

presentations were ultimately hospitalized, and the trend continued postlockdown. These experiences could be replicated in dermatology departments around the world in the postpandemic recovery period, and anticipating these trends can inform decision-making for clinicians.

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Conflicts of interest

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SARS-CoV-2-induced telogen effluvium: a multicentric study

Editor

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has been recently linked to dermatologic manifestations¹ and is thought to affect more severely patients with androgenetic alopecia.²

We designed a prospective multicentric study, which enrolled patients from March to August 2020 with acute telogen effluvium (ATE) that had a prior SARS-CoV-2 infection confirmed either by serological tests [e.g. detection of serum antibodies against the virus via enzyme-linked immunosorbent assays (ELISAs)] or by detection of viral RNA using real-time reverse transcription polymerase chain reaction (RT-PCR). SARS-CoV-2-associated telogen effluvium was diagnosed based on typical history of hair shedding following viral infection, compatible trichoscopic (absence of anisotrichosis and presence of regrowing hairs) and trichogram findings (>25% follicles in telogen).

In total, 214 patients with a diagnosis of ATE were enrolled and 89.7% (191 patients) had a confirmed diagnosis of prior SARS-CoV-2 infection. Table 1 shows their clinical and demographic characteristics. Mean age of patients was 47.4 years (range: 15-88 years). One hundred and fifty patients (78.5%) of the patients were women. The majority of the patients (86.4%) had fever, and only 26 patients (13.6%) had an asymptomatic SARS-CoV-2 infection. Twenty-three patients (12%) had dermatologic manifestations of the disease (e.g. pernio-like manifestations). Seventy and seven per cent of the patients (147) required medical treatment for the viral infection. Globally, 75.4% (144 patients) of the patients received treatment with paracetamol, 14.7% received non-steroidal anti-inflammatory drugs, 26.2% received oral corticosteroids, 42.9% received oral antibiotics, 19.9% received oral lopinavir/ritonavir, 5.2% received remdesivir, 13.54% received tocilizumab and 97 patients received enoxaparin. Forty patients (20.8%) required hospitalization,

Table 1 Clinical and epidemiological characteristics of the patients

<i>n</i>	191 confirmed cases
Sex	150 female (78.5%) 41 male (21.4%)
Age	47.4 years (range: 15–88)
Symptomatology	-Fever: 165 (86.4%) -Dermatologic manifestations: 23 (12%)
Medical care	-Ambulatory: 136 (71.2%) -Hospitalization: 40 (20.8%) -Intensive care unit: 15 (7.8%)
Treatment	Paracetamol: 75.4% (144) NSAIDs: 14.7% (28) Oral corticosteroids: 26.2% (50) Oral antibiotics: 42.9% (82) Lopinavir/ritonavir: 19.9% (38) Remdesivir: 5.2% (10) Tocilizumab: 13.54% (26) Enoxaparin: 50.5% (97)
Severity (Sinclair score)	1: 4.7% (9) 2: 10.5% (20) 3: 12.6 (24) 4: 20.4% (39) 5: 22% (42) 6: 29.8% (57)
Days since SARS-CoV-2 detection and hair shedding	57.1 (SD 18.3)
Telogen effluvium treatment	2% topical minoxidil: 32 (26.8%) 5% topical minoxidil: 45 (23.6%) Oral minoxidil: 18 (9.3%) Oral nutricosmetics: 70 (36.4%) Platelet-rich plasma (PRP) injections: 8 (4.1%) No treatment: 18 (9.4%)

NSAIDs, non-steroidal anti-inflammatory drugs; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; SD, standard deviation.

and fifteen (7.8%) required admission to the intensive care unit. Mean number of days since SARS-CoV-2 diagnosis and significant hair shedding was 57.1 days (standard deviation of 18.3). Regarding the severity of hair shedding, which was evaluated by the Sinclair Shedding Scale,³ 4.7% of the patients (9) had a hair shedding score of 1, 10.5% (20) of 2, 12.6 (24) of 3, 20.4% (39) of 4, 22% (42) of 5 and 29.8% (57) of 6. In 72.8% of the cases (139 patients), the ATE was active four weeks after the diagnosis. History of fever was associated (P 0.04) with an increased hair shedding (Sinclair score of 5 or 6). The use of heparinoids was not associated with severity (Fig. 1).

Acute telogen effluvium is a non-scarring alopecia characterized by significant hair shedding (i.e. more than 100 daily shed hairs) consequence of an abrupt shift from anagen (growing



Figure 1 Patient with SARS-CoV-2-induced telogen effluvium. Note the reduced hair density on the temple. 1051 × 1137 mm (72 × 72 DPI).

phase) to telogen (resting phase) of the hair follicles, which lasts <6 months.⁴ Telogen effluvium is a heterogeneous entity with numerous possible triggers such as metabolic or nutritional alterations, fever or medications. We hypothesize that in the case of SARS-CoV-2-associated TE the insult is able to induce an immediate anagen release of the hair follicles, which switch to catagen phase and subsequently enter telogen. Pro-inflammatory cytokines released during the infection context are probably the trigger of the TE although drugs (e.g. heparinoids) could also be implicated. Collected data from these patients suggest that a symptomatic SARS-CoV-2 infection is a risk factor for the development of ATE and physicians could warn patients of this possible outcome. It also should be pointed out that approximately 1 in 10 patients suffered ATE with a subclinical SARS-CoV-2 infection, and therefore, in the context of the pandemic, past SARS-CoV-2 infection should be considered in every patient consulting for ATE.

In addition, as the information regarding time of onset and severity is similar to other infection-induced ATE,⁵ it is reasonable to think that the evolution and prognosis are similar, and therefore, even without any specific treatment, full recovery of lost hair is expected.

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








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Lack of skin manifestations in COVID-19 hospitalized patients during the second epidemic wave in Spain: a possible association with a novel SARS-CoV-2 variant – a cross-sectional study

Editor

The coronavirus disease 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Skin lesions have been described in confirmed COVID-19 patients as potential manifestations of the disease.¹ Different prevalence rates have been reported in hospitalized patients from January to May 2020, ranging from 0.2% to 20.5%.^{2–5} Prevalence rates in studies where dermatologists did not perform the initial physical examination may be underestimated.^{2,5,6} A second wave of the COVID-19 epidemic has emerged in European countries starting in late August. Spain has been one of the most affected regions. However, cutaneous findings have been scarcely reported during this time period.

We designed a cross-sectional study. COVID-19 hospitalized patients, confirmed by rt-PCR, were evaluated by three independent dermatologists on 16 October 2020 at Ramon y Cajal University Hospital. Dermatological conditions not associated to COVID-19 were excluded. The required sample size to estimate de population proportion was 139 for a level of confidence of 95% and a margin of error of 5% (expected prevalence 10%). We tabulated baseline patient characteristics and used descriptive analyses on them. All analyses were done with R software (version 3.6.2).

A total of 144 patients fulfilled inclusion criteria. Mean age was 71.5 years (range, 27–99 years), and 63.9% were male. CURB-65 score for pneumonia severity had a mean value of 1.4. Thirteen patients (9.0%) received COVID-19 treatments (excluding dexamethasone). Skin manifestations associated to COVID-19 were present in five patients (3.5%), including one patient (0.7%) with maculopapular rash and four patients (2.8%) with livedoid lesions. Vesicular, urticarial and chilblain-like lesions were absent. Clinical characteristics compared with other prevalence studies are available in Table 1.

Most previous studies are based in consecutive case series or retrospective registries, with intrinsic difficulties to estimate either prevalence or incidence values. The present cross-sectional study estimates the prevalence with an adequate methodology, only including confirmed cases. We failed to detect any of the previously suggested specific COVID-19 manifestations. Mainly livedoid lesions were present, which are supposed to be related