

important dermatology research questions. For example, high-quality clinical trial evidence on the benefits (or lack of benefits) of immunomodulatory drugs such as systemic corticosteroids, intravenous immunoglobulins, tumour necrosis factor blocker biologics and ciclosporin as treatments for toxic epidermal necrolysis is urgently needed. This can only be achieved through a coordinated national or international clinical trial to assess these repurposed drugs, owing to the low prevalence of this rare but devastating disease. Clinical research into genodermatoses could benefit from coordinated efforts to set up national and international registries to inform the planning, conduct and recruitment of patients with rare genetic skin diseases into future clinical trials. The British Association of Dermatologists (BAD) Dermatology and Genetic Medicine group, along with Dr Zamiri (chief investigator leading the Genetic Skin Disease in Scotland study; REC reference: 16/ES/0094), and dermatologists and academics across the UK are working tirelessly towards achieving this goal. While new legislation and relaxation of regulatory barriers may prove invaluable to enhancing research volume, we must also be vigilant to less scientifically robust studies emerging. Ultimately, with increased collaboration, data sharing and open access publishing (e.g. the newly launched BAD online journal *Skin Health and Disease*; online ISSN: 2690-442X), we may stimulate further creativity and thought-provoking research leading to treatment advances in dermatology for years to come.

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## 'Mask tinea': tinea faciei possibly potentiated by prolonged mask usage during the COVID-19 pandemic

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The COVID-19 pandemic emerged when India was already facing an epidemic-like situation of superficial dermatophytosis (tinea). The prevalence of tinea in India is currently 27.6%, with tinea faciei accounting for 1.8% cases.<sup>1</sup> The use of face masks, although necessary, has the potential to aggravate a worrisome situation with regard to tinea in India.

We report seven nonfamilial cases of tinea faciei (confirmed by culture and potassium hydroxide staining) all of which involved the facial area covered by a mask (Fig. 1, Fig. 2, Table 1). The lesions appeared after the patients began using masks. Mean duration of mask use was 6–7 h/day. Patients reused masks without daily washing (mean duration 6–7 days before washing), and the used masks were often stored and washed with other clothing. Five patients had pre-existing plaques of tinea (tinea corporis, cruris and unguium) elsewhere. Presence of tinea infections among family members was noted in four patients, three of whom gave a history of sharing masks with other family members. Three patients had pre-existing diabetes mellitus. All the patients were treated with oral and topical antifungals, and given advice regarding proper mask use.

Face masks create a humid microenvironment due to occlusion and increased sweating, which are the perfect conditions for the fungus. In a tropical country such as India where the burden of tinea is already high, we believe that the widespread promotion and use of cloth face masks is acting as a source for the inoculation and spread of dermatophytes.<sup>2,3</sup> In all patients, the source of infection was either from a coexisting area of tinea elsewhere or from an infected family member. Most of the patients reused and shared masks, and washed masks along with their regular clothing. Hammer *et al.* found that 10% of infectious material was transferred from contaminated to sterile textiles during common storage, and 16% of spores were transferred during washing of clothes in the same vessel. Washing of contaminated clothes at




**Figure 1** (a,b) Tinea faciei presenting as (a) a serpiginous plaque localized above left nasolabial fold in Patient 1 and (b) as scaly plaque with a defined margin seen in the neck region in Patient 2. (c) Lactophenol cotton blue mount showing tear-drop microconidia consistent with *Trichophyton rubrum* in a culture from Patient 1.

60 °C is recommended to eliminate fungal pathogens, which is not commonly practised in India. This explains how the fungus spreads from clothes to the mask, and persists even after regular washing.<sup>4</sup> Family history of tinea, fomite spread, tight clothing, hot and humid climate, and pre-existing diabetes are documented risk factors for acquiring tinea (noted in our patients).<sup>5</sup> Multiple lockdowns impinging access to healthcare, along with personal neglect and use of over-the-counter treatments could also be precipitating factors.

We propose calling this new variant of tinea faciei, 'mask tinea', owing to its peculiar location, associated cosmetic blemishes and difficulty in prevention. The masking effect due to the protective face covers could lead to a delay in diagnosis, thus we advocate thorough examination of the mask area in patients with tinea. A limitation of our case series is that we cannot confidently attribute this type of tinea solely to the wearing of masks, as other proven risk factors should be considered as well. Establishing the causality requires further case–control studies.

As dermatologists, we should be aware about this increasing problem due to the novel mask requirements by the general public during the COVID-19 pandemic.

Consequently, proper counselling regarding use, handling and sanitization of the ubiquitous mask should also be done.

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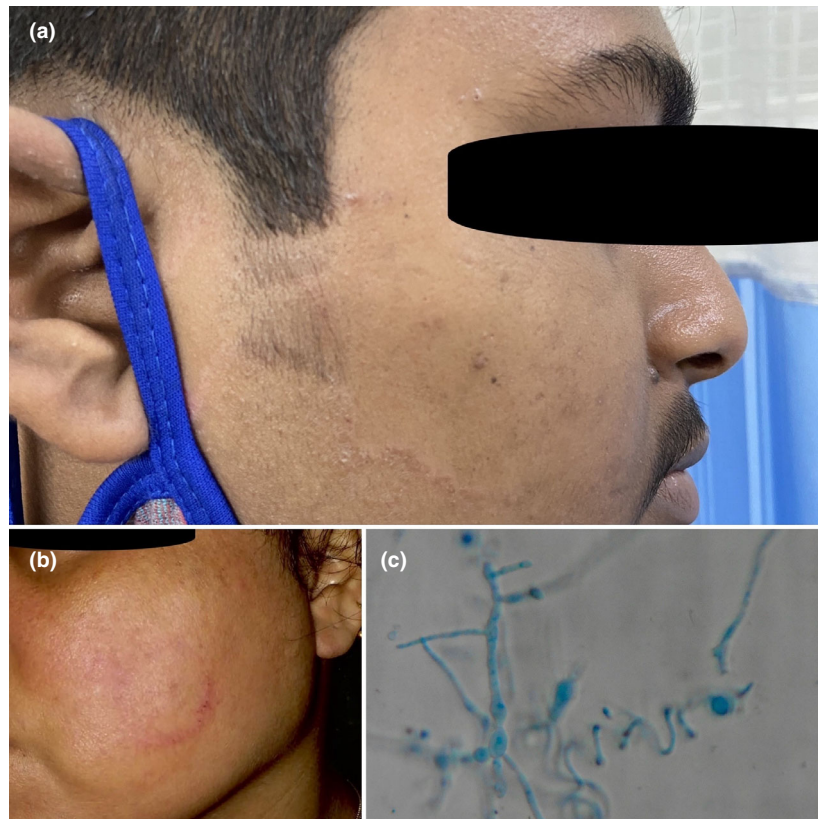
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**Figure 2** (a,b) Tinea faciei as (a) an annular plaque 30 × 30 mm in size on the right cheek in Patient 3 (b) and (b) as an erythematous annular plaque localized to the left cheek of Patient 4. (c) Lactophenol cotton blue mount showing spiral hyphae consistent with *Trichophyton mentagrophytes* in a culture from Patient 3.

**Table 1** Characteristics of patients presenting with 'mask tinea'.

| Patient | Age, years/sex | Fungal culture                     | Location of tinea on face  | Mean duration of mask use per day, h | Tinea lesions elsewhere in the body         | Mean duration between washing masks, days | Family history of tinea | Sharing of mask among family members | Concurrent disease/medication   |
|---------|----------------|------------------------------------|----------------------------|--------------------------------------|---|---|-------------------------|--------------------------------------|---------------------------------|
| 1       | 50/M           | <i>Trichophyton rubrum</i>         | Above left nasolabial fold | 8–10                                 | Tinea corporis, cruris and unguium (toe)    | 7   | Yes                     | No                                   | Type 2 DM, uncontrolled/insulin |
| 2       | 35/F           | <i>T. rubrum</i>                   | Neck region                | 6                                    | No  | 7   | Yes                     | Yes                                  | Type 2 DM, controlled/metformin |
| 3       | 30/M           | <i>Trichophyton mentagrophytes</i> | Right cheek                | 8                                    | Tinea cruris                                | 3–4                                       | No                      | No                                   | –                               |
| 4       | 40/F           | <i>T. mentagrophytes</i>           | Left cheek                 | 6–8                                  | No  | 5   | Yes                     | Yes                                  | Type 2 DM, controlled/metformin |
| 5       | 25/M           | <i>T. mentagrophytes</i>           | Left cheek                 | 8–10                                 | Tinea cruris, corporis and unguium (finger) | 5–7                                       | Yes                     | Yes                                  | –                               |
| 6       | 43/M           | <i>T. rubrum</i>                   | Right cheek                | 6–8                                  | Tinea cruris                                | 10  | No                      | No                                   | –                               |
| 7       | 18/F           | <i>T. mentagrophytes</i>           | Right cheek                | 6                                    | Tinea cruris                                | 7   | No                      | No                                   | –                               |

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### An evaluation of dermatology patients shielding during the COVID-19 outbreak

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Many governments around the world have enforced social distancing strategies in an effort to prevent the spread of the novel coronavirus, termed SARS-CoV-2, which can lead to a fatal respiratory disease known as coronavirus disease 2019 (COVID-19). On 22 March 2020 the UK government announced that over 1.5

**Table 1** Summary of respondents' background, demographics and list of systemic therapies/biologics<sup>a</sup>

| Parameter  |       |
|--|-------|
| Sex  |       |
| Male   | 181   |
| Female   | 137   |
| Age, years                                       |       |
| Mean   | 51.8  |
| Median   | 53    |
| Range  | 16–87 |
| Ethnicity  |       |
| White British (including NI, Scotland and Wales) | 267   |
| Asian or Asian British (Pakistani)               | 15    |
| Asian or Asian British (Indian)                  | 11    |
| Not stated                                       | 9     |
| White Irish                                      | 7     |
| Any other white background                       | 5     |
| Asian or Asian British (Bangladeshi)             | 1     |
| Mixed (White & Black Caribbean)                  | 1     |
| Other (Chinese)                                  | 1     |
| Mixed (White & Asian)                            | 1     |
| Dermatoses                                       |       |
| Chronic plaque psoriasis                         | 203   |
| Eczema   | 74    |
| Hidradenitis suppurativa                         | 20    |
| Other inflammatory disease                       | 12    |
| Chronic spontaneous urticaria                    | 7     |
| Bullous disorders                                | 2     |

**Table 1** continued

| Parameter                               |    |
|---|----|
| Medication                              |    |
| Biologic                                |    |
| Adalimumab                              | 75 |
| Dupilumab                               | 57 |
| Ustekinumab                             | 51 |
| Ixekizumab                              | 18 |
| Guselkumab                              | 14 |
| Secukinumab                             | 10 |
| Etanercept                              | 8  |
| Omalizumab                              | 7  |
| Brodalumab                              | 5  |
| Infliximab                              | 2  |
| Risankizumab                            | 2  |
| Rituximab                               | 1  |
| Systemic therapies other than biologics |    |
| Methotrexate                            | 31 |
| Dimethyl fumarate                       | 10 |
| Azathioprine                            | 5  |
| Ciclosporin                             | 5  |
| MMF                                     | 5  |
| Apremilast                              | 3  |
| Interferon-alfa                         | 1  |
| Combination therapies                   |    |
| Adalimumab and methotrexate             | 2  |
| Dupilumab and ciclosporin               | 2  |
| Dupilumab and prednisolone              | 1  |
| Azathioprine and MMF                    | 1  |
| MMF, prednisolone and mepacrine         | 1  |
| Ciclosporin and prednisolone            | 1  |

MMF, mycophenolate mofetil; NI, Northern Ireland. <sup>a</sup>Those on a single agent had additional high-risk circumstances/comorbidities.

million 'extremely vulnerable' adults (those with risk factors making them likely to suffer from more severe symptoms of COVID-19, such as age > 70 years, or presence of significant comorbidities or concurrent immunosuppression) would have to take additional measures and shield,<sup>1</sup> meaning that they should not leave their homes and must restrict contact with others within their household. Many authors have raised concerns about the psychological and physical wellbeing of such groups, particularly those already considered to be society's most vulnerable and technology-poor, such as elderly people.<sup>2,3</sup> The UK government and local councils established a new 'local support system' to facilitate help with delivery of shopping and medication and to which people who are shielding could sign up.

To understand the experience of our dermatology patients who were advised to shield (in Greater Manchester, UK) we conducted a telephone questionnaire. Retrospective analysis of patient records/pharmacy lists revealed 1071 patients that met the British Association of Dermatologists' criteria for shielding.<sup>4</sup> Printed letters were posted to these patients, advising them accordingly. We