

Commentary: Propensity of aerosol and droplet creation during oculoplastic procedures: A risk assessment with high-speed imaging amidst COVID-19 pandemic

Aerosol generating procedures (AGPs) can contribute to the occupational hazards faced by health care workers. The past experiences with outbreaks of severe acute respiratory syndrome (SARS) have shown that AGPs are associated with an increased risk of virus transmission to health care workers. However, such data are either not known or unclear regarding the spread of COVID-19 with ophthalmic procedures.^[1]

The risk of transmission via aerosols is influenced by several factors, including the particle size, their numbers in a defined area, the presence of viable virus within the droplets, and the viral load. The practice of ophthalmic plastic surgery is unique in this regard. Electrosurgical devices and mechanized drills are commonly used in orbital and lacrimal surgeries and are known to generate aerosols. Besides, other procedures such as lacrimal irrigation, proximity of the surgeon with the patient during diagnostic and therapeutic interventions, and possible induction of sneezing and coughing with lacrimal procedures can further compound the risk of virus transmission.^[2] Several factors can influence the aerosol-generating potential of mechanized drills, including their speed, simultaneous use of irrigation, and the extent of surgeon's exposure based on the drill location.

This study succinctly describes the propensity of certain commonly performed ophthalmic plastic procedures in generating aerosols.^[3] A well-defined *ex vivo* environment was created to facilitate the experiments. The unique interplay of fluid-gas dynamics was nicely captured using high-resolution cameras and stroboscopic apparatus. The mechanized drills were noted to generate aerosols (size range: 50–500 μ) with a spread distance of 1.8 m radius. The generation of smoke from the electrosurgical devices and the control of its dispersion control with suction was on expected lines. While the study had several limitations, including difficulties with extrapolating the results to an *in vivo* surgical setting, it is nevertheless, an excellent strategy to begin answering the proposed research query. Whether the quantification data on aerosol generation would also help surgeons make practical decisions still needs to be answered. How would additional data on aerosol

quantification help mitigate virus transmission (over and above the current extensive precautions being taken and the already donned PPE) is yet to be deciphered.

Although useful data exist on AGP's, their trajectories, and the spread distance, there is a lack of high-quality evidence regarding the risk of transmission of the SARS-COV2 virus with AGPs in ophthalmic plastics surgeries.

Mohammad Javed Ali

Govindram Seksaria Institute of Dacryology,
L.V. Prasad Eye Institute, Hyderabad, Telangana, India

Correspondence to: Dr. Mohammad Javed Ali,
L.V. Prasad Eye Institute, Road No 2, Banjara Hills, Hyderabad,
Telangana - 500034, India.
E-mail: drjaved007@gmail.com

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