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CASE REPORT

Koebner Phenomenon Induced by Face Mask Ear Loops

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ABSTRACT

We present a case of Koebner phenomenon induced by friction due to tightness of ear loops attached to the face mask used as protective measure against spreading COVID-19 infection.

Keywords: Covid-19, facemask, contact, Koebner, psoriasis.

INTRODUCTION

Countless reports have been published about iatrogenic skin disorders among healthcare providers during COVID-19 pandemic infection. Besides cutaneous manifestations of COVID-19 infection, skin can be affected by the protective measures, especially among healthcare workers, raising the awareness of new types of occupational skin diseases.

Recently published reports have shown that prolonged use of face masks has been associated to skin dryness in 70.3% of health personnel and desquamation in 62.2%, especially on the nasal bridge (83%) (1).

After months of study, a statement has been released revealing that prolonged use of face masks and headgears can cause allergic contact dermatitis, irritant contact dermatitis, pressure urticarial, friction dermatitis and aggravation of pre-existing skin diseases (2).

The retro-auricular area is susceptible to mechanical pressure and friction caused by prolonged use of face masks, especially due to tightness of ear loops (3). ❑

CASE PRESENTATION

A 45-year-old male healthcare worker in an Intensive Care Unit, who had received a two-year treatment with adalimumab for Crohn disease, presented with *de novo* bilateral erythematous scaly plaques, which were localized in the retro-auricular region, overlaying the area covered by ear loops (Figure 1).

Searching the patient's medical data, no records of cutaneous psoriasis have been found, and clinical examination did not notice any other skin lesions. Mycological direct examination was nega-

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FIGURE 1. Bilateral erythematous scaly plaques localized in the retro-auricular area, overlaying the area covered by ear loops

tive. Taking into consideration the previous diagnosis of Crohn disease, adalimumab treatment and clinical picture, a Koebner phenomenon was presumed, and subsequently, a psoriasis diagnosis.

The diagnosis of psoriasis was mainly based upon the clinical picture of a non-pruritic symmetrical erythematosquamous eruption, positive family history of psoriasis. There is a close relationship between scalp and facial psoriasis to seborrheic dermatitis, sometimes called seboriasis. However, our patient had no lesions of seborrheic dermatitis typical sites (perinasal area, eyebrows, beard region, presternal area) and scales were rather dry in contrast to those of seborrheic dermatitis.

Topical steroids cleared up the lesions in two weeks, and preventive measures (friction avoidance) together with close follow-up were recommended.

Other diagnostic hypotheses such as seborrheic dermatitis and contact dermatitis should be excluded, especially in the absence of skin biopsy and lack of psoriasis lesions in other areas of the body. The patient had no known contact allergies. The periauricular lesions persisted when changing the mask with other materials. This argues against a contact dermatitis to an ingredient of the masks. There was no indication for patch testing at all.

The diagnosis of psoriasis is supported by the clinical aspect, bilateral and symmetrical distribution of the lesions, absence of pruritus, family history of psoriasis, and adalimumab treatment for Crohn disease. ❑

CONCLUSION

Koebner phenomenon is known as a trigger factor in psoriasis. Recent explanations are centered on immune response, showing that scratch induce upregulation of CCL20, accumulation of IL-17-A producing cells and presence of CCR6 dendritic cells (5).

Paradoxical psoriasiform reaction, de novo psoriasis or exacerbation of pre-existing psoriasis during treatment with anti-tumor necrosis factor (TNF)-α drugs are already known to affect the balance between TNF-α and interferon. ❑

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References

1. **Lan J, Song Z, Miao X, et al.** Skin damage among health care workers managing coronavirus disease-2019. *J Am Acad Dermatol* 2020;82:1215-1216.
2. **Yan Y, Chen H, Chen L, et al.** Consensus of Chinese experts on protection of skin and mucous membrane barrier for health-care workers fighting against coronavirus disease 2019. *Dermatol Ther* 2020;4:e13310.
3. **Qin Z, Jiao X, Lina W, et al.** Nursing strategies for skin injuries caused by facial medical grade protective gear. *Chin J Burns* 2020;36:14.
4. **Bhatia R, Sindhuja T, Bhatia S, et al.** Iatrogenic dermatitis in times of COVID-19: a pandemic within a pandemic [published online ahead of print, 2020 Jun 4]. *J Eur Acad Dermatol Venereol* 2020;10.1111/jdv.16710.
5. **Furue K, Ulzii D, Tanaka Y, et al.** Pathogenic implication of epidermal scratch injury in psoriasis and atopic dermatitis [published online ahead of print, 2020 Jul 16]. *J Dermatol* 2020;10.1111/1346-8138.15507. doi:10.1111/1346-8138.15507