

Spontaneous recovery of anosmia after 2.5 years in a young COVID-19 patient

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To the Editor: It has been 3 years since the world was confronted with a new challenge: coronavirus disease 2019 (COVID-19) [1]. COVID-19 typically manifests with respiratory symptoms, such as dry cough and dyspnea; however, it is not unusual for other organ signs and symptoms to appear [2]. A 2020 meta-analysis found that 53% of COVID-19 patients suffer from taste and smell impairments [3]. Anosmia, the loss of the sense of smell, is one of them and is regarded both as a symptom and as a complication of COVID-19, which may remain even after the patient is no longer infected [3]. Sixty to seventy percent of patients recover from this disorder within 4 weeks after having COVID-19, either entirely or partially [2]. Seventy-eight percent of patients recover their sense of smell entirely after 2 months, while 95% do so after 6 months [2,3]. Nonetheless, some people may endure anosmia for more than a year. These patients undergo numerous diagnostic and therapeutic procedures but do not heal completely [4]. Several therapy approaches might be pursued when anosmia persists for longer than 2 weeks [4]. Current options for treatment include intranasal corticosteroids, sodium citrate, and olfactory exercises [2]. Some patients do not respond to these treatments and have permanent olfactory loss. These patients may be candidates for other experimental therapies, such as stem cell therapy [2].

On 10 April 2020, a 23-year-old woman presented to the pulmonology clinic of Imam Khomeini Hospital in Sari, Mazandaran Province, Iran, with a complaint of a dry cough, fever, and loss of smell. On physical examination, her vital signs and organ examinations were normal. She tested positive for COVID-19 with a PCR test. The patient was ultimately diagnosed with mild COVID-19. On the subsequent follow-up, her respiratory

symptoms improved, but her anosmia did not. On 1 November 2022, she returned and reported that she could once again detect odors. She stated that approximately a month ago, she occasionally detected odors for a short period. Over time, the duration and intensity of the odor from these episodes began to increase. Now, she has regained her original sense of smell.

Several hypotheses have been proposed as potential anosmic mechanisms. A study by Torabi et al. [5]. Based on the fact that TNF- and IL-1 are high in COVID-19 patients, they suggested that inflammation of the olfactory epithelium could be a cause of short-term anosmia. This can explain why intranasal corticosteroids have the desired effects on COVID-19 anosmia. Cazzolla et al. [6] evaluated the IL-6 levels in venous blood samples of anosmic COVID-19 patients and concluded that recovery of the sense of smell correlates with a decrease in IL-6 blood levels. Other pathways associated with persistent anosmia in COVID-19 patients include olfactory cleft syndrome, olfactory epithelium or bulbar injury, microglial cell destruction, and apoptosis of olfactory neurons and stem cells [2]. Moreover, prolonged SARS-CoV-2 infection can generate chronic inflammation in the olfactory epithelium, inhibiting neuronal regeneration in the olfactory epithelium [4]. It should be noted that studies suggest that anosmia lasting more than a year may become permanent [7].

In conclusion, to the best of our knowledge, our case is one of the rare numbers who got cured of anosmia after more than a year. Although our patient did not receive any therapy to recover her sense of smell, her spontaneous recovery suggests that anosmia may recover even after a year. Although our patient had a mild form of COVID-19, we guess that the destruction of the olfactory bulb in our case was extensive. Since we know that the regeneration of neurons will be a time-

consuming process when significantly damaged, we hypothesized that this is why our case regained the sense of smell after such a long time. By reporting these rare cases and extensive research on them, discovering a treatment for this troubling complication would not be far from the mind.

Acknowledgments

We would like to thank the nurses and medical staff at Imam Khomeini Hospital in Sari for their outstanding efforts in managing this patient.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Availability of data and materials

The data are available with the corresponding author and can be reached on request.

Consent for publication

The authors declare that appropriate written informed consent was obtained for the publication of this manuscript.

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