Tidsskriftet Tidsskrift for Den norske legeforening

Otorhinolaryngologists and the SARS-CoV-2 virus

OPINIONS

DAVID HUI

E-mail: hui_david@outlook.com
David Hui, medical student at the University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

JOHAN EDVARD STEINEGER

Johan Edvard Steineger, otorhinolaryngologist and clinical doctoral research fellow in the Department of Otorhinolaryngology & Head and Neck Surgery at Oslo University Hospital, Rikshospitalet, and the Institute of Clinical Medicine, University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

HARRIET AKRE

Harriet Akre, MD Phd, otorhinolaryngologist, senior consultant in the Department of Otorhinolaryngology & Head and Neck Surgery at Oslo University Hospital, Rikshospitalet, and professor II at the Institute of Clinical Medicine, University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

TERJE OSNES

Terje Osnes, MD PhD, otorhinolaryngologist, head of department in the Department of Otorhinolaryngology & Head and Neck Surgery at Oslo University Hospital, Rikshospitalet, and professor II at the Institute of Clinical Medicine, University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

SINAN DHEYAULDEEN

Sinan Dheyauldeen, MD PhD, otorhinolaryngologist and associate professor in the Department of Otorhinolaryngology & Head and Neck Surgery at Oslo University Hospital, Rikshospitalet, and the Institute of Clinical Medicine,

University of Oslo.
The author has completed the ICMJE form and declares no conflicts of interest.

Most ear, nose and throat procedures cause aerosolisation of the SARS -CoV-2 virus. Otorhinolaryngologists need thorough knowledge of procedures that pose a risk, and of self-protection during the COVID-19 pandemic.

SARS-CoV-2 occurs in high concentration in the upper respiratory tract of infected patients. The virus may be transmitted between people through droplets (1). The virus is spread through the air in the form of droplets and aerosols through coughing, sneezing or ordinary speech. When these make contact with the mucosa of a recipient, that person may become infected. Aerosols can travel up to four metres (1, 2). The virus can quickly replicate in the mucosa of the upper respiratory tract (3), and high nosocomial infection rates have been reported (4).

COVID-19 has an incubation period of up to 14 days (5, 6), and the degree of severity varies from absence of symptoms to acute respiratory distress syndrome and death (7). A possible explanation for the variation in the degree of severity is that a higher viral load is associated with serious clinical outcomes (8, 9).

Otorhinolaryngologists are particularly exposed

Otorhinolaryngologists are particularly exposed to SARS-CoV-2 because the majority of ear, nose and throat examinations are potentially aerosol-generating (10, 11). This is primarily due to transnasal and transoral examinations, of which some trigger a gag or cough reflex. SARS-CoV-2 can also reach the middle ear via the Eustachian tube (12). Drilling into the mastoid area during ear surgery releases viral particles and also constitutes a risk of infection (13). In view of this, otorhinolaryngologists must exercise particular caution and place strong emphasis on self-protection. We have drawn up a set of recommendations for otorhinolaryngologists, which are available in Oslo University Hospital's electronic manual (14).

General recommendations

Given the current situation, a symptom-oriented ear, nose and throat examination is recommended for all patients. Local anaesthetic spray may lead to increased viral mobility and higher risk of infection, and should be replaced with packing soaked with local anaesthetic. If an aerosol-generating procedure must be undertaken (for example flexible laryngoscopy or rhinoscopy with rigid optic), an airborne infection regimen is recommended. Thorough disinfection of endoscopes must also be endeavoured.

> ***«Otorhinolaryngologists must exercise particular caution and place strong emphasis on self-protection»***

Personal protective equipment reduces nosocomial infection, but otorhinolaryngologists can infect themselves and others when putting on and removing protective equipment (15). It is therefore essential that otorhinolaryngologists have access to suitable protective equipment, and that safe changing procedures are established to minimise the risk of transmitting infection.

LITERATURE

1. Wang J, Du G. COVID-19 may transmit through aerosol. Ir J Med Sci 2020; 189: 1–2. [PubMed]

2. Guo ZD, Wang ZY, Zhang SF et al. Aerosol and surface distribution of severe acute respiratory syndrome coronavirus 2 in hospital wards, Wuhan, China, 2020. Emerg Infect Dis 2020; 26: 26. [PubMed][CrossRef]

3. Guo YR, Cao QD, Hong ZS et al. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak - an update on the status. Mil Med Res 2020; 7: 11. [PubMed][CrossRef]

4. Wang Y, Wang Y, Chen Y et al. Unique epidemiological and clinical features of the emerging 2019 novel coronavirus pneumonia (COVID-19) implicate special control measures. J Med Virol 2020; 92: 568–76. [PubMed][CrossRef]

5. Lauer SA, Grantz KH, Bi Q et al. The incubation period of coronavirus disease 2019 (COVID-19) From publicly reported confirmed cases: Estimation and application. Ann Intern Med 2020; 172: 577–82. [PubMed][CrossRef]

6. Guan WJ, Ni ZY, Hu Y et al. Clinical characteristics of coronavirus disease 2019 in China. N Engl J Med 2020; 382: 1708–20. [PubMed][CrossRef]

7. Hauge MT, Nilsen E, Nordseth T. Acute respiratory distress syndrome in a patient with COVID-19 and negative nasopharyngeal swabs. Tidsskr Nor Legeforen 2020; 140. doi: 10.4045/tidsskr.20.0297. [PubMed][CrossRef]

8. Liu Y, Yan LM, Wan L et al. Viral dynamics in mild and severe cases of COVID-19. Lancet Infect Dis 2020; 20: 656–7. [PubMed][CrossRef]

9. Müller MA, Raj VS, Muth D et al. Human coronavirus EMC does not require the SARS-coronavirus receptor and maintains broad replicative capability in mammalian cell lines. MBio 2012; 3: e00515–12. [PubMed][CrossRef]

10. Lüers JC, Klußmann JP, Guntinas-Lichius O. Die COVID-19-Pandemie und das HNO-Fachgebiet: Worauf kommt es aktuell an? Laryngorhinootologie 2020; 99: 287–91. [PubMed][CrossRef]

11. Vukkadala N, Qian ZJ, Holsinger FC et al. COVID-19 and the otolaryngologist–preliminary evidence-based review. Laryngoscope 2020; 130: lary.28672.

12. Heikkinen T, Thint M, Chonmaitree T. Prevalence of various respiratory viruses in the middle ear during acute otitis media. N Engl J Med 1999; 340: 260–4. [PubMed][CrossRef]

13. Hilal A, Walshe P, Gendy S et al. Mastoidectomy and trans-corneal viral transmission. Laryngoscope 2005; 115: 1873–6. [PubMed][CrossRef]

14. Oslo universitetssykehus. eHåndbok. https://ehandboken.ous-hf.no/document/138014/fields/23 Accessed 26.5.2020.

15. Wong J, Goh QY, Tan Z et al. Preparing for a COVID-19 pandemic: a review of operating room outbreak response measures in a large tertiary hospital in Singapore. Can J Anaesth 2020; 67: 732–45. [PubMed][CrossRef]

Publisert: 9 June 2020. Tidsskr Nor Legeforen. DOI: 10.4045/tidsskr.20.0423
Received 10.5.2020, first revision submitted 17.5.2020, accepted 26.5.2020.