

Successful treatment of delayed pressure urticaria with 300 mg of omalizumab every 14 days

Gulcan Saylam Kurtipek MD  | Emre Zekey MD  | Fatma Tunccez Akyurek MD 

Department of Dermatoloji, Selcuk University Faculty of Medicine, Konya, Turkey

Correspondence

Gulcan Saylam Kurtipek, Department of Dermatoloji, Selcuk University Faculty of Medicine, Konya, Turkey.
Email: gsaylamkurtipek@yahoo.com

Abstract

Delayed pressure urticaria is a rare form of chronic inducible urticaria characterized by erythematous-painful plaques that develop in areas of the skin exposed to prolonged pressure. Its treatment is very difficult, and its response to antihistamines is variable. Cases of delayed pressure urticaria, which have been completely controlled with the use of omalizumab in recent years, have been reported.

KEYWORDS

delayed pressure urticaria, omalizumab

1 | INTRODUCTION

Delayed pressure urticaria is a rare form of chronic inducible urticaria characterized by erythematous-painful plaques that develop in areas of the skin exposed to prolonged pressure. It usually coexists with chronic spontaneous urticaria.¹ In this form of urticaria, the lesions occur after 4-6 hours in places where pressure is applied, and unlike the classical urticaria plaque, the lesion may take up to 72 hours to heal. This seriously affects the patient's quality of life. Its treatment is very difficult, and its response to antihistamines is variable. Cases of delayed pressure urticaria, which have been completely controlled with the use of omalizumab in recent years, have been reported.²

We present a 45-year-old case of delayed pressure urticaria in our clinic, where we obtained a complete response with 300 mg/2 wk of omalizumab treatment.

2 | CASE REPORT

A forty-five-year-old female patient applied to our clinic with the complaints of redness, swelling, itching, burning, needling, and pain in various parts of her skin for fifteen years. In the history of the patient, it was learned that the lesions occurred on the hands after carrying the market bag, on the feet after long distance walking, and on the back of the knees after sitting in the chair for a long time. He stated that applying pressure to an area other than daily routine triggers the lesions. The patient reported that in places where pressure

was applied, a tingling sensation, prickling sensation started after 1 hour, and swelling redness and pain developed after 5-6 hours. He stated that he took oral antihistamines (rupatadin, hydroxyzine, levocetirizine) for a long time and systemic steroids for a short time from time to time. He also had been using montelukast and inhaler salbutamol regularly for years due to his asthma disease. The patient stated that he received minimal benefit from antihistamine treatments at first and no benefit recently.

In the dermatological examination of the patient, erythematous, indurated, not very sharp plaques were observed on the bilateral palms (Figure 1), behind the knees (Figure 2), and especially on the soles of the feet (Figure 3). The appearance of lesions in areas with long-term pressure supported the diagnosis of delayed pressure urticaria. The patient had no systemic disease other than asthma. In laboratory examination, complete blood count and routine biochemistry tests were normal. The total immunoglobulin E (IgE) level was reported as 120 IU/mL (the reference range: 0-100 IU/mL). As a result of the current history and dermatological examination, the patient was diagnosed with delayed pressure urticaria and omalizumab 300 mg/4 wk treatment was started. The patient, who was followed up with this treatment protocol for 3 months, received a complete response to the treatment in the first 2 weeks of omalizumab administration, but then increased complaints. For this reason, the dose of omalizumab was rearranged as 300 mg/2 wk. The follow-up and treatment of the patient, whose complaints disappeared completely with only omalizumab 300 mg/2-wk treatment without antihistamine treatment, still proceed in our clinic.



FIGURE 1 Erythematous, indurated, not very sharp plaques were observed on the bilateral palms



FIGURE 3 Plaques were seen soles of the feet

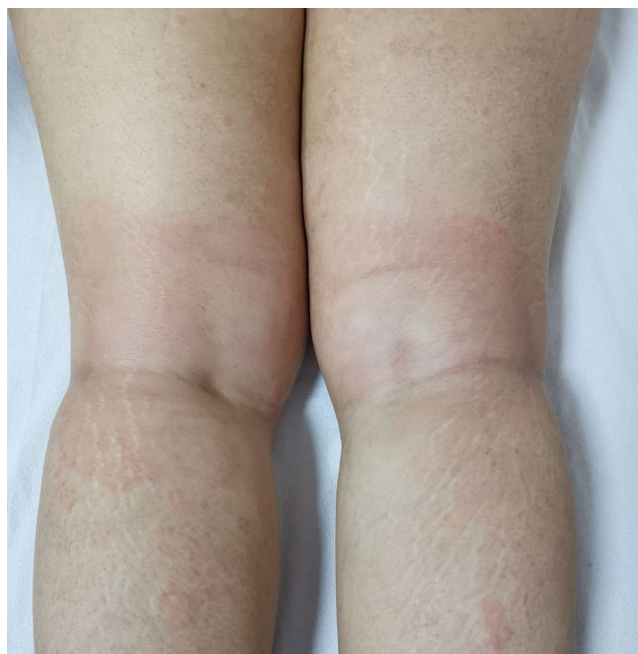


FIGURE 2 Erythematous plaques were present behind the knees

3 | DISCUSSION

Chronic inducible urticaria (CIU) is observed in about 17% of patients with chronic urticaria. Delayed pressure urticaria is a rare form of CIU. Typical findings in these patients are characterized

by erythematous and painful endured plaques formed in long-term pressure areas. Lesions occur approximately 4-6 hours after pressure application and can persist up to 72 hours. This seriously affects the patient's quality of life.^{1,2} In our patient, in the areas such as palms and soles that were exposed to pressure for a long time, the swelling that occurred after 5-6 hours, the burning sensation, and pain significantly affected her life.

The pathogenesis of the disease is not fully understood. Mast cell infiltration and degranulation, which are observed in the deep dermis and subcutis, are thought to have a key role, and neutrophil and eosinophil infiltrations are also observed in the lesions.^{3,4} In the early stages of the lesions, an increase in the expression of VCAM-1, ICAM-1, and E-selectin, which mediated the migration of neutrophils, eosinophils, and lymphocytes to the site, was observed.⁵ Extracellular neutrophilic elastase and eosinophilic cationic protein accumulation observed in histopathological studies appear to be the dominant feature of delayed pressure urticaria.^{6,7} TNF-alpha, IL-3, and IL-8 levels were also found to be high in lesioned and non-lesioned skin.⁸ Although these cellular and chemical mediators on the skin with and without lesions act as a compass to clinicians in the choice of treatment, this disease is still difficult to treat and there are no agreed guidelines.

Antihistamines are generally ineffective in the treatment of the disease. Systemic steroids are beneficial but not suitable for long-term use due to side effects.^{9,10} The use of dapsone has been found useful and presented as an alternative in a series of 31 patients, but caution should be exercised for possible side effects.¹¹ Over time, colchicine, NSAIDs, and IVIG have been tried, but variable results have been obtained.¹²⁻¹⁵ In our patient, there was no response to

high-dose antihistamines and montelukast, while response to intermittent systemic corticosteroid therapy was received.

In recent years, promising and reliable results have been reported in delayed pressure urticaria with the use of anti-IgE monoclonal antibody omalizumab in case series and case reports. Omalizumab is a recombinant humanized monoclonal antibody and inhibits the effects of IgE, stabilizes the monocyte membrane, and prevents its degranulation. Histopathological findings in delayed pressure urticaria were compared to IgE-mediated late-phase reactions. Omalizumab is also thought to induce apoptosis in eosinophils.^{16,17} Generally, positive and reliable responses were obtained from treatments applied in different doses ranging from 150 mg/4 wk to 300 mg/2 wk in delayed pressure urticaria.¹⁸⁻²²

Delayed pressure urticaria is a form of CIU whose pathogenesis is not yet clear and difficult to treat and has negative effects on the patient's quality of life. Omalizumab is a monoclonal antibody that inhibits the effects of IgE and has been used for years in chronic spontaneous urticaria, and there is recently increasing evidence that it may also be useful in the treatment of delayed pressure urticaria. We think that with this case, omalizumab treatment may be involved in the treatment of delayed pressure urticaria.

CONFLICT OF INTEREST

All authors declared no conflict of interest.

DATA AVAILABILITY STATEMENT

Research data are not shared.

ORCID

Gulcan Saylam Kurtipek  <https://orcid.org/0000-0002-3106-4280>

Emre Zekey  <https://orcid.org/0000-0001-6237-1534>

Fatma Tuncez Akyurek  <https://orcid.org/0000-0002-9339-8331>

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