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Otolaryngology in the COVID-19

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Abstract

An overview of the present knowledge about COVID-19 pandemic and its impact on otolaryngology clinical practice. Recent findings about *SARS-CoV-2* virus and therefore the COVID-19 infection it causes are reviewed. The role of anosmia as a COVID-19 related symptom is presented. Further, considerations about steroid administration in ENT-related conditions are discussed. Due to the close work with mucosa surfaces of the upper aerodigestive tract, otolaryngologists and surrounding staff are considered high risk for coronavirus transmission. Hence, staff protection measures for ENT examinations, surgeries and other procedures during COVID-19 pandemic are recommended. Knowledge and evidence about the impact of COVID-19 infection on otolaryngology clinical practice are accumulating rapidly. Additionally to patient's management, safety of health care professionals should be a main goal as of now.

Keywords: *SARS-CoV-2*, COVID-19, Pandemic, Otolaryngology, Clinical practice guidelines.

The *SARS-CoV-2* virus (severe acute respiratory syndrome coronavirus-2) is rapidly expanding round the globe and therefore the World Health Organization (WHO) declared COVID-19 (coronavirus disease) outbreak a worldwide pandemic on March 11, 2020. *SARS-CoV-2* virus is especially transmitted between people through respiratory droplets and get in touch with routes. Infected respiratory droplets enter the physical body through the nose and mouth. Conjunctiva is additionally considered to be a possible entrance point, although clear data proving this aren't sufficient. Contact transmission by hands occurs through surfaces on which the virus is deposited [1]. Aerosol transmission of the virus is plausible as well; however, doubtful evidence of this is often still lacking. For healthcare workers, attention must be paid to all or any possible modes of transmission by taking appropriate protective and hygiene measures.

Otolaryngologists and surrounding staff are a high-risk group for COVID-19 infection, since they're particularly exposed to viral transmission directly through mucus and aerosolized particles during clinical examination, surgeries, or other interventions within the head and neck area. Evidence from China, Italy, and Iran and recently from the uk suggests that otolaryngologists are among the very best risk group of contracting the *SARS-CoV-2* virus, especially when their examinations and procedures are performed without using appropriate personal protective equipment (PPE). Unfortunately, many of our ENT colleagues worldwide are victims of the pandemic [2].

This paper aims to offer a quick overview of the present knowledge about the impact of COVID-19 pandemic on otolaryngology using the simplest available evidence. Special focus is given on how this data has changed or should change our daily practice. As our knowledge about the virus is rapidly increased, it's quite likely that these recommendations are going to be reviewed within the future.

Anosmia and COVID-19

Over the last 3 months, there are increasing reports that anosmia and to a lesser extent dysgeusia are significantly linked to COVID-19 disease. In April 2020, WHO added loss of smell and taste to the official lists of COVID-19 symptoms. Especially, anosmia rates in *SARS-CoV-2* positive patients vary significantly among studies and are within the order of 30–70%, while in a number of the patients anosmia could also be the sole present symptom. For instance, new data arrive from a recently conducted European multicenter study during which patients with laboratory-confirmed COVID-19 infection completed olfactory and gustatory questionnaires [3]. The results showed that 85.6% and 88.0% of patients reported olfactory and gustatory dysfunctions, respectively. Olfactory dysfunction (OD) appeared before the opposite symptoms in 11.8% of cases, whereas the first olfactory recovery rate was 44.0%. Additionally, results from the primary 237 entries of the COVID-19 Anosmia Reporting Tool for Clinicians, developed by the American Academy of Otolaryngology-Head and Neck Surgery, revealed that anosmia was noted in 73% of patients

before COVID-19 diagnosis and was the initial symptom in 26.6% [4]. There's a really high heteterogeneity among studies, with proportions starting from 5 to 98%. Differences in clinical work-up, specific regional patient characteristics or viral strains could be possible explanations for these rate variations. The COVID-19-related anosmia is reported to vary from the well-known post-viral loss of smell, which follows rhinitis or other upper tract infections. Interestingly, most patients report a sudden and almost complete loss of smells i.e. anosmia, which is never amid other nasal symptoms, like nasal obstruction, secretions, or rhinorrhea [5].

Impact on otolaryngology practice

Anosmia (and dysgeusia) within the absence of other diseases of the upper tract (e.g. rhinitis, acute and chronic rhinosinusitis) should raise the suspicion of COVID-19 infection. This could lead medical and paramedical staff to require the required measures for private protection and warrant consideration for testing and self-isolation of those patients [6]. Regarding changes on the therapy of anosmia during the pandemic see below at the "Medical treatment with steroid" section.

Procedures in the Operating Room

There is broad international consensus that not urgent/ emergent and not time-sensitive (e.g. concerning malignancies) surgeries should be avoided during the pandemic. Particularly, endonasal endoscopic sinonasal surgery and laryngological surgery (especially jet ventilated) appear to be the riskiest procedures. Ideally, COVID-19 status should be determined preoperatively [7]. just in case of an elective but time-sensitive surgery, advice should tend to all or any COVID-19-negative patients for social distancing and hand hygiene between the testing time and therefore the time of surgery.

During the pandemic, all recommended staff protection measures described and implemented. Especially, full PPE should be used not only in COVID-19 positive or high suspicious patients, but in COVID-19 negative or asymptomatic patients also. In some reports, PAPR system (powered air purifying respirators) is suggested [8]. High-risk operations or operations in COVID-19 positive patients should be performed during a designated or with negative pressures, during which the littlest possible surgical team should be used both for reasons of safety and to preserve PPE [9].

When performing the surgery, the utilization of powered devises (eg., drills, microdebriders) or ultrasonic shears should be avoided, since they'll cause aerosolization of blood and other tissues. Even the utilization of electrocautery could also be a risk factor for transmitting the virus via surgical smoke, although the infectiousness of aerosolized blood with *SARS-CoV-2* isn't yet known [10]. Hence, it's advisable to stay the facility settings of electrocautery as low as possible.

Conclusion

The COVID-19 pandemic is a unprecedented challenge for the medical profession. Since the *SARS-CoV-2* virus has already expanded within the community in many countries of the planet, each patient during which COVID-19 status can't be confirmed should be managed as positive. Albeit in many countries the pandemic is slowing down and practice is been adapted to new normality, a replacement pandemic wave within the upcoming winter may be a possibility. Therefore, the way we practice medicine during this or a replacement COVID-19 pandemic has got to be supported scientific data and evidence. Otolaryngologists and surrounding staff are particularly in danger for COVID-19 infection. Like all health care professionals, their protection is important for avoiding collapse of the health care system. As knowledge about COVID-19 infection rapidly evolves, we'd like to stay ourselves up so far and follow the respective recommendations. The necessity for future revisions of those recommendations supported more data and randomized controlled trials is imperative.

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