The broad spectrum of dermatological manifestations in COVID-19: clinical and histopathological features learned from a series of 34 cases

Dear Editor,

Since the outbreak of coronavirus disease (COVID-19) pandemic began in Europe, a plethora of cutaneous manifestations have been related to this infection.1,2 However, their underlying

Table 1 Demographic and clinical characteristics of most frequently observed dermatological manifestations

| Maculopapular exanthem | Pseudo-chilblains/Livedo | Targetoid lesions | Palpable purpura (2 with vesicles) | Acute urticaria/Urticular exanthem | Total of patients |
|------------------------|--------------------------|------------------|-----------------------------------|-----------------------------------|-------------------|
| N                      | 10                       | 10               | 5                                 | 4                                 | 4                 | 34                |
| Female, n (%)          | 6 (60)                   | 5 (50)           | 2 (40)                            | 3 (75)                            | 3 (75)            | 20 (59)           |
| Age (median and IR)    | 53 (31–61)               | 39 (17–62)       | 60 (40–78)                        | 62 (57–69)                        | 54.5 (37–65)      | 54.5 (31–66)      |
| New drugs interference, n (%) | 7 (70)             | 3 (30)           | 5 (100)                           | 3 (75)                            | 3 (75)            | 22 (65)           |
| Biopsy, n              | 2                        | 8                | 2                                 | 4                                 | 1                 | 17                |
| Diagnosis of COVID-19, n (%) | 6 (60)          | 2 (20)           | 4 (80)                            | 2 (50)                            | 2 (50)            | 17 (50)           |
| Positive RT-PCR        | 3 (30)                   | 2 (20)           | 1 (20)                            | 1 (25)                            | 1 (25)            | 8 (24)            |
| Radiological diagnosis | 1 (10)                   | 6 (60)           | 0 (0)                             | 1 (25)                            | 1 (25)            | 9 (27)            |
| Suspected (Negative RT-PCR) | 8 (80)            | 4 (40)           | 5 (100)                           | 3 (75)                            | 2 (50)            | 23 (68)           |
| Pneumonia (inpatient)  | 1 (10)                   | 1 (10)           | 1 (20)                            | 0 (0)                             | 0 (0)             | 3 (9)             |
| ICU                    | 2 (20)                   | 3 (30)           | 0 (0)                             | 1 (25)                            | 0 (0)             | 2 (6)             |
| Congestive heart failure | 1 (10)               | 1 (10)           | 0 (0)                             | 0 (0)                             | 0 (0)             | 2 (6)             |
| Hypertension           | 2 (20)                   | 3 (30)           | 1 (20)                            | 2 (50)                            | 0 (0)             | 8 (24)            |
| Diabetes               | 1 (10)                   | 0 (0)            | 1 (20)                            | 0 (0)                             | 0 (0)             | 2 (6)             |
| Chronic obstructive pulmonary disease | 1 (10)       | 0 (0)            | 2 (40)                            | 0 (0)                             | 0 (0)             | 3 (9)             |
| Asthma                 | 1 (10)                   | 1 (10)           | 2 (40)                            | 1 (25)                            | 0 (0)             | 5 (15)            |
| Time correlation between the appearance of cutaneous manifestations and COVID-19 onset, n (%) |                           |                  |                                   |                     |                   |                  |
| Before                 | 0 (0)                    | 1 (10)           | 0 (0)                             | 0 (0)                             | 0 (0)             | 1 (3)             |
| ≤10 days               | 3 (30)                   | 3 (30)           | 0 (0)                             | 1 (25)                            | 2 (50)            | 10 (29)           |
| >10 days               | 7 (70)                   | 3 (30)           | 5 (100)                           | 3 (75)                            | 2 (50)            | 20 (59)           |

Percentages are for each column.
mechanism and prognostic relevance remain unclear. Thus, we collected data from all COVID-19 cases presenting with skin manifestations in our hospital in Madrid during one month. We registered 34 COVID-19 patients (Table 1), including confirmed cases by RT-PCR test (17/34) or radiological findings (8/34, 4 with negative RT-PCR assay), and patients with suspected infection and negative RT-PCR test (9/34) based on respiratory symptoms, fever and close contact with COVID-19 cases.

Maculopapular exanthems were the most frequent manifestation observed (10), followed by pseudo-chilblain (9), targetoid lesions (5), palpable purpura (4), acute urticaria (3) and vesicular lesions (2). The remaining three cases showed livedo reticularis, urticarial exanthem and prurigo lesions.

Maculopapular exanthems (Fig. 1f) were unspecific and mostly appeared at a late stage of COVID-19. The morphology observed in early exanthems, prior pharmacological interference,
Dear Editor,

The dermatological manifestations of COVID-19 infection (CI) are variable, including livedo/necrosis, pseudochilblains, vesicular (monomorphic vesicles unlike varicella), urticarial and papulovesicular eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Two cases of cutaneous eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Dear Editor,

The dermatological manifestations of COVID-19 infection (CI) are variable, including livedo/necrosis, pseudochilblains, vesicular (monomorphic vesicles unlike varicella), urticarial and papulovesicular eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Two cases of cutaneous eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Dear Editor,

The dermatological manifestations of COVID-19 infection (CI) are variable, including livedo/necrosis, pseudochilblains, vesicular (monomorphic vesicles unlike varicella), urticarial and papulovesicular eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Two cases of cutaneous eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.

Dear Editor,

The dermatological manifestations of COVID-19 infection (CI) are variable, including livedo/necrosis, pseudochilblains, vesicular (monomorphic vesicles unlike varicella), urticarial and papulovesicular eruptions due to COVID-19 infection in Singapore: new insights into the spectrum of clinical presentation and histopathology.