

**Figure 1** Erythematous annular and irregular weals in two patients with COVID-19 infection: (a,b) Patient 1, a 50-year-old woman; (c,d) Patient 2, a 20-year-old woman, who was the daughter of Patient 1.

Further studies are required to elucidate the skin involvement in COVID-19. Histopathology of active exanthemas may be helpful in understanding the skin manifestations of COVID-19 infection.

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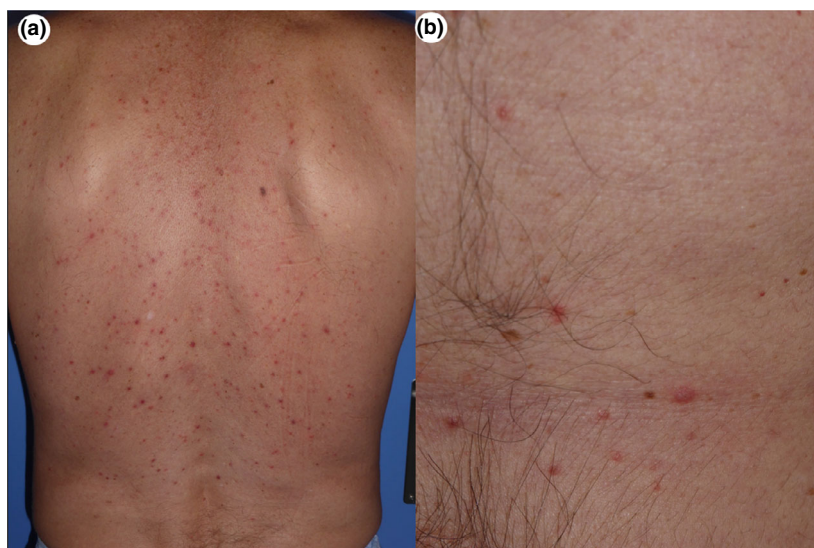
### Comment on 'Clinical and histological characterization of vesicular COVID-19 rashes: a prospective study in a tertiary care hospital'. Pseudoherpetic Grover disease seems to occur in patients with COVID-19 infection

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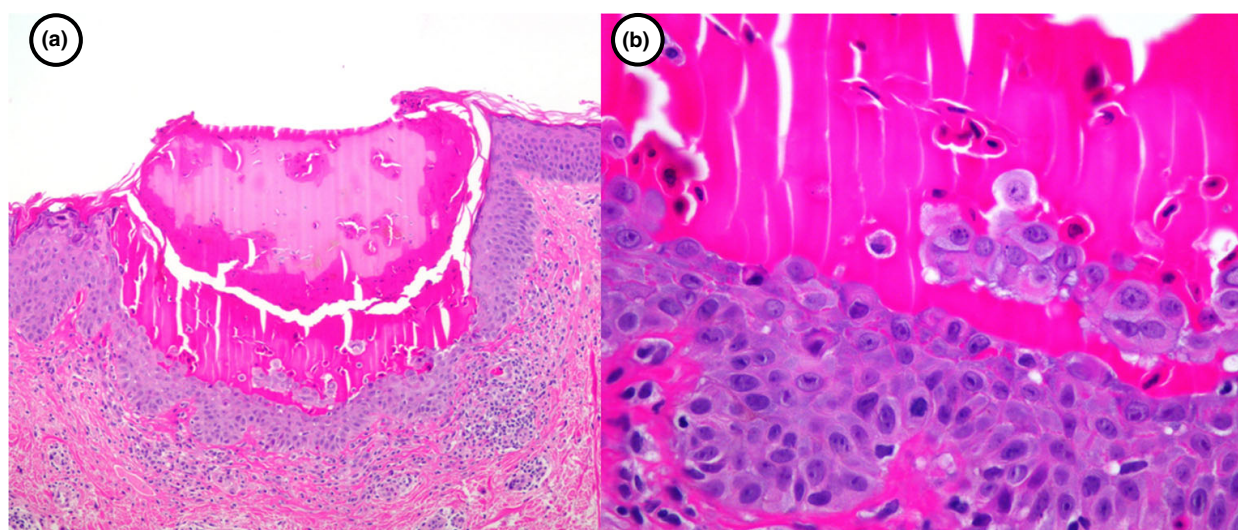
We read with great interest the article by Fernandez-Nieto *et al.* showing histopathological pictures of one of the two biopsied cases from their series of 24 patients diagnosed of vesicular lesions related to COVID-19.<sup>1</sup> They additionally performed a real-time PCR assay for SARS-CoV-2 that was negative in four tested cases.<sup>1</sup> Regarding their case using histopathological pictures, we agree with their description as we can observe acantholytic cells, some of them with dyskeratotic features or grouped without a clear moulding of nucleus, but reminiscent of the multinucleated giant cells typically observed in herpetic lesions, a picture that looks to our eyes, most likely to be a rare entity named pseudoherpetic Grover disease (GD),<sup>2</sup> first described as vesicular GD by Fernandez-Figueras *et al.*<sup>3</sup>

Pseudoherpetic GD is characterized clinically by asymptomatic or itchy papules, intermingled with crusts and isolated vesicles or pustules that mostly involve the trunk (Fig. 1), a picture that overlaps with the diffuse pattern of vesicular lesions related to COVID-19, described by Fernandez-Nieto *et al.*<sup>1</sup> Histopathologically, the main clues for the diagnosis of pseudoherpetic GD are the presence of intraepidermal vesicles, frequently filled with plasma, along with scarce groups of acantholytic cells, mostly located in the lateral parts of the vesicle. A dermal inflammatory infiltrate, which may contain neutrophils, can also be present (Fig. 2). In our series of pseudoherpetic GD, we did not find any viral inclusions, and immunostaining for herpesvirus and varicella were negative in all the cases.<sup>2</sup>

COVID-19 infection characteristically produces lymphopenia, and immunosuppression is a predisposing factor for both herpesvirus recurrence<sup>4</sup> and development of pseudoherpetic GD.<sup>2</sup>



**Figure 1** (a) Papules and vesicles involving the whole trunk. Different sizes of the lesions can be observed. (b) Anterior trunk of the same patient detail showing mostly vesicles and crusted papules.



**Figure 2** (a) Intraepidermal vesicle filled with plasma. (b) Detail of dyskeratotic cells as well as groups of acantholytic cells resembling multinucleated herpetic cells.

As many patients during hospitalizations can present flares or new onset of GD related to sweating in the context of fever, increased bed rest and immunosuppression, COVID-19 is likely to favour GD. As we assume that tests to exclude a superimposed viral infection were performed for all the published cases by Fernandez-Nieto *et al.*, we would like to know if in the biopsied cases, immunostaining for herpes simplex and herpes zoster viruses were negative, as we consider these two types of immunostaining to be mandatory to confirm the diagnosis of pseudoherpetic GD, as true herpesvirus may superimpose on

acantholytic diseases such as GD or others, making the diagnosis more challenging.<sup>5</sup>

The appearance of vesicles as a clinical presentation of GD raise the differential diagnosis of varicella or disseminated herpes zoster, and even with the vesicular lesions associated to COVID-19, as the clinical pattern of these entities may overlap.

In conclusion, we consider that when faced with vesicular lesions even during the COVID-19 pandemic, tests such as Tzanck smear or PCR for Herpesviridae family on vesicle fluid or skin biopsy should be performed to exclude

disseminated forms of other common viral infections and also rarer entities such as pseudo-vesicular GD, as these two cases seem to be.

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Patient consent: No patient consent for social media

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MF-F and JF contributed equally to this work and should be considered joint last authors.

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## Dermatological insights from Google Trends: what does the public think is important during COVID-19 lockdown?

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In the UK, Google is often the search engine used to explore information relating to many aspects of people's lives, including dermatological advice and information.<sup>1</sup> The frequency of searching for particular terms can

**Table 1** Relative change in number of searches from 2 January 2020 to 12 May 2020.

| Search term                 | 2 January 2020 | 12 May 2020 | % change |
|-----------------------------|----------------|-------------|----------|
| <b>Medical Dermatology</b>  |                |             |          |
| Acne                        | 53             | 75          | +22      |
| Hand Eczema                 | 37             | 53          | +16      |
| Rash                        | 60             | 67          | +7       |
| Eczema                      | 67             | 68          | +1       |
| Psoriasis                   | 66             | 52          | -14      |
| <b>Lesional Dermatology</b> |                |             |          |
| Wart                        | 39             | 64          | +25      |
| Mole                        | 67             | 75          | +8       |
| Melanoma                    | 48             | 53          | +5       |
| Skin Cancer                 | 73             | 67          | -6       |
| <b>Cosmetic Dermatology</b> |                |             |          |
| Chemical Peel               | 57             | 76          | +19      |
| Lip Filler                  | 46             | 33          | -13      |
| Botox                       | 67             | 41          | -16      |
| Laser Hair Removal          | 71             | 54          | -17      |
| Hair Transplant             | 69             | 37          | -32      |

indicate the relative importance that the public assigns to various conditions and is dynamic, fluctuating in different societal contexts, such as during a pandemic.<sup>2</sup> We explored whether the trends of Google searches of common medical, lesional and cosmetic dermatology conditions and procedures changed during the COVID-19 pandemic in order to gauge whether the relative importance assigned by the public to particular conditions or facets of dermatology changed during that timeframe.

Google Trends (<http://www.google.com/trends/>) was used to compare the relative frequency of English language search terms in the UK over a 90-day period (2 January 2020 to 12 May 2020).<sup>3</sup> The authors established categories of medical, lesional and cosmetic dermatology (see Table 1). The relative number of searches for medical and lesional dermatology terms stayed broadly stable throughout the lockdown period (Fig. 1a,b), but the relative number of searches for cosmetic dermatology terms appeared to mostly decline (Figs 1c and 2). Of particular note, the relative number of searches for the terms 'acne', 'wart' and 'hand eczema' rose both qualitatively and in percentage terms over the 90-day period. The increased interest in acne (22% increase) and warts (25% increase) during this period may reflect the public desire to self-treat these nonurgent, but life-impacting conditions during a period of lockdown. The 16% increase in searches for hand eczema reflects greater emphasis (and public health campaigns) regarding hand hygiene, which has led to an increased incidence of hand eczema, for which patients are seeking solutions.<sup>4</sup>

The relative stability in searches for other medical and lesional dermatology conditions suggests that lockdown or the pandemic did not affect patients' perception of the relative importance to these conditions. As for cosmetic