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CLINICAL IMAGE

Emergence of de novo cutaneous vasculitis post coronavirus disease (COVID-19) vaccination

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Presentation

A 62-year-old Asian female presented to the Emergency Department with a bilateral lower limb non-blanching petechial rash 7 days after the first dose of the ChAdOx1 nCoV-19 vaccine (Astra-Zeneca) COVID-19 vaccination (Fig. 1A). Her symptoms were associated with a generalised headache, myalgia, and symmetrical large joint arthralgias. She was afebrile, had no appreciable synovitis, and the rest of the physical examination was unremarkable.

Her haematological and biochemical pathology profiles were unremarkable including preserved renal function. Urinalysis revealed trace leukocytes, haemolysed blood but with no dysmorphic red blood cells on microscopy. A spot urine protein:creatinine ratio was within normal limits. Her CRP was 31 mg/L (< 5). An autoimmune workup revealed a low-titre antinuclear antibody (1:80 speckled), no anti-extractable nuclear antigen antibodies, no anti-neutrophil cytoplasmic antibodies (ANCA), and raised rheumatoid factor (169 IU/mL [< 20]) with depressed C4 complement (< 0.07 g/L). Cryoglobulins and anti-cyclic citrullinated peptide antibodies were not detected. An infectious screen including hepatitis and syphilis serologies was unremarkable.

A CT pulmonary angiogram did not reveal pulmonary emboli, and an MRI brain venogram did not demonstrate a cerebral sinus venous thrombosis. Skin punch biopsies revealed perivascular acute inflammation (Fig. 1B) with C3 and fibrinogen deposition in the superficial dermal vessels on immunofluorescence microscopy (Fig. 1C, D), consistent with a leukocytoclastic vasculitis. The patient was commenced on a rapid tapering course of oral prednisolone to good resolution and improvement in her symptoms, rash, and pathology tests. No underlying systemic autoimmune disease was established.

Discussion

There have been numerous reports in literature where vaccines such as the influenza and the Bacille Calmette-Guerin vaccines have resulted in vasculitis as an adverse reaction [1]. Reports also exist where the COVID-19 vaccination has caused a flare of pre-existing leukocytoclastic vasculitis [2] and the development of IgA vasculitis in a patient with prior COVID-19 illness [3]. The exact aetiology of post-vaccination vasculitis is unknown, but risk factors include genetic, immunological, hormonal, and environmental factors [4]. Whilst the vaccine was certainly contributory to the development of vasculitis in this patient, it is possible that it was triggered in an already immunologically predisposed individual [5]. It is therefore important that clinicians are aware that vasculitis can be a possible adverse reaction to the ChAdOx1 nCoV-19 vaccine, both de novo and pre-existing.

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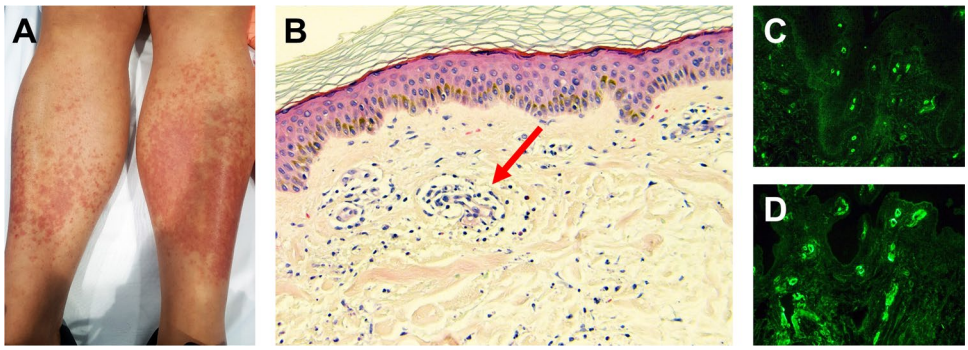

Fig. 1 Leukocytoclastic vasculitis following coronavirus (COVID-19) vaccination. Non-blanching bilateral lower limb vasculitic rash (**A**). On microscopy, perivascular inflammation was noted (arrow) (**B**) with deposition of C3 complement (**C**) and fibrinogen (**D**) in the superficial dermal vessels. Micrographs are taken at 100 × magnification

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Declarations

Ethics approval and consent to participate Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Disclosures None.

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