

IMCAS: LETTER

Transparent film as an alternative to face mask for decreasing the risk of coronavirus disease transmission during head and neck surgery

Dear Editor

Owing to the coronavirus disease 2019 (COVID-19) pandemic, health care facilities are searching for effective measures to prevent nosocomial transmission. Recent studies have corroborated that COVID-19 transmission is primarily through respiratory droplets and contact routes.¹ Droplets are generally produced and released during speech without masks.² These particles become a threat of infection if inhaled by persons in close contact.³ During head and neck surgery, including Mohs micrographic surgery (MMS), medical professionals are at high

risk of transmission owing to the long operation time.⁴ Therefore, surgical teams should use personal protective equipment with an appropriate ventilation system. However, patients with skin cancers on the face cannot maintain their masks during surgery, which poses a significant risk of viral transmission through the mouth by speaking or coughing. We present a simple and beneficial pearl using a transparent film for reducing COVID-19 transmission during surgery.

MMS was performed in a patient with a basal cell carcinoma (BCC) on the nose. As the face mask obscured the surgical field, it was

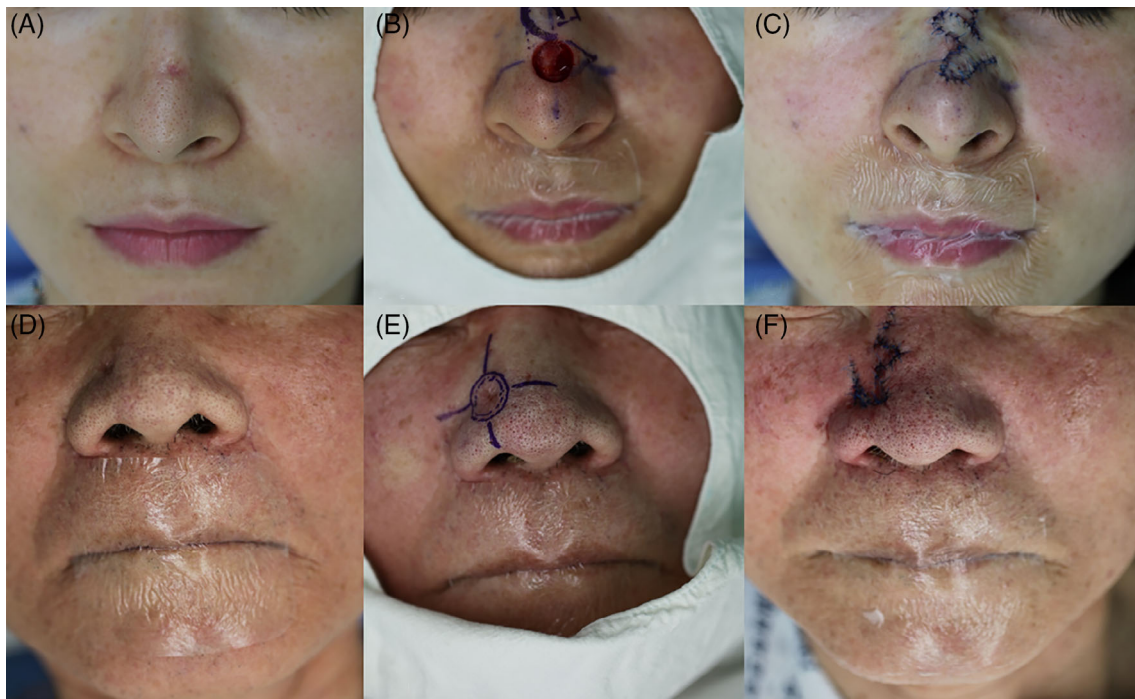


FIGURE 1 A, Basal cell carcinoma on the nose of the female patient. B, A face mask cannot be maintained during surgery, as it interferes with sterilization and securement of the surgical field. A sterile transparent film was applied on the mouth after aseptic skin preparation to prevent droplet transmission from speech or coughing during surgery. C, It was maintained throughout the surgery. After wound dressing, the film was replaced with a sanitary mask. D, Basal cell carcinoma on the nose of the male patient. A face mask was replaced with a transparent film to prevent droplet transmission from speech or coughing during surgery. E, The transparent film was attached to the mouth after aseptic skin preparation and maintained during the Mohs micrographic surgery. F, After the reconstruction of the surgical defect, it was replaced with a sanitary mask

removed to secure the surgical site. After skin preparation, we applied a sterile transparent film (Tegaderm, 3M, St Paul, Minnesota) on the mouth to prevent viral transmission through droplets generated from unintentional speech or cough (Figure 1A-C). After the surgical defect reconstruction, the film was removed and replaced with a sanitary mask. The second patient received MMS for BCC on the nose. The film on the mouth was maintained during the operation. After the reconstruction of the surgical defect, the film was replaced with a face mask (Figure 1D-F). In both cases, the films were well tolerated by the patients without any respiratory complications. Currently, we are applying this technique in patients undergoing surgery on the face. Both patients mentioned above provided informed written consent for documenting medical photographs.

During the COVID-19 pandemic, physicians and patients confront with a dilemma whether to receive or delay surgical removal of cancers.⁵ Surgery for nonmelanoma skin cancer can be deferred up to 3 months unless patients are highly symptomatic or have no risks of progression and metastasis. However, as the COVID-19 pandemic has lasted longer than initially expected, treatment cannot be delayed indefinitely.⁶

Skin cancers located near the nose or mouth require a special approach because a face mask will blind the surgical field. It interferes with the movement of the surgical instruments and sterilization of surgical areas. In contrast, a transparent film provides complete visibility even of underlying structures and does not cause steric hindrance because it is thin.


In conclusion, we present a useful tip of using a transparent film as an alternative facial mask for decreasing the risk of COVID-19 transmission during surgery. The limitation of the technique is that it cannot prevent aerosols released from the nasal cavity. Thus patients planned for surgery are recommended to receive nasopharyngeal swab test preoperatively.⁷ Still patients who received preoperative swab test are at risk of COVID-19 exposure while waiting for the results. If combined with preoperative swab test, our tip will substantially help in preventing nosocomial transmission. In normal breathing, droplets of typical radius of 5 μm which play a critical role in aerosol transmission were rarely detected above the background noise level from the nasal cavity, while those small droplets are highly detected from oral cavity.^{8,9} If surgical teams adopt effective masks, droplet transmission from health care providers to patients can be prevented, and vice versa. We hope our suggestion may serve as an auxiliary and practical method for reducing COVID-19 transmission during surgery in the era of pandemic when limited health care resources and facilities are considered.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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