

Correspondence

Marie Antoinette syndrome following COVID-19 vaccination

Dear Editor,

We read with interest the case of alopecia areata following COVID-19 vaccination recently reported by Lee and colleagues.¹ Here we would like to share a previously unreported case of alopecia areata (AA) following Pfizer/BioNTech BTN162b2 vaccination presenting as Marie Antoinette syndrome.

In September 2021, a 39-year-old Caucasian woman was referred to our department for a sudden graying of the hair, which was rapidly followed by diffuse hair loss. The process started 4 days after the first dose of BTN162b2 vaccine. The patient did not have a history of pre-existing AA or other

autoimmune conditions; there was no history of recent trauma or infectious disease.

Physical examination showed a widespread hair loss in the central area of the scalp and at the vertex (Fig. 1a–c); moreover, nail pitting was observed (Fig. 1d).

After the second vaccine dose, the alopecic area considerably enlarged. Clinical presentation was consistent with a diagnosis of Marie Antoinette syndrome, a rare variant of alopecia areata. The patient was treated with a tapering course of oral prednisone and topical clobetasol 0.05% foam.

After 4 weeks of treatment, trichoscopy showed a few exclamation mark hairs and yellow dots on a background of regrowing hair, which also displayed an initial restoring of the original hair pigmentation (Fig. 1e).



Figure 1 Three months before the occurrence of AA, the patient did not show any hair alteration (a); 4 days after COVID-19 vaccination, the patient developed prominent hair loss in the central area of the scalp and sudden graying of the hair (b, c) together with nail pitting (d). Trichoscopic examination showed yellow dots, newly growing hair, and exclamation mark hairs (e). After 6 weeks of therapy, regrowth was almost complete (f)

After 6 weeks of therapy, the patient showed almost complete regrowth with partial repigmentation of the hairs (Severity of Alopecia Tool [SALT] score pre-treatment: 46.2%; SALT score after treatment: 5.2%) (Fig. 1f). No recurrence was observed after 6 months of follow-up.

In this patient, (i) the short latency time between the onset of AA and vaccination, (ii) disease worsening following the second vaccine dose, and (iii) the prompt recovery after therapy strongly suggest vaccination as a trigger.

After a thorough review of the PubMed literature, we found a total of 14 patients diagnosed with alopecia areata following COVID-19 vaccines.^{1–4} Published cases showed a clear female predominance and a mean age of 42.8 years (range 15–80 years). Eleven out of 14 cases were reported following mRNA vaccines while only three were linked to ChAdOx1 nCoV-19 vaccine (Oxford/AstraZeneca). Personal or family history of AA was considered as an important risk factor³ and was present in eight patients.

The latency time between vaccine administration and onset of alopecia areata ranged from a few days to 4 months; however, only four had a latency time shorter than a week.

In 10 cases, hair loss was described as “widespread” and “rapidly progressive”; two of these were diagnosed with alopecia universalis. Four cases presented with classical well demarcated patches, two of them following ChAdOx1 nCoV-19 vaccine (Oxford/AstraZeneca).^{2,4} Except for the case following BNT162b2 vaccine described by Lee and colleagues, in which the patient showed no response after one month of therapy with topical steroids and immunotherapies,⁵ the other patients demonstrated improvement after different treatment modalities, including tofacitinib. However, no data about long-term follow-up were reported. Despite the severity of the clinical presentation, our patient showed a remarkable clinical improvement following topical and oral steroid therapy without recurrence.

As far as we are aware, none of the published work reported alterations of hair pigmentation in COVID-19 vaccine-induced alopecia areata. Our case is the first showing the peculiar features of Marie Antoinette syndrome, a rare variant of AA characterized by a sudden (“overnight”) graying of the scalp hair presumably due to a preferential loss of pigmented hair.⁶

To conclude, alopecia areata occurs most frequently after mRNA vaccines against SARS-CoV-2; it presents mostly with

widespread hair loss rather than classic patches. Studies reporting long-term follow-up of the patients are needed to better characterize the outcome of this rare adverse event.

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The patient in this manuscript has given written informed consent to publication of her case details.

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