

Comment on “Multibacillary leprosy unmasked by COVID-19 vaccination”



To the Editor: We read the article by Aponso et al¹ with great interest. However, there are a few concerns related to diagnosis, immunologic aspects, and management that need to be discussed.

In the index case, the presence of madarosis^{2,3} and diffuse nodular infiltration of the earlobes suggest a long-standing disease belonging to the lepromatous group on the leprosy spectrum. In the case description, the authors have neither mentioned the details of sensory and motor examination nor specified where on the spectrum of leprosy the disease belonged or the type of leprosy reaction. Regarding management, the authors have neither provided details about the initial dose of prednisolone prescribed for reaction nor have they provided the reason for excluding clofazimine from standard World Health Organization—recommended alternate multidrug therapy.⁴

The authors have stated that the patient had a history of COVID-19 and urticaria 6 months prior to presentation. The lesions resembling urticaria could also be seen in type 2 reaction or erythema nodosum leprosum (ENL). The presence of acute-onset joint pains and swellings also supported the diagnosis of ENL, though there is no mention of other constitutional symptoms, including fever. Histopathologic details, such as the type of inflammatory cells, the presence of vasculitis or edema in the dermis, and bacterial load, could have aided in confirming the type of lepra reaction. Such an acute presentation after COVID-19 vaccination in a patient with multibacillary leprosy probably represents the exacerbation of type 2 leprosy reaction (ENL). Type 1 reaction generally occurs in borderline and nonpolar lepromatous leprosy because of the activation of cell-mediated immunity against *Mycobacterium lepra* antigens, whereas type 2 reaction (ENL) is frequently encountered in the lepromatous group of the leprosy spectrum with strong humoral immunity, suggesting the role of an immune complex and neutrophils in its immunopathogenesis. The plausible pathomechanism of exacerbation of type 2 reaction after immunization in a patient previously infected with severe acute respiratory syndrome coronavirus 2 has been

proposed to be because of the activation of neutrophils leading to the release of proinflammatory cytokines.⁵ Several studies have shown that an increase in the CD4-to-CD8 ratio has also been observed in both skin lesions and peripheral blood of patients with ENL, suggesting the role of T cells.⁶ Hence, T cell upregulation induced by the COVID 19 vaccine may result in an exacerbation of type 2 reaction.⁷ This patient appears to be in the lepromatous group of the spectrum of the disease, hence the plausibility of type 1 reaction seems unlikely because of the features mentioned in the report, such as symmetrical edema of both hands and feet (not evident in the clinical image provided), joints pain, nodular lesions on the ear lobes, and conjunctival injection, which are more suggestive of type 2 reaction. To date, there are only a few published reports of aggravation of type 2 lepra reaction (ENL) after COVID 19 vaccinations.^{5,8}

Hence, we believe that this patient appears to be a case of lepromatous leprosy with a type 2 lepra reaction aggravated after COVID-19 vaccination. It is again important to emphasize that these COVID-19 vaccine—exacerbated lepra reactions are rare and can be easily managed. Hence, patients should be encouraged to get vaccinated to protect them from COVID-19.

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Conflicts of interest

None disclosed.

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