



## STOP THE FOGGING: AN OFTEN-OVERLOOKED PROBLEM DURING SARS-COV-2 SURGICAL PROCEDURES

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Article Received on 21/09/2020

Article Revised on 11/10/2020

Article Accepted on 01/11/2020

We check with interest several videos and guidelines about personal protective equipment (PPE) published in recent months,<sup>[1,2]</sup> in relation to the SARS-CoV-2 pandemic, and we agree on the urgent need for medical teams to put into practice the recommendations of expert groups to reduce the possibility of infection in health personnel, with special emphasis on in the "tips" or "details" to improve the performance of PPE. These tips escape from evidence-based medicine and for that reason they are infrequent in the medical literature, however, in a situation as pressing as SARS-CoV-2 pandemic, it is worth knowing them.

In our daily practice, when performing surgical procedures in obstetric patients with SARS-CoV-2, we consider those tips, such as hydration and using the bathroom before putting on PPE. There is however, one additional key recommendation: stop googles from fogging up. To this end, make sure that the facial protection will not tarnish or that there is a way to handle that condensation of moisture on the screen of your glasses or face shield because of the safety of the surgical procedure can be put at risk.

In our center, the availability of NIOSH-certified powered air-purifying respirator (PAPR) is scarce, and we use googles and a full-face shield<sup>[3]</sup>. These googles frequently (not to say in all cases) causes vision problems when they fogging up, and this occur few minutes after starting the surgery (**Figure 1**). The empirical observations on behalf of the surgeons from our group are that applying a small amount of hand soap to the googles screen, delays fogging, not to mention that PAPRs and others commercial full facepiece respirators systems eliminate the problem.

Also, in addition to the PPE recommended for medical care<sup>[1]</sup> during the surgery a second sterile gown and second or third sterile gloves are required, to which in our center we add a hood over the head, to reduce skin exposure, but producing increased body temperature and facilitate the condensation of moisture in the face protectors.<sup>[3]</sup> We agree with some authors<sup>[1]</sup> on the need to adapt the protocol to the resources available in each

hospital, and we add the vital importance of training in the placement and removal of PPE before surgery.<sup>[4]</sup> without forgetting the possibility of moisture condensation on facial protectors and the risk to the patient and surgeons of decreased visibility, especially during complicated or prolonged procedures such as those required for the control of obstetric hemorrhage.



**Figure 1:** Vision through PPE during a C-section in a COVID-19 patient, after 10 minutes of surgery (A) and after 40 minutes (B) of surgery. Note the degree of blurring and the difficulty in identifying details of the surgical field of view.

#### ACKNOWLEDGMENTS

The authors extend special appreciation to the Clinical Research Center team of Fundación Valle del Lili (FVL), Cali, Colombia, for support during the development of the article.

**Funding:** There are no financial resources to declare in this submission.

**Conflict of interest:** The authors declare no conflict of interest.

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