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Conditional Dysosmia: a Very Unpleasant Symptom Causing Severe Anorexia and Breathing Problems in Covid-19: a Case Report

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ABSTRACT

Introduction

The severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a new coronavirus that is highly contagious and responsible for the ongoing pandemic disease; coronavirus disease (COVID-19). The disease was first identified in December 2019, and the World Health Organization declared the pandemic on the 11th of March 2020. Although individuals infected with SARS-CoV-2 may be asymptomatic, the disease can present as an upper respiratory tract illness. In the majority of the cases, it is of a mild type, however, some patients experience severe viral pneumonia that leads to respiratory failure, and, in some cases to death.

A COVID-19 diagnosis is confirmed by viral RNA detection in nasopharyngeal swab specimens; nonetheless, in some countries, COVID-19 tests are not available for screening and are only used to diagnose severe cases. Since 31 December 2019 and as of 17 October 2020 and in accordance with the applied case definitions and testing strategies in the affected countries 39 400 032 cases of COVID-19 have been reported, including 1 105 353 deaths^[1].

The main way to control the spread of COVID-19 is to prevent human-to-human transmission, which can be achieved through a combination of public health measures, including the rapid

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identification and isolation of infected people [1]. Diagnostic suspicion is based on nonspecific symptoms, such as fever, odynophagia, headache, and dry cough which are present in almost all acute respiratory virus cases [2].

Anosmia, which may be associated with the loss of taste, has been initially observed in European cases and seems to be a more specific symptom of COVID-19. Thus, during the pandemic, individuals with these symptoms should be tested for COVID-19; when tests are not available, isolation of the patient is indicated [3].

It should also be noted that olfactory dysfunction significantly influences the physical well-being, quality of life, safety, and nutritional status of those affected. And it becomes a greater problem when it becomes permanent. Yet, very little is known about olfactory dysfunction in COVID-19. Through our case report and review of the subject of the olfactory dysfunction, we would like to contribute to the existing knowledge and clinical evolution and to reinforce the importance of this manifestation from the patient prospectively, and in the diagnosis and control of the disease from Otolaryngological point of view. We, self-reported an Anosmia turned to Dysosmia (in Otolaryngeal senior consultant) and in one of his patient with anosmia which was followed by Dysosmia as well. This occurred in August 2020 and September 2020 in Duhok, Iraq.

CASE 1 presentation

I am 64-year old Male, Senior Consultant Otolaryngology, I am fit and well with no previous illness. I contracted the covid-19 after contact with one of my patient in the consultation clinic on the 18th of August 2020, who turned to be COVID positive later on. My symptoms were sore throat, cough, which quickly progressed to complete anosmia and ageusia with a high fever. My diagnosis with COVID-19 has been confirmed by PCR for RNA coronavirus on 23rd of August 2020. In the same day evening, I got dyspnea with peripheral cyanoses, so I was admitted to the hospital for oxygen therapy. Dexamethasone 6mg intravenously for 4 days which has been followed by methylprednisolone

180 mg intravenously daily for 9 days, and Enoxaparin 4000 UI (40mg) subcutaneously twice daily for thirteen days which has been followed by oral anticoagulant rivaroxaban 10mg daily for three months. On the second day of my admission (24th of August 2020) at early morning suddenly the smell and taste test has returned. Two hours later, while I taking breakfast, as soon as I put the food in my mouth a very sever bad odour coming from my nose causing severe nausea and vomiting.

Interestingly there was no odour in my nose in-between-meal or drink consumption. However, this bad odour appears whenever, I put any water, drink or food in my mouth. This very unpleasant condition continued for the next 3 days, which made me very depressed, to the extent I thought of suicide for the first-ever time in my life. On the third day of my admission (26th August 2020), I started the anti Viral medication tablet as part of management protocol in hospital (Lopinavir200mg/Ritonavir 50mg) orally two tablets, twice a day, after I have taken the third dose of this medication and while I am trying to take some food in the morning, I felt that there is no more bad odour came from the nose and has not returned since then. So it is as quick it came as quickly it went. I continued the full week anti Viral medication course.

CASE 2 presentation

34-year-old male visit me in consultation clinic on the 22nd of Oct 2020. He looks healthy, with history of flu-like illness on 19th of Sep 2020 with fever and chills, frontal headache, loss of appetite, and general malaize. He also reported anosmia and ageusia at that time, on 26th of Sep all his symptoms subsided, apart from the anosmia which continued until 10th of Oct 2020 before it stelled. On the 17 of October 2020, he started all of a sudden to smell bleach odour in the nose. This odour disturbed him significantly and hence his visit to me seeking advice and treatment. On examination generally, he looks healthy, but down in himself due to his current annoying symptom. There is no history of any significant medical or surgical problem. ENT examination revealed clear ear, throat, and

nose, his smell and taste are normal apart from the attacks of the smelling of bleach odour, which is not physically present. His attacks take place once he changes his place from room to room or when he started to drive his car. His investigation including CBC, CRP and ESR were all normal, PCR for RNA coronavirus from throat and nose swabs were negative, but the blood test revealed a very high titer of SARS-Cov-2 IgG antibodies positive test with negative IgM antibodies suggesting prior infection with SARS-Cov-2. I describe him nasal steroids spray, amoxiclav 1gm oral tablet Twice daily, oral, Vitamin B complex tablet and Imipramine 10mg oral tablet daily. I reassured him that this will most likely temporarily and gave him a follow-up appointment to see me in a week time, should his condition continued. It is more than 3 weeks now and he did not attend. I presume his condition has resolved spontaneously as I predicted.

Discussion

Dysosmia is a disorder described as any qualitative alteration or distortion of the perception of smell [4]. Qualitative alterations differ from quantitative alterations, which include anosmia and hyposmia [5]. Dysosmia can be classified as either parosmia (also called troposmia) or phantosmia. Parosmia is a distortion in the perception of an odorant. Odorants smell different from what one remembers. Phantosmia is the perception of an odour when no odorant is present, as in our cases with little difference as in our cases is not continues but conditioned; in my case was related to the food and drink and in my patient case it was related to change of places. The exact cause for the occurrence of dysosmia still unknown. It is considered as a neurological disorder and some clinical associations with the disorder have been speculated [6]. Most cases are described as idiopathic and the main secondary cause related to parosmia are URTIs, head trauma, and nasal and paranasal sinus diseases [7]. Dysosmia tends to go away on its own but there are some therapeutic options (oral/nasal steroids Vitamine B complex tablet

and antibiotic, Nasal douching and Anti-depressant) for patients that want immediate relief [4].

Herein, we describe two cases of confirmed COVID-19 infection, that presented with anosmia followed by dysosmia but did not experience any nasopharyngeal mucosa abnormalities during the course of the disease. So this is most likely related to Olfactory nerve dysfunction secondary to the coronavirus infection. Olfactory dysfunction has been reported as a rare manifestation of many viruses in general [8], including severe acute respiratory syndrome during 2003, SARS epidemic [9]. However, more recently, anosmia has been identified in many cases during the current COVID-19 pandemic [3]. In contrary to what we reported here, females have been significantly more affected by olfactory and gustatory dysfunctions than males during the COVID-19 epidemic [3].

It is important to note that in some patients, this symptom may appear before the general or respiratory symptoms appear [3] and hence it was included as one of the symptoms to trigger testing for CORONA or quarantine.

As noted in many studies, anosmia in COVID-19 cases usually has a sudden onset and is a temporary symptom that presents without other nasal symptoms such as obstruction or rhinorrhea [3,10]. The olfactory system has a particular ability to regenerate throughout life, owing to stem cells that line the nasal cavity epithelium. However, olfactory receptors may lose their ability to regenerate due to age and pathological processes that lead to olfactory sensorineural dysfunction, resulting in partial (hyposmia), complete loss of the sense of smell (anosmia) or an abnormal smell (dysosmia) or smell something which is not physically present (parosmia and phantosmia). In my and my patient cases, this could be described as conditioned Phantosmia (which initiated by taking food or drink in my case and to the change of place in my patient). It is something like what happens after a nerve injury such as in the Frey's Syndrome in which there is sweating while eating (gustatory sweating) and facial flushing. It

is caused by injury to the auriculotemporal nerve [11].

We believe that, as in other upper respiratory tract viral infections, SARS-CoV-2 causes a sensorineural dysfunction in the sense of smell; however, its pathophysiological mechanism is still unclear. Angiotensin-converting enzyme 2 was recently identified as the receptor for SARS-CoV-2. This enzyme is present in many human organs, including the peripheral nervous system cells which may be affected by SARS-CoV-2 through direct or indirect mechanisms [12]. This need to be studied as a plausible mechanism for this disorder.

Conclusion

We self-reported the symptoms of conditioned dysosmia in COVID from the Otolaryngeal point of view and one of his patient, which is very disabling. We think the use of antiviral medication in course of COVID-19 may help in the improvement of anosmia and dysosmia.

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