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Case Report

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Amyopathic dermatomyositis induced by the COVID-19 vaccination

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Introduction

Covid 19 vaccination have been employed to control the ongoing SARSCoV-2 pandemic and reduce the number of subsequent COVID-19 cases. Cutaneous reactions after SARS-CoV-2 vaccination are heterogeneous such as Immune-Mediated Diseases (IMD) that can flares or appeared after SARS-CoV2-vaccination. We report the first case, to the best of our knowledge, of amyopathic dermatomyositis secondary to COVID-19 Vaccine, which has been proved by clinical, paraclinical and pharmacological arguments. Hence, we should be aware of their possible side effects.

Case description

A 60-year-old woman, with non significant past medical history, admitted to our department for a pruritic photo disposed eruption appeared 5 days after receiving her second dose of the Covid 19 vaccine Astrazeneca. It stared on the hands and the neck with secondary extension to the face and forearms, associated with photosensitivity and Raynaud's phenomenon. All evolving in a context of feverish sensations.

Dermatological examination revealed a facial erythroedema, flagellate erythema on the neck, Goutron's papules regarding the interphalangeal spaces and erythematous patches on the extension faces of the forearms. Nails examination showed periungualerythema, trachyonychia and cuticular overgrowth.

Nail dermoscopy showed mega-capillaries, flame-shaped hemorrhage, trachyonychia and areas with avascular structures indicating nail hypoperfusion.

Neuromuscular examination showed normal gait, maintained muscle strength with moderate myalgia caused by mobilization of the arms.

Laboratory tests found raised muscle enzymes such as Serumcreatine Kinase (CK), lacticodehydrogenase, aldolase, Serum glutamic oxaloacetic Transaminase (SGOT). Immunological assessement revealed positive anti Mi-2 antibodies and antinuclear antibodies. The electroneuromyography showed a myogenic syndrome. Pan-CT scan did not reveal evidence for solid organ malignancies or interstitiallung disease. Skin biopsy showed keratinocyte necrosis. Pharmacological investigation proved the imput ability of Covid 19 vaccine with high score.

Diagnosis of amyopathic dermatomyositis was retained in front of typical dermatological symptoms of DM, subclinical myositis with elevated muscle enzymes and myogenic syndrome on EMG. Vaccination induction has been concluded in view of pharmacological findings, compatible delay, pruritus and keratinocyte necrosis shown on skin biopsy.

Patient was treated by hydroxychloroquine 400 mg/d and Prednisone 1 mg/kg/d with improvement of cutaneous symptoms and decrease in muscle enzymes.

Discussion

The global impact of COVID-19 pandemic has generated major and urgent interest in the development of vaccination, in order to prevent and reduce the spread of the disease. However, almost all types of vaccines have been reported to be associated with adverse events.

Dermatomyositis is a rare inflammatory disease that is often severe in terms of its spontaneous evolution, its functional repercussions, its possible association with cancer and the complications induced by the treatment [1]. Amyopathic dermatomyositis represents 5 to 10% of the disease [1], characterized by absent or minimal muscle involvement, with slightly elevated muscle enzymes, ultrasound or muscle MRI may show subclinical abnormalities.

Cases of Induced-dermatomyositis have been previously reported in the literature by different drugs and vaccines, like the forms developed after the H1N1 vaccine, trivalent influenza vaccine, and HBV or Hepatitis B vaccination [2].

Covid 19 vaccine also finds its place in the induction of this autoimmune disease, but the documented cases were classic forms of dermatomyositis. To our knowledge, this is the first report of a Astrazeneca vaccine-induced amyopatic dermatomyositis.

The occurrence of DM after vaccination can be explained by the homology that exists between the components of the vaccine and the muscle antigens, responsible for immunological dysregulation and triggering of autoimmune response. On the other hand, DM is reported among the manifestations of myopathies induced by Covid 19 infection. It has been hypothesized that SARSCoV-2 may transfer its genetic material into the muscle fibers, this triggering a T cell-mediated viral response leading to muscle damage. In addition, three different T cell receptor epitopes highly specificfor SARS-COV-2 have been detected in dermatomyositis patients. These findings reinforce the hypothesis of molecular mimicry [3].

There are two cases reported in the literature of classic dermatomyositis with very obvious muscular involvement. Adrian Y reported a case of anti-NXP2 dermatomyositis induced by Pfizer vaccine [4] and P. Ajdinaj documented a case of DM induced by Vaxzevria vaccine [3]. The two DMs appeared after the second dose of the vaccine as in the case of our patient, with a delay of 2 weeks and 3 weeks respectively. Our patient developed the disease earlier; 5 days after receiving her second dose of the Astrazeneca vaccine.

Regarding histopathology, skin biopsy was made as part of the differential diagnosis of DM, showed findings consistent with dermatomyositis with significant keratinocyte necrosis; the latter was a strong argument for the induced nature of the disease, taking into account that our patient did not take any medication before the onset of her disease apart from her vaccination.

Regarding treatment, hydroxychloroquine is the first-line molecule used in the treatment of amyopathic DM [1]. Our patient received hydroxychloroquine 400 mg daily and systemic corticosteroids therapy Prednisone 1 mg/kg/d with good clinical response and significant decrease in muscle enzymes; However, in the two cases of classic DM induced by covid 19 vaccine, patients were treated with boluses of intravenous methylprednisolone, this because of severe muscle damage.

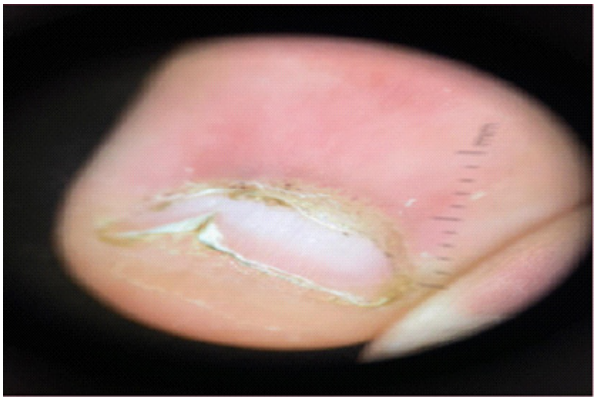

Figure 1:

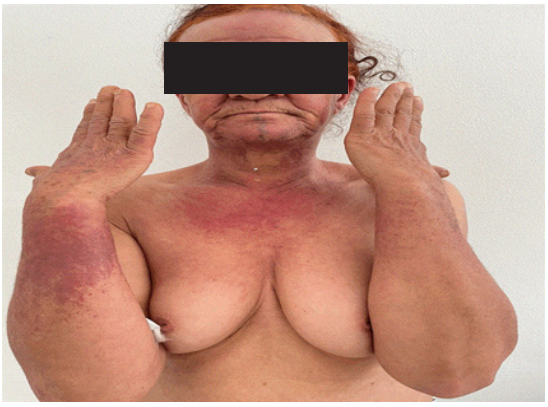

Figure 2:

Conclusion

This report clarified a rare and significant skin-muscle side effect of the COVID-19 vaccine. The clinical signs, paraclinical features, compatible delay and pharmacological data approved diagnosis of amyopathic deramtomyositis secondary to Astrazeneca COVID-19 vaccine. Future case reports are needed to provide a better overview of these immunological disorders which should not discourage vaccination against a potentially deadly virus.

References

1. B Lioger, C Lavigne, L Machet. EMC. Deramatomyosite. 2019; 1-6.

2. RODRIGUEZ-PINTÓ, Ignasi et al. SHOENFELD, Yehuda. Myositis and Vaccines. Vaccines and Autoimmunity. 2015; 349-358.

3. Ajdinaj P, Ferri L, Rispoli Mg, et al. COVID-19 vaccine and dermatomyositis: Is there an association?. Acta Myologica. 2021; 51-52.

4. LEE, Adrian YS, LEE, Caroline, BROWN, David A, et al. Development of anti-NXP2 dermatomyositis following Comirnaty COVID-19 vaccination. Postgraduate Medical Journal. 2022.