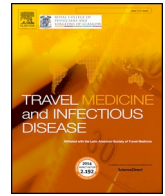




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Anosmia in a healthcare worker with COVID-19 in Madrid, Spain



Dear Editor

During the course of the Coronavirus Disease 2019 (COVID-19) pandemic, and its international spreading [1], multiple countries have also raised the concerns of this emerging condition as an occupational disease. As cases increased and required healthcare, healthcare workers (HCWs) have been recognized as a high-risk group to acquire the infection due to the Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [2], that may lead to a broad and changing spectrum of clinical disease, recently including olfactory and taste disorders. Despite this, there are few reports in healthcare workers [3,4], also about the occurrence of anosmia and dysgeusia [5].

The patient, a 40-year-old Venezuelan woman, works as a radiologist, attending patients in different areas of one service of nuclear medicine in a 900-bed hospital of Madrid, Spain. Between March 1 and March 14, 2020, she provided care in the hospital, at the X-ray room, to multiple symptomatic patients, who tested positive by rRT-PCR to the SARS-CoV-2 and who had suggestive COVID-19 imaging alterations (Fig. 1). Those days, healthcare workers were not yet using personal protective equipment (PPE), a measure implemented in her hospital a week later.

On March 14, 2020, the physician presented with myalgias, headache, chills, abdominal pain, and diarrhea, persisting for five days, but with no fever, she took her temperature three times per day (Fig. 1). She self-medicated with paracetamol. On March 16, she additionally presented with cough and anosmia. That day, she reported her clinical condition to the hospital but remained working until March 20, when a nasopharyngeal swab was collected, and she was on leave, at home (Fig. 1). From March 16 to March 18, her initial symptoms improved and resolved. However, the dry cough persisted and lasted 21 days, improving gradually, although intermittently, and her anosmia gradually improved and resolved after 14 days (Fig. 1).

On March 24, her rRT-PCR test confirmed the viral RNA of SARS-CoV-2. She remained at home till March 31, when her rRT-PCR was repeated and reported negative on April 1, and she returned to work at the hospital (Fig. 1).

She lives with her husband, non-HCW, a 38-year-old man, and her son, 11 months old. The husband presented slight myalgia and asthenia during three days. Her son did not have symptoms. Both always had a normal temperature, and remained asymptomatic at home. Neither were tested for SARS-CoV-2. For April 13, 2020 she continues well, as also her husband and son.

For March 1, 2020, only 85 cases of COVID-19 were reported in

Spain, but as of March 14, when her symptoms began, the country reported more than 6391 cumulated cases. All the HCW then needed to use the contact and respiratory precautions when attending patients with respiratory symptoms or/and flu-like illnesses in all areas with presumed ongoing community transmission of COVID-19 in most countries [4]. In a case series of 138 patients treated in a Wuhan hospital, 40 patients (29% of cases) were HCWs [3]. Among the affected HCWs, 31 (77.5%) worked on general wards, 7 (17.5%) in the emergency department, and 2 (5%) in the intensive care unit (ICU), then in any area HCWs would be exposed and infected.

Our case also presented with, a still considered novel, the clinical manifestation of COVID-19, the anosmia persisting for more than two weeks, and more prominent than other common clinical findings reported in this infection (e.g., fever, cough) [5]. Olfactory and taste disorders are well known to be related to a wide range of viral infections, although not a high proportion of patients. Multiple viruses can use the olfactory nerve as a shortcut into the central nervous systems, including the influenza virus, and cause even long-term olfactory disorders in some cases [6].

Hypogeusia, dysgeusia, hyposmia, and dysosmia associated with COVID-19 require more detailed studies in order to understand their pathophysiology, but especially their clinical course and implications. As the pandemic increases, early detection and suspicion of cases, based on broader clinical findings, would be useful, to aid diagnosis, in addition to the confirmation by the rRT-PCR. Anosmia is not frequent in the context of common cold and flu, then, an increase in this finding, in the COVID-19 context, make this case relevant.

Credit

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Declaration of competing interest

We declare that we have no competing interests. MFOC is the physician case reported in this article.

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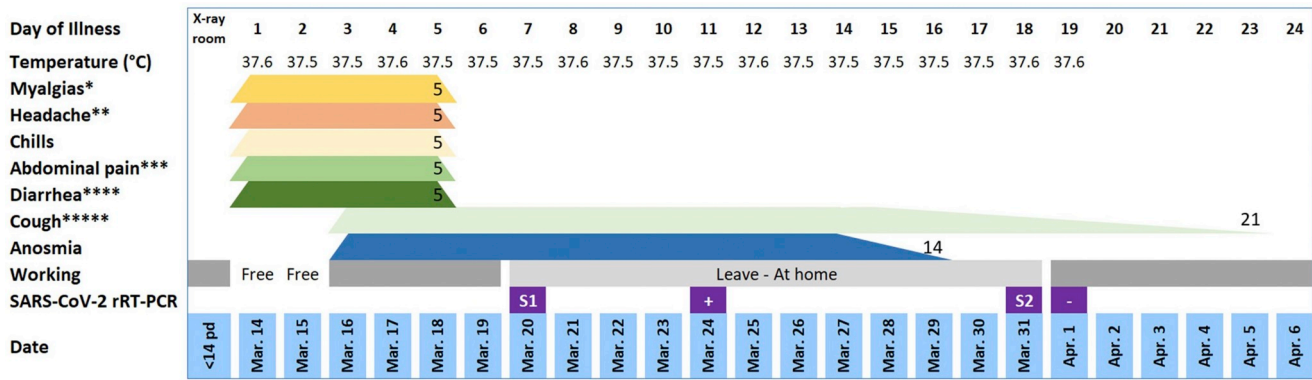


Fig. 1. Clinical evolution of the patient.

Temperature, mean value per day, she measured it three times per day.

*Generalized, with moderate to severe intensity, predominantly at the shoulder girdle.

**Holocranial, oppressive, with moderate intensity.

***Predominantly at mesogastrium and hypogastrium, of slight intensity.

****Watery stools, with no blood or mucus, reaching the first days, from four to five per day episodes.

*****Mostly dry, with a white appearance.

S1, Sample 1°; S2, Sample 2°. +, positive. -, negative.

< 14 pd, 14 previous days. The number at the end of each horizontal color bar represents the total number of days with the clinical finding. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

References

[1] Rodriguez-Morales AJ, MacGregor K, Kanagarajah S, Patel D, Schlagenhauf P. Going global - travel and the 2019 novel coronavirus. *Trav Med Infect Dis* 2020;33:101578.

[2] Sah R, Rodriguez-Morales AJ, Jha R, Chu DKW, Gu H, Peiris M, et al. Complete genome sequence of a 2019 novel coronavirus (SARS-CoV-2) strain isolated in Nepal. *Microbiol Resour Announc* 2020;9.

[3] Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical characteristics of 138 hospitalized patients with 2019 novel coronavirus-infected pneumonia in wuhan, China. *J Am Med Assoc* 2020. <https://doi.org/10.1001/jama.2020.1585>.

[4] Klement E, Godefroy N, Burrell S, Kornblum D, Monsel G, Bleibtreu A, et al. The first locally acquired novel case of 2019-nCoV infection in a healthcare worker in the Paris area. *Clin Infect Dis* 2020. <https://doi.org/10.1093/cid/ciaa171>.

[5] Giacomelli A, Pezzati L, Conti F, Bernacchia D, Siano M, Oreni L, et al. Self-reported olfactory and taste disorders in SARS-CoV-2 patients: a cross-sectional study. *Clin Infect Dis* 2020. <https://doi.org/10.1093/cid/ciaa330>.

[6] van Riel D, Verdijk R, Kuiken T. The olfactory nerve: a shortcut for influenza and other viral diseases into the central nervous system. *J Pathol* 2015;235:277-87.

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