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Medical Imagery

A localised vasculitic-like skin rash following the second dose of COVID-19 vaccine

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ARTICLE INFO

Article history:

Received 14 October 2021

Revised 19 October 2021

Accepted 1 November 2021

Since December 2020, a number of different types of COVID-19 vaccines have been developed to limit the spread of the pandemic [Jedlowski et al., 2021]. Although there have been reported side effects and adverse reactions to COVID-19 vaccines, they are still considered safe as the benefits of halting the spread of the virus and reducing the severity of COVID-19 infection outweigh the risks. Skin rash and reactions have been reported as possible side effects associated with different types of COVID-19 vaccines. Almost 20% of vaccinated participants in Saudi Arabia developed a skin rash after receiving the AstraZeneca vaccine [Al Bahrani et al., 2021]. Herein we present a 45-year-old female patient who is usually fit and healthy with no previous history of drug or vaccine allergy and who presented with a skin rash that developed three days following the second dose of AstraZeneca vaccine. It was described by the patient as non-itchy red spots which involve both legs. The patient did not report any other symptoms, such as fever, sore throat, cough, flu-like symptoms, redness at the injection site, pruritis, joint pain, abdominal pain, or change in the colour of the urine. The patient had the first dose of the vaccine two months ago, and apart from temporary shivering, she felt fine afterwards and did not develop any skin reactions. Vital signs on admission (respiratory rate 15, oxygen saturation 98% on room air, temperature 36.2, blood pressure 118/59 and pulse 87). Physical exam revealed a red, raised, palpable and non-blanchable skin rash (most likely purpuric rash) localised mainly on the extensor surface of both legs (figure 1). The rash does not extend above the knee

level, and no rash was seen elsewhere on the body. The rest of the physical exam was normal. A urine dipstick did not show any evidence of proteinuria or haematuria. There were no signs of lung cavitation or haemorrhage on chest X-ray. Blood workup was unremarkable, including full blood count, urea and electrolytes, liver function test, C-reactive protein, coagulation profile, and vasculitis screen. The patient was discharged home 24 hours after the hospital admission on a short course of oral prednisolone.

Unlike our case who developed a purpuric rash, a petechial rash has been reported one day following the first dose of Sino-vac COVID vaccine [Cebeci et al., 2021]. A generalised purpuric skin rash in association with thrombocytopenia has been reported in a 60-year-old male patient a few days after receiving the first dose of the Moderna vaccine [Malayala et al., 2021]. In our case the purpuric skin rash was localised to the lower limbs, and the platelet count was normal. Interestingly, two patients developed systemic vasculitis affecting the kidneys after the first dose of the Moderna vaccine [Anderegg et al., 2021]. In our case, we believe that the patient developed a post-vaccination localised cutaneous vasculitic-like reaction. In conclusion, the main learning points from our case are, firstly, a localised cutaneous vasculitic-like reaction on the non-injected limbs without associated systemic manifestations might be considered a possible side effect of the AstraZeneca vaccine. Secondly, this skin reaction can develop after the second dose even with no history of previously reported dermatological reactions following the administration of the first dose.

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Figure 1. Purpuric skin rash on both legs developed following the second dose of AstraZeneca vaccine

Declaration of Competing Interest

The authors declare that they have no conflict of interest

Funding

No financial or nonfinancial benefits have been received or will be received from any party related directly or indirectly to the subject of this article

Acknowledgment

The patient in this manuscript has given written informed consent to publish her clinical case details.

References

- Al Bahrani S, Albarrak A, Alghamdi O, Alghamdi M, Hakami F, Al Abadi A, et al. Safety and Reactogenicity of the ChAdOx1 (AZD1222) COVID-19 Vaccine in Saudi Arabia. *Int J Infect Dis* 2021;110:359–62.
- Anderegg M, Liu M, Saganas C, Montani M, Vogt B, Huynh-Do U, et al. De novo vasculitis after mRNA-1273 (Moderna) vaccination. *Kidney Int* 2021 <https://doi.org/doi:10.1016/j.kint.2021.05.016>.
- Cebeci F, Kartal İ. Petechial skin rash associated with CoronaVac vaccination: first cutaneous side effect report before phase 3 results. *Eur J Hosp Pharm* 2021 [ejpharm-2021-002794](https://doi.org/doi:10.1016/j.ejpharm.2021-002794).
- Jedlowski P, Jedlowski M. Morbilliform rash after administration of Pfizer-BioNTech COVID-19 mRNA vaccine. *Dermatol Online J* 2021;27(1) <https://doi.org/doi:10.5070/D3271052044>.
- Malayala S, Mohan G, Vasireddy D, Atluri P. Purpuric Rash and Thrombocytopenia After the mRNA-1273 (Moderna) COVID-19 Vaccine. *Cureus* 2021. [doi:10.7759/cureus.14099](https://doi.org/doi:10.7759/cureus.14099).