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Erythema nodosum following the first dose of ChAdOx1-S nCoV-19 vaccine

Editor

We present a case of erythema nodosum to ChAdOx1 nCoV-19 vaccine in a 64-year-old woman. The female patient complained of painful and erythematous skin lesions on both lower limbs 2 days after receiving the first dose of ChAdOx1 nCoV-19 vaccine (Fig. 1). Physical examination revealed erythematous plaques on pretibial surfaces, painful on palpation and compatible with the diagnosis of erythema nodosum (EN). The patient had no comorbidities except for heterozygous factor V Leiden mutation.

Laboratory and instrumental examinations performed to investigate the aetiology of EN resulted negative and included blood count, erythrocyte sedimentation rate, C-reactive protein, Mantoux test, antistreptolysin antibodies, viral hepatitis and HIV tests, angiotensin-converting enzyme, screening for connective tissue diseases and vasculitis, and chest X-ray. No skin biopsy was performed due to the classic clinical presentation of EN, which allowed for clinical diagnosis. Systemic therapy with methylprednisolone 16 mg was started with symptom improvement within 4 weeks.

The patient had no personal or family history of systemic or skin diseases and had not taken any drug related to the development of EN; therefore, it was hypothesized a causal correlation between COVID-19 vaccination and the appearance of skin manifestations.



Figure 1 Erythema nodosum on the left leg.

EN is a panniculitis characterized by acute-onset inflammation of the dermo-hypodermic junction and interlobular septa of the hypodermic tissue; it can be idiopathic or associated with various clinical conditions such as infections, medications, pregnancy, inflammatory bowel diseases, sarcoidosis, autoimmune diseases and malignancies. The pathogenesis is unknown, but a delayed type IV hypersensitivity reaction to certain antigens is hypothesized.¹

EN has been described as cutaneous manifestation of COVID-19 infection in many patients; the relationship between COVID-19 and EN can be explained by a dysregulated immune response induced by viral infection that can trigger the cutaneous manifestation.²

In the case described, the patient's clinical history and the temporal association between the administration of the first dose of ChAdOx1 vaccine and the onset of EN were compatible with the diagnosis of ChAdOx1 nCoV-19 vaccine-related EN. ChAdOx1 nCoV-19 consists of two doses given with an interval of 4–12 weeks and involves the production of antibodies to the spike protein.³ The main side-effects reported were injection site pain, malaise, headache, fatigue, myalgia, pyrexia, chills, arthralgia and nausea, usually mild to moderate and self-limiting. Moreover, reports of thromboembolic events in young females have been reported and led to temporary suspension of ChAdOx1 nCoV-19 vaccine.⁴

The most common cutaneous adverse events reported after ChAdOx1 nCoV-19 vaccine were reactions at the injection site such as pain, redness, warmth, swelling, induration and tenderness⁵; delayed inflammatory reactions,⁶ severe cellulitis, rosacea, psoriasis, vitiligo and Raynaud's phenomenon were also reported.⁷

The occurrence of EN after vaccination is rare, but has been reported in the literature after vaccination for hepatitis B, human papillomavirus, cholera, malaria, rabies, small pox, tuberculosis, typhoid and Tdap. The pathogenesis of EN secondary to vaccinations is unclear, but a reaction to antigens of the infectious agent, or a hypersensitivity reaction to components of the vaccine, has been hypothesized.⁸

To our knowledge, this is the first report of EN occurring after vaccination with ChAdOx1 nCoV-19 vaccine and should be investigated whether the immune response to the vaccine could trigger the onset of this cutaneous manifestation, as it has been suspected after COVID-19 infection; recognition of emerging skin reactions to vaccines by physicians, in particular dermatologists, is fundamental for patient adherence to COVID-19 vaccination and therefore for the success of the vaccination strategy.

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Conflict of interest

The authors declare that they have no competing financial interests or other potential conflict of interests.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Regression of common viral warts after ChAdOx1-S COVID-19 vaccine

Editor

A 28-year-old woman (phototype III), with hypothyroidism (treated by levothyroxine 50 µg), presented to a dermatology outpatient clinic due to viral warts (Fig. 1a). The first lesion appeared two years before on the right thumb. Since that time, the patient has tried self-treatment methods including mechanical removal of hyperkeratotic masses and over-the-counter freezing spray, with further appearance of new lesions.

In March 2021, the lesions became painful, which made the patient to visit a dermatologist. In the period when she was awaiting a medical consultation, she got two doses of vaccination against COVID-19 (ChAdOx1-S). At the turn of March and April 2021, after the first vaccine dose, the patient experienced increased hair loss, which lasted till the end of May 2021. After receiving the second vaccine dose, hair loss episode reoccurred, with even higher intensity, due to that 2 weeks after the second vaccination dose, the patient started taking biotin. Additionally 3 weeks after vaccination and the week after she started taking biotin, the changes in viral warts were observed including severe pain associated with crust formation, which preceded their clinical resolution. Approximately 4 weeks after the second vaccine dose, all viral warts disappeared completely.

Besides skin lesions associated with COVID-19 infection, there is growing evidence on the relation between COVID-19 vaccine and its cutaneous adverse effects.¹ There have been reports on local site reactions, urticaria, morbilliform rash, pernio, pityriasis rosea, erythema multiforme, erythromelalgia, lichen planus, varicella-zoster and herpes simplex reactivation, which occurred after the vaccination.²

Despite viral warts may affect 7%–12% of the general population, we are unaware of any previous reports concerning their