloxacin tablet, deltacortil tablet, low molecular weight heparin was started, and the filiation teams were informed about the home quarantine rules. Other viral markers sent were negative, anti-TPO, anti-TG, and thyroid receptor antibodies were negative. The patient was followed up during the quarantine period, and he was interviewed by phone every 48 hours. The patient had no fever, cough, and shortness of breath did not develop. On the 15th day after the quarantine, she applied to the internal medicine outpatient clinic again. Her vital signs were stable, her breathing sounds were normal, and the swelling and redness on her face had improved. In control examinations, we found these laboratory investigations: White blood cell count 4900 10^9/L, lymphocyte count 1300 10^9/L, platelet count 149.000 10^9/L, hemoglobin 11.6 g/dL, glucose 90 mg/dL, urea 36 mg/dL, creatinine 0.70 mg/dL, aspartate aminotransferase 29 U/L, alanine aminotransferase 102 U/L, amylase 41 U/L, lipase 31 U/L, TSH 1.2 mIU/L, fT4 0.79 ng/dL, fT3 2.7 pg/mL ferritin 30 ng/mL, CRP 6 mg/dL, sedimentation 12, lactate dehydrogenase 210 u/L, d-dimer 0.4 mg/L. It was reported that the inflammation in the parotid glands regressed in the control superficial tissue ultrasound, the thyroid gland was heterogeneous, and the lymph nodes in the neck were smaller compared to the previous ultrasound. In the abdominal ultrasound, the spleen dimensions were measured as 15 cm, a reduction was observed compared to the previous one.

The patient gave consent to have personal health information published without divulging personal identifier.

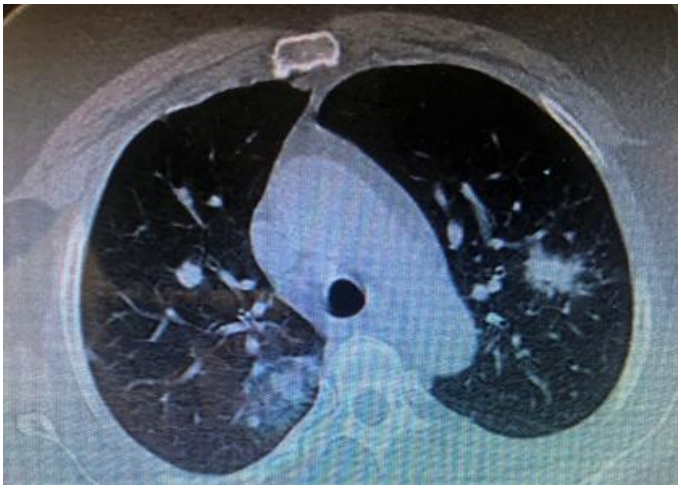

Figure 1: Non-contrast chest computerized tomography image of the patient.

Discussion

Subacute or de Quervain's thyroiditis is a granulomatous thyroiditis that usually occurs during or after viral infection in patients with a genetic predisposition [5]. Mumps virus, Adenovirus, Measles virus, Coxsackie virus, Epstein-Barr virus, Measles viruses can cause inflammation in the thyroid and salivary glands. Subacute thyroiditis has been reported most frequently in women (3-5 times more), between the ages of 30-50. Thyroiditis presents with pain in the neck region, difficulty in swallowing, and fever 15-21 days after viral infections [6, 7]. Our case was a 52-year-old female patient with COVID 19 pneumonia who had complaints for 7 days. Generally, improvement is seen within 4-6 weeks in thyroiditis, but sometimes it may cause prolonged symptoms. In our case, the process continued for 2 weeks. The mechanism for the physiopathology of thyroiditis in COVID-19 patients is claimed to be related to angiotensin-converting enzyme 2 (ACE-2), which is expressed in the thyroid gland and essential for SARS-CoV-2 to be able to invade human cells [8]. In a review including 22 cases reported until May 2021, it was concluded that de Quervain's thyroiditis is an extra-pulmonary symptom of SARS-CoV-2 infection and SARS-Cov-2 should be kept in mind during the etiological workup of de Quervain's thyroiditis, especially in women [8]. However, in a more recent study in

Italy, it was showed that there is no increase in the incidence of subacute thyroiditis during the pandemic [9].

Acute sialadenitis is usually caused by bacterial infections, followed by viral infections and some inflammatory diseases (sarcoidosis, Sjogren's). Most viral transmission to the salivary glands usually occurs via the hematogenous spread, but it may occur more rarely with retrograde ductal migration [10]. The salivary gland pathogens can be detected with the nasopharyngeal swab sample, which is the diagnostic method of respiratory tract viruses. However, since the mucus produced from the salivary glands is also in the nasopharynx and lungs, it supports the idea that the virus infects the salivary glands [11]. Like the thyroid gland, acinar epithelial cells of salivary glands express ACE 2. It was hypothesized that the development of acute sialadenitis during SARS-CoV-2 infection is related to ACE2 [12]. Until now, there are a few case articles on salivary and parotid gland inflammations associated with COVID-19 [13]. In our case, involvement was observed in both submandibular glands and parotid glands.

In conclusion, the cases of COVID-19-related thyroiditis and sialadenitis continue to be reported in increasing COVID-19 studies [3, 4]. To our knowledge, this is the first report of sialadenitis and subacute thyroiditis co-existence in a COVID-19 patient. Further studies with more samples are needed to establish the relationship between COVID-19 and thyroiditis and sialadenitis.

References

1. Lu H, Stratton CW, Tang YW. Outbreak of pneumonia of unknown etiology in Wuhan, China: The mystery and the miracle. J Med Virol. 2020;92:401-2.
2. Roberts CM, Levi M, McKee M, Schilling R, Lim WS, Grocott MPW. COVID-19: a complex multisystem disorder. Br J Anaesth. 2020;125:238-42.
3. Chern A, Famuyide AO, Moonis G, Lalwani AK. Sialadenitis: A Possible Early Manifestation of COVID-19. Laryngoscope. 2020;130:2595-7.
4. Seyed Resuli A, Bezgal M. Subacute Thyroiditis in COVID-19 Patients. Ear Nose Throat J. 2021 May 11:1455613211012114.
5. Sweeney LB, Stewart C, Gaitonde DY. Thyroiditis: an integrated approach. Am Fam Physician. 2014;90:389-96.
6. Wei L, Sun S, Xu CH, Zhang J, Xu Y, Zhu H, et al. Pathology of the thyroid in severe acute respiratory syndrome. Hum Pathol. 2007;38:95-102.
7. Liu L, Wei Q, Alvarez X, Wang H, Du Y, Zhu H, et al. Epithelial cells lining salivary gland ducts are early target cells of severe acute respiratory syndrome coronavirus infection in the upper respiratory tracts of rhesus macaques. J Virol. 2011;85:4025-30.
8. Caron P. Thyroiditis and SARS-CoV-2 pandemic: a review. Endocrine. 2021;72:326-31.
9. Pirola I, Gandossi E, Rotondi M, Marini F, Cristiano A, Chiovato L, et al. Incidence of De Quervain's thyroiditis during the COVID-19 pandemic in an area heavily affected by Sars-CoV-2 infection. Endocrine. 2021;7:1–4.
10. Genç Demirağ D, Pekkenç Abatay M, Karataş Eray İ. Aklımıza gelsin yeter: Subakut tiroidit. Ankara Medical Journal. 2019;19: 210-2.
11. Capaccio P, Pignataro L, Corbellino M, Popescu-Dutruit S, Torretta S. Acute Parotitis: A Possible Precocious Clinical Manifestation of SARS-CoV-2 Infection? Otolaryngol Head Neck Surg. 2020;163:182-3.
12. Wang C, Wu H, Ding X, Ji H, Jiao P, Song H, et al. Does infection of 2019 novel coronavirus cause acute and/or chronic sialadenitis? Med Hypotheses. 2020;140:109789.
13. Lechien JR, Chetrit A, Chekkoury-Idrissi Y, Distinguin L, Circiu M, Saussez S, et al. Parotitis-Like Symptoms Associated with COVID-19, France, March-April 2020. Emerg Infect Dis. 2020;26:2270-1.