RHEUMATOLOGY ADVANCES IN PRACTICE

Rheumatology Advances in Practice 2021;00:1
https://doi.org/10.1093/rap/rkab103
Advance Access Publication 15 December 2021

Clinical vignette

Inverse Gottron's papules and mechanic's hands after a tug of war: triggered by friction and pressure?

A 31-year-old female presented with 4-week history of painful rashes on the hands. Six weeks ago, she had been involved in a tug of war, after which she experienced a burning sensation in her palms, followed by papules developing on her hands. On examination, hyperkeratotic, scaling, fissuring lesions (mechanic's hands) were observed on her fingertips (Fig. 1A and B) and the lateral sides of her fingers (Fig. 1C). On the flexor aspects of the IP joints, tender, hyperkeratotic, dusky red papules were noted, most of which manifested as two separate papules on either side of the joint (Fig. 1D), consistent with inverse Gottron's papules. Physical examination also showed Gottron's papules over the elbow (Fig. 1E). She reported shortness of breath for 1 week and denied any muscle weakness.

Laboratory analysis was notable for positive anti-melanoma differentiation-associated gene 5 (MDA5) antibodies. Serum creatine kinase, malignancy screen and electromyography were normal. Interstitial lung disease was confirmed in high-resolution computed tomography. A diagnosis of anti-MDA5 DM was thus made. She was managed with glucocorticoids and tacrolimus, with which her symptoms improved.

Fig. 1 Clinical manifestations of the patient

(**A–C**) Mechanic's hands. (**D**) Aligned hyperkeratotic, palmar dusky red papules with a few areas of ulceration, referred to as inverse Gottron's papules. (**E**) Erythematosous and fissured papules over the elbow.

Stretch and movement have been implicated in the pathogenesis of DM [1, 2], but do not receive much attention. In the present case, the strong temporal association and the distribution of papules suggested such movement as a precipitating factor. The minor injuries caused by the friction and pressure might act with, or result in, autoimmunity to promote new-onset DM in genetically susceptible individuals.

Acknowledgements

The patient in this manuscript has given written informed consent to publication of their case details, which we really appreciate.

Funding: No specific funding was received from any bodies in the public, commercial or not-for-profit sectors to carry out the work described in this article.

Disclosure statement: The authors have declared no conflicts of interest.

Data availability statement

Data are available upon reasonable request by any qualified researchers who engage in rigorous, independent scientific research, and will be provided following review and approval of a research proposal and Statistical Analysis Plan (SAP) and execution of a Data Sharing Agreement (DSA). All data relevant to the study are included in the article.

Hanlin Yin[1,*], Bei Liu[1,*] and Liangjing Lu[1]

[1]*Department of Rheumatology, Ren Ji Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China*

Correspondence to: Liangjing Lu, 145 Middle Shandong Road, Shanghai 200001, China. E-mail: lu_liangjing@163.com
*Hanlin Yin and Bei Liu contributed equally to this paper.

References

1 Kim JS, Bashir MM, Werth VP. Gottron's papules exhibit dermal accumulation of CD44 variant 7 (CD44v7) and its binding partner osteopontin: a unique molecular signature. J Invest Dermatol 2012;132:1825–32.

2 Kurtzman DJB, Ho A, Wright NA, Rubenstein MH, Vleugels RA. Unilateral Gottron papules in a patient following a stroke: clinical insights into the disease mechanisms and pathophysiology of cutaneous dermatomyositis. JAMA Dermatol 2016;152:1062–3.