

Pigmentary Changes on Facial Mask–covered Area: is it Related to Alteration of Microenvironment in the Era of COVID–19?

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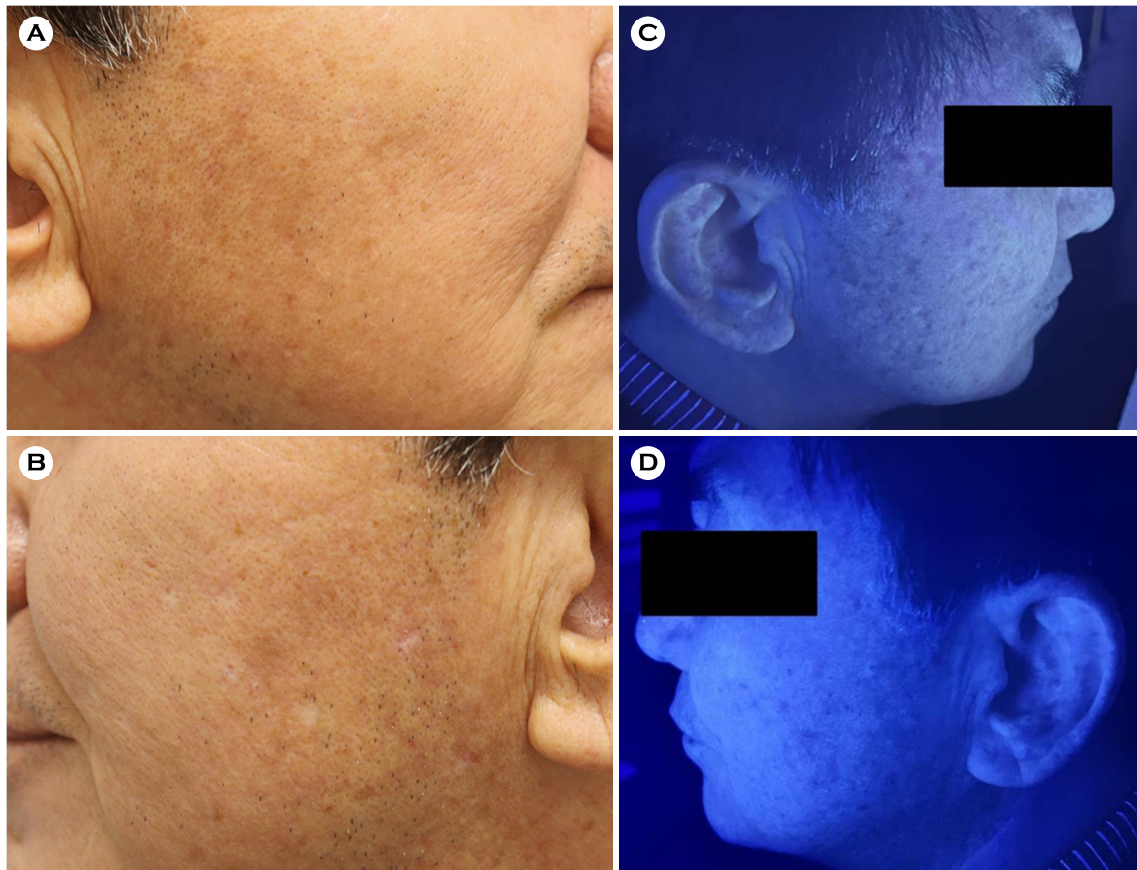


Fig. 1. (A, B) Hypopigmented and hyperpigmented asymptomatic, scaly patches were seen on both cheek which is covered by facial mask. (C, D) There was no fluorescence and accentuation of hypopigmented lesion under the light of a Wood's lamp.

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A 61-year-old male patient presented with hyper- and hypo-pigmented finely scaled macules (Fig. 1A, B). He had recently started training at the indoor gym, wearing a facial mask for more than 2 hours a day, during exercise, without replacement. The potassium hydroxide mount of the skin scrapping revealed short hyphae and spores, leading to a provisional diagnosis of tinea versicolor (TV), but topical antifungal medications failed to work. Additionally, Wood's lamp examination did not show any characteristics of vitiligo (Fig. 1C, D). Combination treatment with topical tacrolimus and excimer laser was introduced under the suspicion of progressive macular hypomelanosis (PMH) and achieved a partial resolution.

The bacterial community composition of the facial skin was dominated by lipophilic *Cutibacterium* species, whereas the fungal community by *Malassezia*¹. TV caused by *Malassezia* usually occurs on the trunk in a warm and humid environment. PMH is commonly seen on the trunk but rarely on the face because of the absence or low abundance of *C. acnes* type III².

Continuous use of face masks increases temperature, humidity, and sebum secretion in the covered area³ leading to alterations in the skin microbiome. Thus, the microenvironment of the area under the mask appears analogous to the trunk covered with clothing. Furthermore, facial PMH occurs in old age, indicating that the distribution of *C. acnes* type III could vary with age².

This study suggests the inclusion of TV and PMH when diagnosing patients for pigmentary changes due to the alterations in the facial skin microenvironment in the era of the COVID-19 pandemic.

Key Words: *Cutibacterium*, Facial mask, Hypopigmentation, Progressive macular hypomelanosis

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CONFLICT OF INTEREST

In relation to this article, we declare that there is no conflict of interest.

DATA SHARING STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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PATIENT CONSENT STATEMENT

The patient provided written informed consent for the publication and the use of his or images.

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