Dermatology Practical & Conceptual

Omalizumab In The Treatment Of Refractory Urticarial Vasculitis Triggered By SARS-Cov-2 Infection: A Pediatric Case Report

Yusuf Can Edek[1], Ecem Ertürk[1], Esra Adışen[1]

1 Department of Dermatology, Gazi University Faculty of Medicine, Ankara, Turkey

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Corresponding Author: Yusuf Can Edek, Gazi Universitesi Tip Fakultesi Hastanesi, Emniyet Mahallesi, Mevlana Bulvari, No:29, 06560 Ankara, Turkey. Phone: +903122026129/+905062818274. E-mail: yusuf-can-35@hotmail.com

Introduction

Urticarial vasculitis is a small-vessel vasculitis type that can be difficult to distinguish from chronic idiopathic urticaria. Lesions that persist longer than 24 hours, along with the associated burning sensation and hyperpigmentation, can aid in identifying urticarial vasculitis. While elevated sedimentation rate and hypocomplementemia are common laboratory abnormalities in urticarial vasculitis, histopathological analysis may show features of leukocytoclastic vasculitis. Treatment options for urticarial vasculitis include antihistamines, systemic steroids, colchicine, cyclosporine, methotrexate, and omalizumab [1,2]. Herein, we present a pediatric urticarial vasculitis case secondary to SARS-CoV-2 infection, treated with omalizumab.

Case Presentation

A 6-year-old healthy boy presented to our clinic due to itchy rashes. His parents described that the lesions began on the leg 10 days after the SARS-CoV-2 infection diagnosis six months earlier and that the lesions had spread over time. Dermatological examination showed annular urticarial plaques, purpuras, and hyperpigmented patches on the trunk, extremities, and face (Figure 1). Histopathological analysis of the punch biopsy of the urticarial plaque on the trunk showed perivascular dermal infiltration, endothelial swelling, and leukocytoclasia. While laboratory evaluation revealed a high immunoglobulin level (1030 kU/L), the complement levels were evaluated as normal. The patient was diagnosed with normocomplementemic urticarial vasculitis based on clinical examination and histopathological findings. Considering the time of development of the complaints and the absence of any other triggering factors, it was concluded that the urticarial vasculitis developed secondary to the SARS-CoV-2 infection. Following oral prednisolone (1 mg/kg) and desloratadine treatment, complete treatment response was detected, and steroid treatment was tapered. When the patient's complaints recurred while the steroid dose was reduced, omalizumab treatment was chosen since

Figure 1. Widespread annular erythematous urticarial plaques and hyperpigmentation on the (A) trunk, (B) face, and (C) leg.

literature data indicates that it is beneficial for treating urticarial vasculitis and is a safe medication in terms of side effects. Omalizumab treatment was administered subcutaneously for 150 mg/4 weeks, and at the 1-year follow-up, the patient's symptoms had regressed without any recurrence or side effects.

Discussion

While the etiology of urticarial vasculitis may be idiopathic, malignancies, connective tissue diseases, and infections also can be a triggering factor. In the literature, several skin conditions linked to SARS-CoV-2 have been described, with urticarial vasculitis being one of them. The exact pathogenesis of SARS-CoV-2-induced urticarial vasculitis remains unknown; however, virus-mediated endothelial cell damage and immune system dysregulation, as immune complex deposition and complement-induced cytotoxicity play a role in the pathogenesis [1,3].

Treatment of urticarial vasculitis in pediatric cases is challenging due to the unsatisfactory effectiveness of antihistamines and the restrictive use of long-term systemic steroids or immunosuppressive agents due to side effects [4]. Omalizumab is a humanized monoclonal antibody targeting IgE used in chronic spontaneous urticaria treatment. Recent studies have shown that omalizumab is effective in treating urticarial vasculitis [5]. Wang et al. reported that four pediatric urticarial vasculitis patients unresponsive to systemic steroid treatment were successfully treated with omalizumab without any side effects or recurrence [4].

Conclusion

We would like to highlight with this case report that urticarial vasculitis may be one of the skin conditions linked with SARS-CoV-2 and that omalizumab may be a safe treatment agent in pediatric urticarial vasculitis cases.

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