

LETTER TO THE EDITOR

Erythema nodosum following SARS-CoV-2 vaccine

Dear Editor,

A 33-year-old woman without any previous history, who had receiving third dose of the inactive vaccine (Sinopharm [Vero cell]-inactivated, COVID-19 Vaccine), presented with one-month history of erythematous nodules with pain on both legs. The cutaneous lesions started 4 days after the second dose. She developed injection site reaction after first dose. When the second dose was injected, she developed acute urticaria and went to the emergency department for intravenous dexamethasone. She denied systemic diseases, medication history and medicine or food allergic history. The patient said that she had no recent illnesses, including COVID-19 respiratory symptoms, and had not used any other prescription or over-the-counter medication before the onset of symptoms. Physical examination revealed erythema nodosum to both legs (Fig. 1). Laboratory tests including blood routine, hepatic and renal function, erythrocyte sedimentation rate, the spectrum of antinuclear antibodies and T-spot were normal or negative. Histological analysis of incisional cutaneous biopsy taken from the patient's left leg showed (Fig. 2): infiltration of dermal and subcutaneous adipocytes with Lymphocytes. The patient was diagnosed with erythema nodosum and treated with intravenous compound glycyrrhizin, oral ibuprofen codeine sustained tablets and topical corticosteroids. The symptoms were completely relieved after 1 week and the pigmentation remained on both legs after 3 weeks.



Figure 1 Erythema, nodules on the legs.

Erythema nodosum is an acute inflammatory disease that mainly involves subcutaneous adipose tissue and usually occurs in young women. The lesions are distributed preferentially on the extensor aspect of the lower leg with red or purplish-red painful inflammatory nodules. Potential triggering factors of erythema nodosum include infections (especially *Mycobacterium tuberculosis* infection), drugs (containing vaccine) and some autoimmunity diseases.

According to the National Health Commission of China, a total of 3.1 billion doses of SARS-CoV-2 vaccines have been reported as of 12 March 2022. Urticaria, injection site reaction and morbiliform rash were widely recognized as the three most common reported cutaneous adverse reactions and did not usually require special treatment.¹ Rare vaccination events are reported such as Sweet syndrome, pityriasis rubra pilaris, pityriasis lichenoides et varioliformis acuta, generalized pustular psoriasis and erythema multiforme.^{2,3} There were four cases about erythema nodosum after SARS-CoV-2 vaccine⁴⁻⁷: two were adenovirus vaccine,^{4,5} one was mRNA vaccine⁶ and one was recombinant subunit vaccine.⁷ Here, we reported a case of erythema nodosum related to the inactivated vaccine. All patients developed rashes within 1 week of vaccination, and the rash was mainly distributed in the anterior tibial area of both calves. Usually, the skin reactions of erythema nodosum were extremely rare and mild. Exactly we found the benefits of the vaccines outweigh the risks.

Erythema nodosum was associated with infections, autoimmune-related diseases, medications and pregnancy. However, vaccine-related erythema nodosum was rare, and the pathogenesis of vaccine-associated erythema nodosum remained unknown. The female we reported used the same vaccine each time, but the

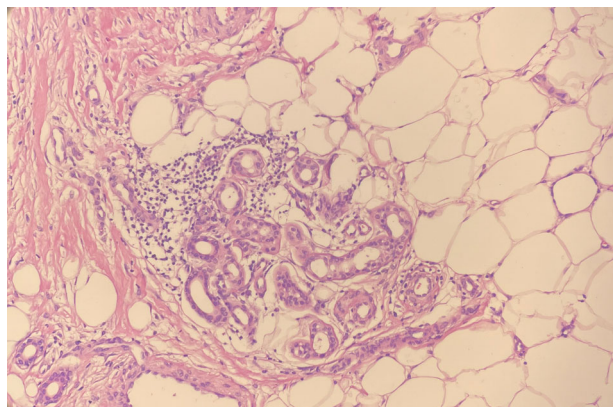


Figure 2 (HE × 200) Infiltration of dermal and subcutaneous adipocytes with Lymphocytes.

skin reaction was different each time. We reported this interesting phenomenon to raise awareness of adverse reactions to COVID-19 vaccines.

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The patients in this manuscript have given written informed consent to the publication of their case details.

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Conflicts of interest

None.

Data availability statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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