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Persistent tonsillitis may become another symptom of COVID-19, and immuno-nutrition supports the healing process in patients with a history of tonsillitis: a case report

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Abstract

At the end of data collection, a health survey supervisor aged 26 years old with normal body temperature conducted a PCR swab test as a research protocol. He already felt unwell three days before the PCR swab test. The test showed positive for COVID-19. He self-isolated and consumed nutritional supplements, including B vitamins, vitamin C, vitamin D, zinc, propolis, and probiotics. This case found persistent tonsillitis with odynophagia as the primary symptom. Other symptoms like sore throat, hot sensation in feet and hands, headache and mucus production behind the nose appeared only for one or two days. No fever, dry cough, and diarrhea were found. On day 8 of confirmation, the PCR swab test showed a negative result. Even several days after the negative result, an enlarged tonsil was still observed, but without odynophagia. We propose that persistent tonsillitis should be regarded as a new symptom of COVID-19, and immuno-nutrition supports the healing process in a patient with a history of tonsillitis.

Keywords: COVID-19; immuno-nutrition; SARS-CoV-2; tonsillitis

INTRODUCTION

WHO, on March 13, 2020, declared the COVID-19 outbreak as a pandemic. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which is the cause of COVID-19, has infected over 75 million people (around 10% of the total global population) till the end of 2020. New confirmed cases remain persistently high. The broad clinical spectrum of the diseases, ranging from fever, sore throat, dry cough, headache, and diarrhea, to severe pneumonia, causes difficulty in the early stage in identifying and controlling the spread of COVID-19 [1,2]. Current knowledge showed no association between COVID-19 and tonsillitis. However, one study in Pakistan reported tonsillitis as the manifestation of COVID-19 in a 24-year female [3]. Thus, we aimed to report similar findings.

Meanwhile, immuno-nutrition has been proposed to take a significant role in the prevention and treatment of COVID-19. Micro-nutrient deficiency is associated with a high risk of viral infection and its severity [4]. Several vitamins and minerals serving as immunomodulators like vitamins A, B, C, and D, zinc, selenium, magnesium, and copper, potentially contribute to COVID-19 prevention and treatment [5]. Besides presenting a new COVID-19 symptom, this report aimed to show the role of immuno-nutrition in the healing process of COVID-19 patients.

CASE PRESENTATION

A 26-year-old male patient came to the Regional Public Hospital of South Sumatra for a PCR swab test on December 3, 2020, with a normal body temperature (36,5^{o}C). He was a supervisor of a health survey in

Palembang city. To follow survey protocols, he got nasopharyngeal and oropharyngeal PCR swab tests. On November 28, 2020, the last day of data collection, he supervised the enumerators in several census blocks following strict protocols. After the previous supervision, he self-isolated at a hotel and minimized physical contact. On November 30, 2020, he started feeling unwell, headaches, and odynophagia. He has a history of tonsillitis. The symptoms continued until the day of the PCR swab test.

Table 1. Developing symptoms of a 26-year-old male patient with COVID-19

Estimated Exposure Day	Day of Confirmation	Symptoms
1	-	No symptom
2	-	No symptom
3	-	Swollen tonsil with odynophagia
4	-	Swollen tonsil with odynophagia, headache
5	-	Swollen tonsil with odynophagia, sore throat
6	1	Swollen tonsil with odynophagia, hot sensation in hands **(+)**
7	2	Swollen tonsil with odynophagia, hot sensation in feet, nasal congestion
8	3	Swollen tonsil with odynophagia felt mucus behind the nose
9	4	Swollen tonsil with odynophagia
10	5	Swollen tonsil with odynophagia
11	6	Swollen tonsil with odynophagia
12	7	Swollen tonsil with odynophagia started to heal
13	8	Enlarged tonsil without odynophagia **(–)**

(+) shows positive PCR swab test result
(–) shows negative PCR swab test result

We estimated SARS-CoV-2 had infected the patient on November 28, 2020, when he supervised the data collection process by considering minimum physical contact before and after the supervision. The patient experienced mild symptoms during the infection period, where the symptoms appeared on day three after the estimated day of infection. Table 1 shows the symptoms suffered by a patient with a primary sign of swollen tonsil. For a total of 9 days, the patient had odynophagia. Even several days after the PCR swab test showing a negative result, an enlarged tonsil was still found but without odynophagia (Figure 1). Other symptoms developed, including sore throat, hot sensation on hands and feet, headache, and mucus production behind the nose. However, the patient had those symptoms only in one or two days. The patient did not have a fever, dry cough, and diarrhea.

Daily nutritional supplements during self-isolation could include 1500 mg vitamin C, 400 IU vitamin D, 2 mg vitamin B1 mononitrate, 2 mg vitamin B2, 15 mg nicotinamide, 2 mg vitamin B6 HCl, 5 mg calcium pantothenate, 20 mg zinc, five drops of propolis, and probiotic (*Lactobacillus casei* 6.5 x 10^9). The patient ate a balanced diet, rich in fruits and vegetables, and actively did an exercise for 10 min consisting of push-up, sit-up, plank, and elbow-to-knee crunches. On day 8 of confirmation, the PCR swab test showed a negative result. In addition, strong social support from social media encourages him to face the disease.

DISCUSSIONS

The present report shows tonsillitis was persistently found in a patient with COVID-19. Tonsillitis is an inflammation caused by viruses or bacteria, causing swelling and redness of the tonsils leading to odynophagia [6]. Common pathogens include *Streptococcus* bacteria, Epstein-Barr virus, hepatitis A, rubella, and HIV. While no study stated SARS-CoV-2 causing recurrent tonsillitis, this report describes how tonsillitis appeared along with novel coronavirus infection. Tonsillitis typically lasts 3 or 4 days, but the present patient had tonsillitis for more than one week. In addition, odynophagia disappeared along with the negative PCR test result. Our report supports the previous case report that also found tonsillitis as a manifestation of COVID-19 [3].

SARS-CoV-2 can replicate in the upper respiratory tract actively [7]. COVID-19 is detected through the nasal and oropharyngeal swabs. A tonsil is a set of lymphoid organs at the rear of the throat and plays an essential role in the immune system. High viral load in the upper respiratory tract may induce tonsillar inflammation either by specific infection in the tonsil or the effect of general inflammation to attack SARS-CoV-2 in the respiratory tract. However, the precise mechanism needs further investigation. Recently, Anderson and Paterek [8] believe that coronavirus is the pathogen causing tonsillitis. After several days of a negative result of the PCR swab test, there was a possibility of tonsillar hypertrophy in the patient and possibly because of prolonged tonsillitis during the infection of SARS-CoV-2 [6].

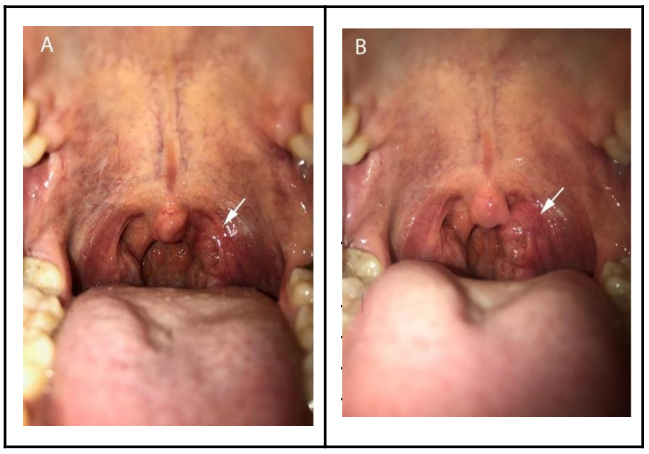

Figure 1. Tonsillar enlargement during and after infection of COVID-19. Tonsillitis showing redness during infection of COVID-19 (A); Tonsillar enlargement after PCR swab test showed negative result (B)

Meanwhile, the present report also shows immuno-nutrition supports the healing process. The patient ordinarily had mild symptoms. The peak period only led to three days, including swollen tonsils with odynophagia, hot sensation in hands and feet, nasal congestion, and mucus production behind the nose. The patient did not develop fever, dry cough, diarrhea, and anosmia commonly found in COVID-19 in the patient. Even delirium, recently confirmed as the symptom of COVID-19, was also not seen, probably because of strong social support. B-complex vitamins, vitamin C, vitamin D, and zinc are proposed to positively affect a patient with COVID-19 through immunomodulatory action [5]. Propolis and probiotics also possess an immunomodulatory property that supports our immune system to suppress viral infections like SARS-CoV-2 [9,10]. Hence, immuno-nutrition may contribute to a negative PCR swab test result on day 8 of confirmation.

This report is limited for not providing biochemical or radiology data. In addition, the symptoms of COVID-19 greatly vary between patients, hence difficult to conclude only from one case. Therefore, these findings need further investigation.

REFERENCES

1. Marietta, M., Ageno, W., Artoni, A., De Candia, E., Gresele, P., Marchetti, M., et al. (2020). COVID-19 and haemostasis: a position paper from Italian Society on Thrombosis and Haemostasis (SISET). Blood. Transfus. 18(3), 167-169. doi: 10.2450/2020.0083-20
2. Larsen, J.R., Martin, M.R., Martin J.D., Kuhn, P., and Hicks, J.B. (2020). Modeling the onset of symptoms of COVID-19. Front. Public Health. 8, 473. doi: https://doi.org/10.3389/fpubh.2020.00473
3. Fatima, K., and Naqvi, S.G.Z. (2020). Tonsillitis as a Rare Manifestation of COVID-19. J. Coll. Physicians. Surg. Pak. 30(10), 178-179. doi: https://doi.org/10.29271/jcpsp.2020.supp2.s178
4. Gorji, A., and Ghadiri, M.K. (2021). The potential roles of micronutrient deficiency and immune system dysfunction in COVID-19 pandemic. Nutrition. 82, 111047. doi: https://dx.doi.org/10.1016%2Fj.nut.2020.111047
5. Gasmi, A., Tippairote, T., Mujawdiya, P.K., Peana, M., Menzel, A., Dadar, M., et al. 2020. Micronutrients as immunomodulatory tools for COVID-19 management. Clin. Immunol. 220, 108545. doi: https://doi.org/10.1016/j.clim.2020.108545
6. Stelter, K. (2014). Tonsillitis and sore throat in children. GMS Curr. Top. Otorhinolaryngology. Head Neck Surg. 13, 1-24. doi: https://dx.doi.org/10.3205%2Fcto000110
7. Cao, W., Li, T. (2020). COVID-19: towards understanding of pathogenesis. Cell Res. 30(5), 367-369. doi: https://doi.org/10.1038/s41422-020-0327-4
8. Anderson, J., and Paterek, E. (2020). Tonsillitis. StatPearls Available at: https://www.ncbi.nlm.nih.gov/books/NBK544342/
9. Bottari, B., Castellone, V., and Neviani, E. (2020). Probiotics and covid-19. Int. J. Food Sci. Nutr. 2020, 1-7. doi: https://doi.org/10.1080/09637486.2020.1807475
10. Kalsum, N., Sulaeman, A., Setiawan, B., and Wibawan, I. W. T. (2017). Preliminary studies of the immunomodulator effect of the propolis *Trigona* spp. extract in a mouse model. J. Agric. Vet. Sci. 10, 75-80. doi: 10.9790/2380-1002027580