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# Otorhinolaryngology practices during the COVID-19 pandemic

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**ABSTRACT**

The COVID-19 epidemic, caused by SARS-CoV-2, broke out in December 2019 in the province of Wuhan, China. On March 12, 2020, the World Health Organization declared the COVID-19 outbreak as a pandemic. Although typical symptoms of the disease include fever, dry cough, and shortness of breath, complaints such as anosmia and dysgeusia also occur. The swab polymerase chain reaction tests, which were taken from the nasopharynx, became negative among asymptomatic individuals from the third day onward, whereas virus positivity was still detected among symptomatic individuals from the 12th to 20th days. Risk factors such as chronic diseases increase the rate of acute respiratory distress syndrome during COVID-19. It has been reported that the virus is transmitted more commonly through the contact of respiratory secretions. Thus, it has been reported that there is an increased risk of virus transmission particularly to physicians who are frequently exposed to aerodigestive secretions, such as otorhinolaryngologists, gastroenterologists, pneumologists, dentists, speech therapists, ophthalmologists, and infectious diseases physicians. Promising results have been reported from vaccine development studies currently in process. Although in some countries, vaccinations have been almost completed, there are a few countries where it has not started yet. Therefore, it is believed that it will take months or years for vaccines to be produced, distributed, and reach all people worldwide. During this period, it is our aim to protect our patients, hospital teams, and ourselves by examining and assessing the experiences of our international colleagues.

**Keywords:** COVID-19, ENT, otorhinolaryngological manifestations, otorhinolaryngology practices, SARS-Cov-2

## Introduction

The COVID-19 epidemic, caused by SARS-CoV-2, started in December 2019 in the province of Wuhan, China. On March 12, 2020, the World Health Organization declared the COVID-19 outbreak as a pandemic, which has rapidly spread worldwide, although it started in Wuhan, China. The European continent, which has the highest number of cases, has now become the epicenter of the pandemic. As of October 23, 2021, more than 243 million cases and 49,50,000 casualties have been reported worldwide. The top 3 countries with the highest number of cases are the United States, India, and Brazil.

Because COVID-19 is a disease that has not been encountered before, numerous medications and various protocols have been tried for its treatment; however, 100% success has not been achieved thus far. Similarly, vaccine development studies are being implemented by many countries, and promising results have been reported. Although in some countries, vaccination has covered almost the entire population; in a few countries, it has not started yet. Therefore, it is believed that it will take months or years for vaccines to be produced, distributed, and reach all people. In the meantime, we should protect our patients, hospital teams, and ourselves by examining and assessing the experiences of our international colleagues. The information in this review is a recommendation, which is based on the personal experience of our colleagues in various organizations and should not be considered as definitive scientific evidence.

Albeit typical symptoms of the disease include fever, dry cough, and shortness of breath; complaints such as anosmia and dysgeusia also occur. Recent publications showed that olfactory disorders (ODs) are common in this disease. Inan et al. (1) remarked that recovery of ODs is faster in patients with hyposmia than in those with anosmia. Hence, the American Academy of Otolaryngology–Head and Neck Surgery (AAO-HNSF) postulated that these complaints could be helpful in the screening

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of COVID-19 infection (2). The swab polymerase chain reaction (PCR) tests, which were taken from the nasopharynx, became negative among asymptomatic individuals from the third day onward, whereas virus positivity was still detected among symptomatic individuals between the 12th and 20th days (3, 4). Risk factors such as chronic diseases (chronic hepatitis, renal diseases, diabetes mellitus, chronic obstructive pulmonary disease, autoimmune diseases, etc.), pregnancy, and being >55 years of age leads to the occurrence of acute respiratory distress syndrome owing to COVID-19, substantially (5).

It has been reported that the virus is transmitted more commonly via respiratory secretions. Therefore, there is an increased risk of virus transmission to physicians who are frequently exposed to aerodigestive secretions, such as otorhinolaryngologists, gastroenterologists, pneumologists, dentists, speech therapists, ophthalmologists, and infectious diseases physicians (6-8). Nonurgent procedures such as nasolaryngoscopy, transnasal endoscopic surgery, dental interventions, and endotracheal intubation that leads to the spread of aerodigestive secretions should be avoided as long as possible (9, 10).

Literature review has revealed that endonasal interventions, surgeries, and examinations were remarkably risky. For instance, transsphenoidal surgery performed on 2 different patients with pituitary adenoma in Wuhan in January 2020 resulted in high fever of the entire operating room team 3 to 4 days later; plus, results of their COVID-19 tests were positive, and the patients' need for intensive care increased in the postoperative period (11).

On the basis of the epidemic statistics in Wuhan, the infection rate was determined to be 3.8% among healthcare workers, the severe disease rate was 14.8%, and the mortality rate was 0.6% (12, 13). Similarly, 20% of healthcare workers in Italy were reported to be infected (14). It was suggested in March 2020 that elective surgeries should be postponed to prevent healthcare staff from being infected with COVID-19 and to prevent the depletion of personal protective equipment (PPE), which would be used in fighting against the pandemic (15). To prevent oncology patients from being adversely affected by this situation, it was recommended that treatment planning and follow-up should be performed via video or teleconference method (16). However, emergency cases such as severe traumas, complicated abscesses, severe airway obstructions, and caustic substance ingestion were to be treated taking all the preventive measures (17, 18). If imperative surgeries, each operating room must have its own negative pressure ventilation system to prevent spread of the virus to other operating rooms. Moreover, all operating room personnel must be informed about the usage of PPE. It is recommended that all personnel in charge of the surgery should have the SARS-CoV-2 virus detection test (reverse transcription-polymerase chain reaction of nasopharyngeal swabs) every 2 weeks (19-21).

**Main Points:**

- The World Health Organization declared the COVID-19 outbreak a pandemic.
- There is an increased risk of virus transmission particularly to physicians who are closely exposed to aerodigestive secretions, such as otorhinolaryngologists, gastroenterologists, pneumologists, dentists, speech therapists, ophthalmologists, and infectious diseases physicians.
- Vaccination has promising results.
- During this period, we must protect our patients, hospital teams, and ourselves.

## Practices of otorhinolaryngology

Head and neck examinations are quite risky during a pandemic; thus, it is important to follow the guidelines below. Each patient should be examined meticulously by an experienced specialist physician, using PPE (FFP3 or N95 mask, face shield, gown), in a negative pressure room. To prevent the spread of droplets during the endoscopic nasal examination, using small cotton pledgets impregnated with an anesthetic agent, is recommended instead of local anesthetic spray. If larynx examination is imperative, it is necessary to anesthetize it well enough with local anesthesia to prevent gag reflex in the patient. During ear examination, it is recommended that the patient should be examined with the mask on. During intubation and extubation in the operating room, it is recommended that the personnel who do not have any duties should be asked to remain outside to reduce the risk of infection. It is also recommended to avoid jet ventilation with high frequency and low tidal volume as it causes too much aerosol emission into the environment (22, 23).

The fact that the middle ear and mastoid air spaces are connected to the Eustachian tube and the nasopharynx suggests that these regions are also contaminated. Hence, contaminated droplets can be spread to the environment via the drill device during mastoidectomy and infect those in the room. Therefore, these ear surgeries should be postponed till the COVID-19 tests of the patients are negative twice (24, 25).

As the risk of contamination is higher, rhinoplasty, septoplasty, sinus surgery, and benign laryngeal pathologies should also be postponed; however, if there is a need for surgery, it is recommended that at least 2 PCR tests are negative prior to the procedure. Similarly, facial fracture procedures should be performed after the PCR tests are negative at least twice if it is not an emergency (6).

Because tracheostomy is a remarkably risky procedure in terms of contamination, it should be performed after waiting at least 14 days and waiting for the active phase of the disease to fade as well as taking all protective measures because early tracheostomy has no benefit in these patients. Preferably, it is suggested to perform tracheostomy through percutaneous dilatational tracheotomy technique (26, 27).

Radiotherapy, which has a similar efficacy, should be performed in patients with early-stage T1 and T2 laryngeal cancer, rather than $CO_2$ laser resection. In advanced stage cancers that cause airway obstruction, operations should be performed in a negative pressure operating room using PPE after obtaining negative PCR tests at least twice (28).

## Conclusion

The upper respiratory tract is the region where the virus load is the highest, and any intervention or procedure performed here

leads to spread of the virus into the environment and increases the infection risk of personnel who are in the room. Otorhinolaryngologists, dentists, and pulmonologists who intervene in the aerodigestive region are particularly at a greater risk. Topsakal et al. (29) stated that ENT surgeons are in the highest risk group among health professionals in terms of contaminating themselves when doing their daily work. To preserve the amount of PPE and to make room for patients with COVID-19 in the hospital and to prevent infection, nonurgent, elective surgeries should be postponed as much as possible, and if necessary, should be performed ensuring maximum protective measures as mentioned above. Although promising results are obtained in vaccine development studies, it will take months or years to vaccinate the whole community and gain immunity. In the meantime, we should continue to work effectively and safely considering our priorities to ensure that the healthcare system does not collapse.

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