

An Isolated Peculiar Gianotti-Crosti Rash in the Course of a COVID-19 Episode

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Since the beginning of the pandemic, various cutaneous manifestations have been reported in the setting of COVID-19 (1–5). However, virological evidence is often lacking, and some cases of skin manifestations may be isolated, making difficult to determine the link with COVID-19. Determining associations between skin manifestations and COVID-19 is of main importance in order to be able to recognize the features that should raise suspicion of SARS-CoV-2, and to avoid anxiety among patients and healthcare workers in the case of unrelated cutaneous symptoms.

We report here an exanthema evoking the Gianotti-Crosti syndrome, which developed in a young man with confirmed COVID-19.

CASE REPORT

A 23-year-old man with no medical history presented with a rash that appeared 2 days prior to examination. Three weeks prior to skin symptoms, he reported anosmia and dysgeusia together with dyspnoea and cough. A nasopharyngeal SARS-CoV-2 reverse transcriptase-PCR (RT-PCR) confirmed the diagnosis of COVID-19. All respiratory and systemic symptoms resolved spontaneously 3 days before the onset of the rash. He did not take any medications before developing skin lesions.

Skin examination revealed pruritic erythematous papules and vesicles on the patient's elbows, anterior thighs and bilateral popliteal fossa, coalescent into papular plaques (Fig. 1A). Physical examination was otherwise unremarkable. A skin biopsy was performed and patient started topical steroid treatment without

improvement. One week later, the patient returned for consultation due to extension of the primary lesions and persistent itching (Fig. 1B, C). He presented an extension of papular and erythematous lesions to the back, arms, neck, buttocks and lateral thighs. The lesions were confluent into papular plaques some of which were urticariform or annular, mainly on the elbows and shoulders. No lesions were noted on his trunk. The aspect of the lesions was evocative of Gianotti-Crosti syndrome.

A skin biopsy was performed on his left elbow during the first outpatient visit, and revealed non-specific spongiotic dermatitis consistent with Gianotti-Crosti syndrome (Fig. 2).

A complete blood cell count revealed a lymphocyte count of 0.87 g/l (normal 1.5–4.0 g/l), eosinophil count of 0.9 g/l (normal 0.05–0.5 g/l), a C-reactive protein level of 1.1 mg/l (normal 0–5 mg/l) with normal renal and liver function tests. Serological test results for HIV, hepatitis B and C, Epstein-Barr virus, cytomegalovirus and parvovirus B19 were negative or consistent with immunization without acute infection or reactivation.

Repeat RT-PCR (on day 25 after onset of symptoms) by nasopharyngeal, oropharyngeal and anal swabs was negative. RT-PCR was also performed on a fresh skin biopsy specimen, and the results were negative for SARS-CoV-2, while the serology for SARS-CoV-2 (SARS-CoV-2 IgG ARCHITECT i System; Abbot, UK) was positive (Fig. 3).

The cutaneous rash resolved within weeks with an increase in topical corticosteroids, bethamethasone, once a day.

DISCUSSION

Although skin manifestations have been reported in the setting of COVID-19, the true incidence of the different types of cutaneous involvement related to the virus are still debated. Incidence has been reported with a wide range (0.2–20%) (4, 6). Among the clinical manifestations, exanthema and chilblain-like lesions are the most frequent skin manifestations reported in the context of COVID-19; however, in more than half of cases, the diagnosis of COVID-19 is not confirmed, hence the association may be speculative in a high proportion of cases.

In the current case, the diagnosis of COVID-19 was well established by positive SARS-CoV-2 PCR and evidence for immunization using serological

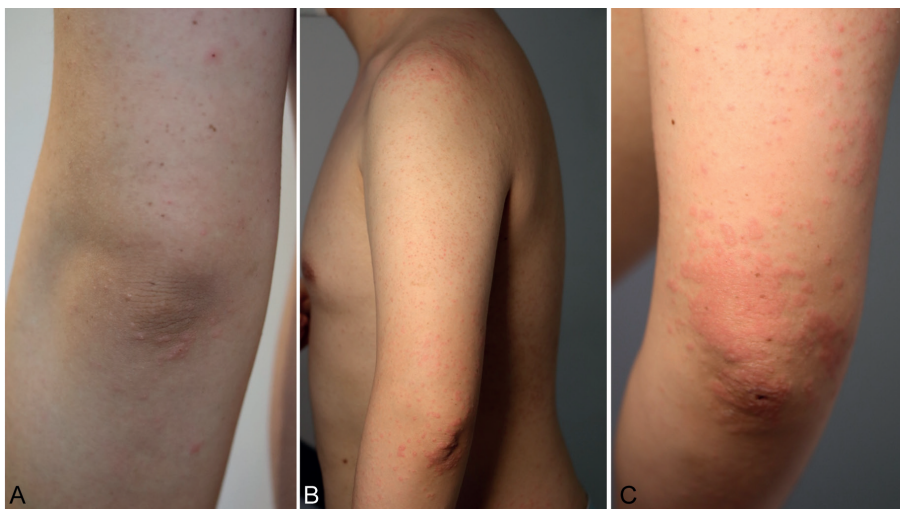


Fig. 1. Clinical presentation of the eruption on the left arm.

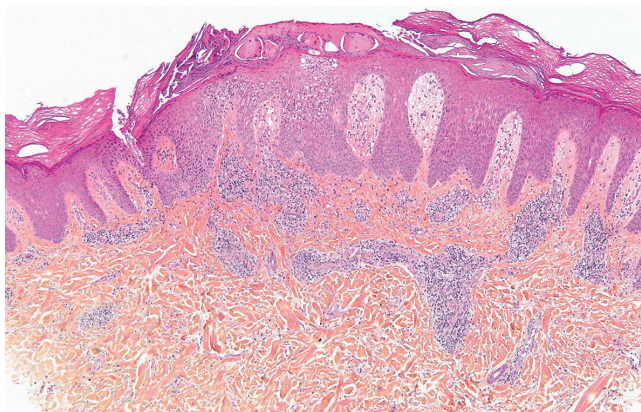


Fig. 2. Skin biopsy from the left elbow (papule). Skin biopsy showed a subacute spongiotic dermatitis with patchy parakeratosis, crusting, focal spongiotic vesiculation, acanthosis with elongation of the epidermal ridges, papillary dermal oedema and a perivascular lymphocytic infiltrate in the upper dermis. Haematoxylin erythrosine saffron stain, x40.

immunoassay. This patient had few, but specific, symptoms related to COVID-19 in the early stage, which were resolved before he developed skin lesions. Thus it is important to take a detailed history in order to recognize symptoms suspicious of COVID-19, in case the patient has not been tested by RT-PCR. Moreover, when the patient developed the rash, testing for COVID-19 RNA was negative in nasopharyngeal, pharyngeal and anal samples. This point is very illustrative of the importance of place and, notably, sensitivity of these assays, which decrease with time.

The clinical presentation in this case was also of interest as it shares common features with Gianotti-Crosti syndrome. The lesions were located mainly on the extensor aspects of the limbs and the elementary lesions, especially at the second consultation, were similar to those described in Gianotti-Crosti syndrome. To our knowledge, this is the first published observation of Gianotti-Crosti syndrome in the setting of SARS-CoV-2 infection.

Gianotti-Crosti syndrome mainly affects infants and young children and, more rarely, young adults (7, 8). This syndrome has been described in association with various viral infections, but the pathogenesis remains poorly understood. It is generally recognized as a monomorphic rash, with papules or papulovesicles occurring mainly on the extensor aspect of the limbs. The lesions can persist for several weeks and are itchy. In this case, the rash occurred after resolution of the initial COVID-19 symptoms and 3 weeks after the onset of infection.

This case report serves as a warning of the possibility that Gianotti-Crosti syndrome may be a late manifestation of COVID-19.

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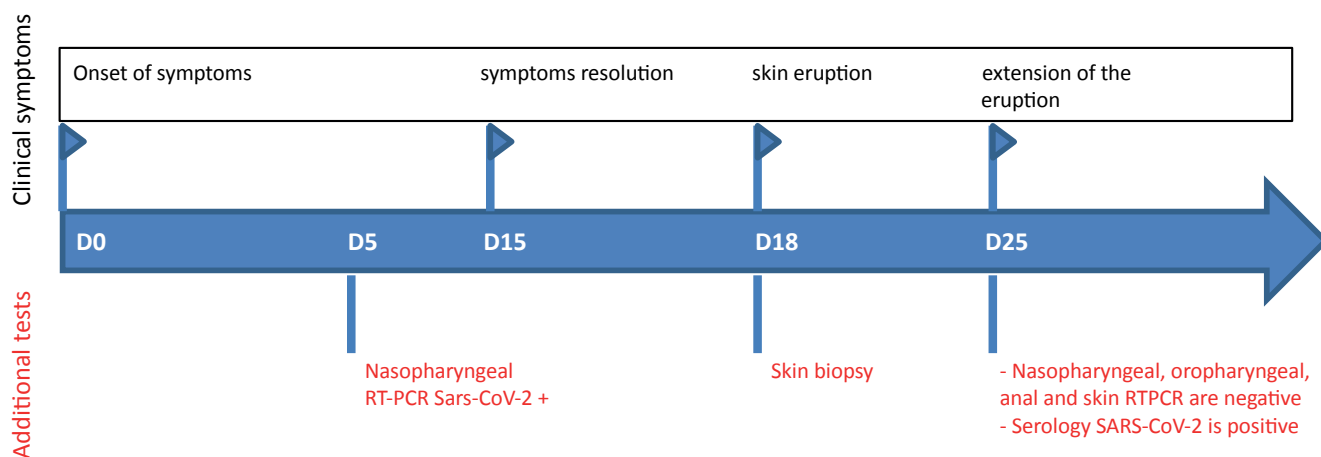


Fig. 3. Correlation between clinical symptoms and virological tests. D: day.