COVID-19 and Ear Surgery: (RK Jackler, Stanford)

To the best of our knowledge no one knows whether the respiratory mucosal lining the middle ear and mastoid air cells system is involved by COVID19 or not – but it seems likely that they are. As the rest of the airway is involved, and the nose and nasopharynx intensely so, it seems probable that the lining of the eustachian tube, middle ear, and mastoid air cell system are all contaminated.

Many articles verify the presence of respiratory virus in the middle during acute illnesses. (see list below) Two references specifically document coronavirus (not COVID-19 specific) in the middle ear during URI. These viruses have affinity for respiratory mucosa and may populate the otic structures either via direct mucosal spread or viremia.

Drilling through the mastoid creates droplets and aerosols in significant clouds which, if virus is present, could risk infecting everyone in the operating room environment. As contaminated mists harbor viable virus for several hours, especially in enclosed spaces, caution is warranted. For these reasons, I think we should consider mastoidectomy to be a procedure of heightened risk. It may be relevant that infections among OR staffs following transnasal endoscopic surgery which uses powered instruments (including drills) that create plumes of droplets has been reported.

Ideally, we should test for COVID-19 preoperatively for any ear surgery and, if negative, proceed with surgery using standard PPE (face shields and N95). Of course, we cannot entirely rule out early infections with undetectable viral load or even false negative testing. If positive, surgery should be delayed until the patient has cleared the disease. Hence the pre-procedure test as indicated in my view because it would affect management.

In an ear surgical procedure, only a single surgeon need be in the room and all observers should be excluded. This is important to reduce potential exposures, but also to limit use of PPE (eg N95 masks and face screens). For educators, suggest making a video recording the surgery to share with trainees as time permits.

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