Dermatology Practical & Conceptual

Unilateral Rosacea in a Patient With Multiple Sclerosis

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Written Consent from the patient: The authors certify that they have obtained all appropriate patient consent forms, in which the patient gave his consent for images and other clinical information to be included in the journal. The patient understands that his name and initial will not be published and due effort will be made to conceal his identity, but that anonymity cannot be guaranteed.

Introduction

Rosacea is a common and chronic inflammatory skin condition of clinical heterogeneity and intriguing pathophysiological mechanisms. Herein, we report a case of unilateral rosacea in a patient with multiple sclerosis.

Case presentation

A 37-year-old woman presented to the dermatology department with a 2-year history of facial unilateral redness and paroxysmal pain. Over the last 2 years, she received multiple treatments, such as ivermectin cream, doxycycline and metronidazole gel, without any benefit. Her facial dermatosis presented as unilateral persistent erythema with multiple papules and pustules strictly confined to the right side (Figure 1). The skin biopsy revealed a perivascular and perifollicular inflammatory infiltrate consisting of lymphocytes, neutrophils with the presence of demodex mites, compatible with rosacea. The unilateral distribution of the dermatosis was suggestive of pre-existing neurological lesion. We referred the patient for additional testing, including an MRI of the brain, which demonstrated a demyelinating plaque at the trigeminal root entry zone consistent with trigeminal neuralgia secondary to multiple sclerosis (Figure 2). She was put on natalizumab and bolus steroid therapy. The pain has decreased. However, the rosacea got worse, probably because of corticosteroids.

Conclusion

Despite its high prevalence, the underlying pathophysiology of rosacea remains unclear. This observation highlights the complexity of the disease contributing mechanisms. Indeed, it describes a distinct variant of the disease denominated neurogenic rosacea, presented with unilateral arrangement and associated with an autoimmune disease. The pathophysiological mechanisms implicated in the development of

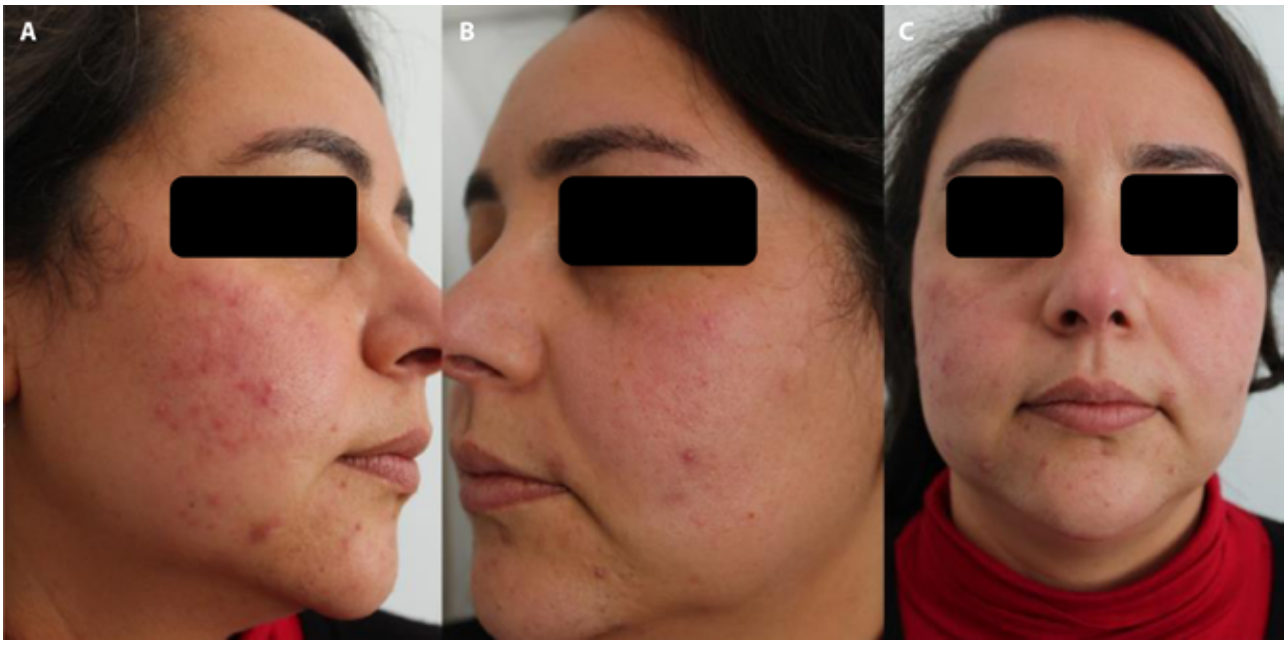

Figure 1. (A) Unilateral rosacea confined to the right hemiface. (B) Right lateral aspect evidencing erythema and papulopustules. (C)_Slight erythema on the left side.

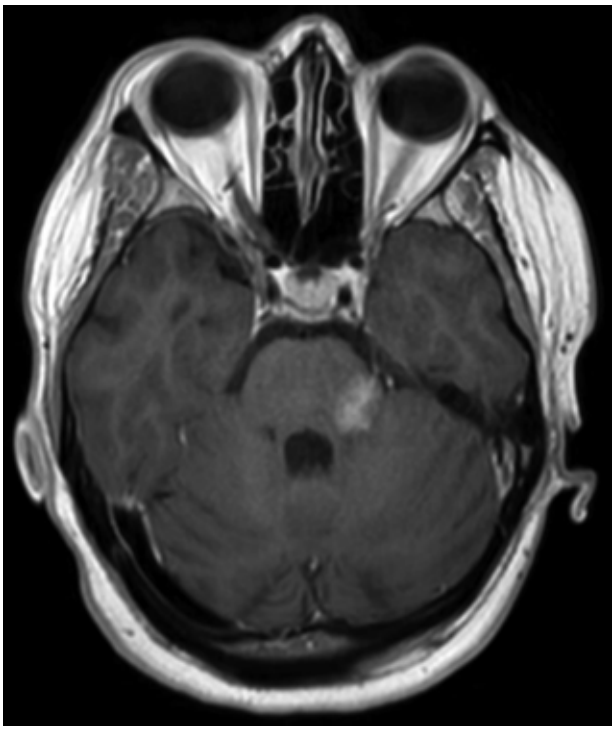

Figure 2. Neuroimaging findings in our patient with gadolinium-enhanced T1-weighted image on the axial plane that shows a hyperintense pontine lesion at the right trigeminal nerve zone.

rosacea include dysregulation of the innate immune system, imbalance of commensal skin microbiota, and abnormal neurovascular signaling [1]. Neurogenic rosacea, a recently described rosacea subtype, demonstrates the role of local neural-associated mediators dysregulation in the pathophysiology of the dermatosis [2]. Moreover, it occurs more often in patients with neurological or neuropsychiatric conditions, including complex regional pain syndrome, essential tremor, depression and obsessive-compulsive disorder [2]. Dysesthesia secondary to neuronal injury was commonly reported and was associated with classical rosacea signs [2]. It is well known that patients suffering from rosacea have an increased of developing a number of auto-immune diseases, including multiple sclerosis. Yet, it is also important to notice that trigeminal neuralgia, attributed to multiple sclerosis, may explain the neurogenic inflammation leading to such skin condition as well as the unilateral arrangement of the lesions. Our case may also reflect a regional destabilization of the neuroimmunocutaneous system induced by multiple sclerosis. This hypothesis fully represents the concept of immuno-compromised district (ICD) [3,4]. ICD, a newly introduced pathogenic concept, stipulates that several different factors are likely to create a privileged cutaneous district, which explains the segmental presentation of many skin disorders, including bullous pemphigoid, pemphigus, lichen planus, discoid lupus erythematosus, drug eruptions and acne [4-6]. Trigeminal neuralgia attributed to multiple sclerosis, in analogy with the aforementioned facial nerve palsy, could locally alter the immune response and induce the occurrence of rosacea following the neurologically impaired facial side.

Regardless of the etiopathogenic mechanisms of rosacea, the interaction between the skin and the immune and nervous systems is currently well established, with rosacea being one of the established examples involving these various systems. The systematized arrangement of a dermatosis that is strictly confined to a specific area may refer to

the "immunocompromised district" concept, and thus promoting investigations into possible immunocompromising factors. Further research is clearly needed to better describe the underlying patho-physiologic characteristics and to identify additional effective treatment methods".

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