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The COVID-19 pandemic is accelerating within the United States, and any information we can gain from our international colleagues who have already experienced this, or are currently going through it, should be utilized to protect our patients, our hospital teams and ourselves.

The compilation of information below is based mostly on personal communication with international colleagues reporting their individual experiences, and more data is needed before policies are set long-term. However, based on the information below, it would be prudent to exercise an abundance of caution before we can gather more data, so as not to repeat the same mistakes that have been made elsewhere.

Dr. Xiaoguang Tong, our colleague in neurosurgery, serving in one of the hospitals in Wuhan, has informed us that the first case with the most widespread infection in Wuhan was an endoscopic pituitary surgery. This has now also been documented via another source in China Newsweek.¹ All 14 people who came in and out of the OR during that case became infected. He saw this repeat with other endoscopic cases. He has also shared that a significant number of doctors who died in China were ENTs and Ophthalmologists, possibly due to the high viral shedding from the nasal cavity. This has now been confirmed in the media as well.² This logically makes sense to us based on data showing higher viral load in nasal swabs than lower in the respiratory tract, as well as the knowledge that if the viral particles become aerosolized, which appears possible during endoscopy (let alone endoscopic surgery, where the epithelial lining is actively being disrupted), they stay in the air for at least 3 hours, if not longer.^{3,4}

He has further counseled and warned that he believes endoscopic endonasal cases are among the highest risk cases for spread of infection. Based on their experience in Wuhan, N95 masks were not enough to control this spread. Not until PAPRs (Powered, Air Purifying Respirators) were used during these cases, did the spread become controlled. He also explained that testing twice appeared necessary, separated by 24 hours in between tests, to truly confirm negativity to COVID-19, based on the potential for false negative results, although it is unclear which test was being used and how that test compares to what we are currently using.

From our colleagues in Iran, Dr. Ebrahim Rampa, Professor of Otolaryngology at Tehran University Medical Sciences, Dr. Saeed Atighechi, Associate Professor of Otolaryngology at Yazd University School of Medicine, and Dr. Mohammed Hossein Baradanfar, Professor and Chairman of Otolaryngology Yazd University School of Medicine, we have additionally heard from Iran that at least 20 ENTs are currently hospitalized with COVID-19, with 20 more in isolation at home. They are testing only people who have been admitted to the hospital, so those twenty at home are not confirmed, but have classic symptoms. A previously healthy 60yo facial plastic surgeon died from COVID-19 three days ago. A young, otherwise healthy ENT chief resident had a short prodrome, rapidly decompensated and died also. They do not test the deceased, but all his colleagues and faculty think it was from COVID-19.

From our colleague Dr. Puya Deghani-Mobaraki in Italy, he also reports ENTs being affected adversely, but his information is about the possible loss of smell and taste that this virus brings. They are not only seeing it in their patients, but they have noticed it within their own ranks, in otherwise healthy asymptomatic doctors, at rates far above what could be considered normal. This observation has also been reported in the media regarding patients, as an under-reported aspect of this disease process.⁵

Based on this information, and until we know more, we are performing only urgent/emergent cases of endoscopic endonasal surgery at Stanford University at this time. We will be testing these patients pre-operatively for COVID-19 and proceed if negative. We have also requested full PAPRs for ourselves and all team members in the OR for any of these cases that do actually need to move forward, either for cases in which we cannot wait for test results or for cases that test positive but still need to proceed. PAPRs are in even shorter supply than N95 masks, but we feel strongly that they are necessary for our safety and the safety of our teams. Conservation of this precious resource is another reason to limit these operations to the bare minimum at this time. To not heed the cautionary advice of those who have already gone through this and lost their own colleagues, does not seem wise or prudent. In the clinic setting, we have similarly restricted visits to only urgent/emergent patients and have ceased the use of spray anesthetic/decongestants, opting instead for nasal pledgets as needed, but preferably avoiding endoscopy whenever possible. We are using N95 masks, face shields and gowns for all nasal endoscopies.

Our guidelines at Stanford are constantly in evolution based on new information and thanks to the responsiveness of our leadership.

Currently they are:

- Elective cases are cancelled for 1 month or longer
 - Urgent cases (that should be done within 30 days) - 48 hours pre-op COVID testing
- If COVID positive - PAPR for all OR staff may be necessary until further data is available
- Emergent cases - perform with appropriate PPE (PAPR for all OR staff may be necessary until further data is available)

We extend wishes of safety and health to all our otolaryngology and neurosurgery colleagues at this challenging time.

¹ China Newsweek. View.inews.qq.com/a/20200125A07TT200?uid=&devid=BDFE70CD-5BF1-4702-91B7-329F20A6E839&qimei=bdfe70cd-5bf1-4702-91b7-329f20a6e839

² https://www.bloomberg.com/news/articles/2020-03-17/europe-s-doctors-getting-sick-like-in-wuhan-chinese-doctors-say?fbclid=IwAR2ds9OWRxQuMHAuy5Gb7ltqUGMZNSojVNtFmq3zzcSLb_bO9aGYr7URxal

³ Zou L, Ruan F, Huang M, et al. SARS-CoV-2 Viral Load in Upper Respiratory Specimens of Infected Patients. *N Engl J Med.* 2020 Mar 19;382(12):1177-1179. doi: 10.1056/NEJMc2001737. Epub 2020 Feb 19.

⁴ van Doremalen N, Bushmaker T, Morris DH, et al. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. *N Engl J Med.* 2020 Mar 17. doi: 10.1056/NEJMc2004973. [Epub ahead of print]

⁵ <https://en.radiofarda.com/a/loss-of-sense-of-smell-among-iranians-coinciding-with-coronavirus-epidemic/30478044.html>