COVID-19 infection in the differential diagnosis of retiform purpura.10

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Conflict of interest
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Retroauricular dermatitis with vehement use of ear loop face masks during COVID-19 pandemic

To the Editor
The coronavirus disease 2019 (COVID-19) pandemic forged the exponential use of masks of various kinds, not just by health workers but also by general population as a personal protective equipment (PPE). Although contact dermatitis due to PPE is well reported, mask induced dermatitis is a relatively unexplored phenomenon. In this article, we report a preliminary data of patients experiencing retroauricular dermatitis due to ear loop face masks.

From 1st April to 30th April, we came across 14 patients including both healthcare workers and general population who...
Table 1 Patients' demography, clinical profile, type and material of mask used

| S.No | Age/Sex | Clinical description                                      | Diagnosis                        | Pre-existing dermatoses | Type of mask            | Material of strap                  | Duration of wear |
|------|---------|----------------------------------------------------------|----------------------------------|-------------------------|-------------------------|-------------------------------------|-----------------|
| 1    | 34/M    | Erythema, excoriation, spreading to infra-auricular region | Allergic contact dermatitis      | Nil                     | N95                     | Thermoplastic elastomer             | 3 days          |
| 2    | 27/M    | Erythema, papules, scaling localized to the area of contact | Irritant contact Dermatitis      | Nil                     | N95 mask reused after chlorhexidine application | Thermoelastic polymer | 4 days          |
| 3    | 14/F    | Erythema, scaling, exoriation                            | Allergic contact dermatitis      | Atopic Dermatitis       | Surgical mask            | Rubber                             | 1 1/2 days      |
| 4    | 32/M    | Erythema, scaling, maceration                            | Sweat Dermatitis                 | Nil                     | N95 mask with headgear    | Thermoelastic polymer             | 10 days         |
| 5    | 58/F    | Oedematous wheals                                        | Pressure Urticaria               | Chronic urticaria       | N95                     | Thermoelastic polymer             | 3 h             |
| 6    | 41/M    | Erythema, scaling                                        | Irritant contact dermatitis (frictional) | Nil                     | Double surgical mask      | Latex                              | 2 days          |
| 7    | 22/M    | Erythema, oozing, crusting                               | Allergic contact dermatitis      | Seborrheic dermatitis   | KN 95 mask               | Latex                              | 5 days          |
| 8    | 36/F    | Erythema, maceration                                     | Sweat dermatitis                 | Nil                     | Homemade cloth mask      | Nylon                              | 9 days          |
| 9    | 16/M    | Erythema, scaling                                        | Allergic contact dermatitis      | Atopic dermatitis       | Homemade cloth mask      | Rubber                             | 6 days          |
| 10   | 24/M    | Erythema, maceration, oozing                             | Sweat dermatitis                 | Seborrheic dermatitis   | FFP 2 mask with headgear | Thermoelastic polymer             | 8 days          |
| 11   | 19/F    | Erythema, papules, scaling, fissuring                     | Irritant contact dermatitis      | Nil                     | Homemade cloth mask (7 Cloth Dye culpable) | Cotton-Polyester | 2 days          |
| 12   | 37/M    | Erythema, oozing, crusting                               | Exacerbation of atopic dermatitis | Atopic dermatitis       | Surgical mask with n-propanol application | Latex          | 2 days          |
| 13   | 53/M    | Erythema, scaling                                        | Irritant contact dermatitis (frictional) | Nil                     | Double surgical mask      | Latex                              | 3 days          |
| 14   | 62/F    | Erythema, papules, scaling, fissuring                     | Irritant contact dermatitis      | Atopic dermatitis       | N95 reused after 70% isopropyl alcohol application | Thermoelastic polymer | 5 days          |
complained of itching, redness and/or scaling involving the retroauricular region following the use of ear loop face masks. The history, clinical features including onset, duration, pre-existing dermatoses, type and duration of mask used, and material of the straps were recorded, and a clinical diagnosis was made. The patients were treated with emollients, topical corticosteroids and/or oral anti-histamines.

Out of the 14 cases, 5 (35.7%) patients were diagnosed to have irritant contact dermatitis (ICD), four (28.5%) patients were diagnosed with allergic contact dermatitis (ACD), three (21.4%) patients developed sweat dermatitis and one patient diagnosed to have pressure urticaria.1 Patient presented with exacerbation of pre-existing dermatoses. The patch test could not be performed due to the prevailing dire pandemic. N95 masks were the most commonly used mask in 35.7% of patients, having thermoelastic polymer straps. Sweat dermatitis was observed due to associated headgear use or using nylon cloth masks. Reusing masks after application of disinfectant resulted in ICD in three patients. Latex was the commonest strap material resulting in dermatoses in four (28.5%) patients. Pre-existing dermatoses were present in seven (50%) patients including atopic dermatitis in four, seborrhoeic dermatitis in two and chronic urticaria in one. The most common symptoms reported were itching and dryness, whereas the most common signs seen were erythema, scaling and papules (Table 1; Fig. 1).

A study by Foo et al.1 from Singapore mentioned adverse skin reactions in 35.5% practitioners using N95 masks, of which 51.4% developed facial itch and 35.8% skin rash. Donovan et al.2 reported three persons developing contact urticaria and two persons with ACD following N95 masks.2 Contact dermatitis to rubber and dibromodicyanobutane present in the adhesive of polyester foam strip was reported by the use of surgical mask.3 ACD to thiuram present in elastic ear strap has been documented.4 Komericki et al.5 reported cocopropylenediamin–guanidium–diacetate, used to disinfect medical instruments and apparatus, responsible for ACD to non-disposable face masks.5 Similar effects on the face by PPE in healthcare workers managing COVID-19 cases have been documented, but no study has elaborated the retroauricular involvement.6 Frequent frictions due to the straps, trapping of sweat, use of disinfectant to reuse masks and application of dyes to colour homemade masks are frequent causes of dermatitis using ear loop face masks. The strap material including thermoelastic polymer, rubber and latex further leads to contact dermatitis. Moreover, the masks can cause exacerbation of pre-existing dermatoses.

The authors would like to suggest the use of headband face masks for healthcare professionals using the mask for prolonged periods. The general population using homemade face masks should use cotton cloth based masks with gaiters of appropriate elasticity and avoid any disinfectant application. Persons with pre-existing dermatoses including atopic dermatitis, seborrhoeic dermatitis and chronic urticaria need to take special precautions, and use of disposable surgical masks should be encouraged. Donning of masks should be done after proper absorption of the emollient to prevent leeching of strap polymers.

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COVID-19: how it can look on the skin. Clinical and pathological features in 20 COVID-19 patients observed in Bologna, north-eastern Italy

Dear Editor,

Global public health is currently dealing with the explosive spread of the novel Coronavirus disease 2019 (COVID-19). This new type of viral pneumonia spread from its first focus in Wuhan (Hubei, China) to across all the world, until a pandemic condition was declared.

Clinically, the most common symptoms of the disease are cough and fever. More than 80% of patients have asymptomatic to moderate disease, but about 15% get severe pneumonia and 5% develop a multi-organ failure.2 The diagnosis of COVID 19 is based on a multifactorial approach including clinical symptoms, vital parameters, radiological and laboratory findings. The virus isolation, necessary to confirm the diagnosis, is obtained through nasopharyngeal and oropharyngeal swab.

Italy is one of the most involved countries in this pandemia with 207,428 total cases till now.3 There are only a few reports concerning the skin manifestations in COVID 19 patients. Until now, 20 skin manifestations in COVID 19 patients came to the attention of the Dermatology Unit of the city of Bologna, in Emilia Romagna, the third Italian most affected region.

Of the 20 patients observed, 18 of the cases were related to the disease, and two to the devices used for the ventilation assistance, one developing a severe sebopsoriasis of the face and one a facial herpes. Among the 18 cases related to the disease, nine presented exanthematic rashes (Fig. 1a,b), six presented acral vasculitic eruptions (Fig. 1c,d), two a polymorpho-like urticaria (Fig. 1e) and one a varicelliform eruption. The median age of the patients was 51 years; 17 were male, and three were female.

With regards, the cases related to the disease, in two, the signs were present at the onset, while in the other 16, they appeared later. We excluded a iatrogenic origin, as these patients had not assumed any drugs potentially involved in skin reactions over the previous 15 days. Other viral aetiologies were excluded by

![Figure 1](a,b) Erythematous exanthema of the trunk in two COVID 19 patients. (c,d) Acral ischaemic lesions resembling perniosis on the extremities of a COVID 19 patient. (e) Detail of polymorpho-like urticaria on the left hand. (f) Superficial perivascular dermatitis with lymphocytic infiltrate, dilated vessel in the papillary and mid dermis were observed. Mild spongiosis, lymphocytes along the dermoepidermal junction and vacuolar alteration were present. H&E 2×.