CASE REPORT

Dyshidrotic eczema associated with the use of IVIg

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SUMMARY

Intravenous immunoglobulin (IVIg) treatment is highly effective for autoimmune diseases including myasthenia gravis. Recovery is observed at approximately 75% of myasthenia gravis patients through IVIg treatment. As a result of many clinical studies, the recommended dose is determined as 0.4 g/kg for 5 days (maximum total dose at 2 g/kg body weight). If an additional immunomodulatory treatment is not administered, IVIg maintenance treatment is needed mostly. However, some side effects may inhibit long-term treatment. For this reason, it is important to know the effect profile well and when the treatment should be discontinued. A female myasthenia gravis patient case is presented here, where dyshidrotic eczema has occurred after the second dose of intravenous Ig medication and whose treatment is despite further IVIg therapy.

BACKGROUND

Intravenous immunoglobulin (IVIg) is the most commonly used plasma product in the world. IVIg is therapeutic preparate of normal human polyclonal IgG which is obtained by pooling plasmas of thousands of healthy donors.¹

In the beginning, it was used as a replacement therapy for primary and secondary immune crises; nowadays, it is commonly used in the treatment of many autoimmune and systemic inflammatory diseases. The drug received a license in 1981 for the first time for the treatment of primary and secondary immune deficiencies. After an increase in the thrombocyte numbers of a patient with genetic immune deficiency and thrombopenia has been observed during the use of IVIg, the area of use of high-dose IVIg treatment became autoimmune diseases.² Today, IVIg is used for the treatment of many autoimmune neurological diseases and it can also be applied for myasthenia gravis and myasthenic crisis which progress through attacks.³

Skin side effects, cutaneous adverse effects or dermatologic adverse effects, etc because of the use of IVIg are seen very rarely.²⁻⁴ The majority of reported cases experienced an eczematous reaction after their first IVIg treatment. In addition, IVIg is also used for dermatological diseases. Recovery through the use of IVIg is reported for Steven-Johnson syndrome, toxic epidermal necrolysis, pemphigus vulgaris, pemphigus foliaceus and bullous pemphigoid.⁵⁻⁶ Dyshidrotic eczema, also known as pompholyx, is a chronic-relapsing disease, which is characterised by the sudden occurrence of itchy vesicles mainly on the palmoplantar region. While the first symptom of the disease may be deeply rooted, small vesicles and a few desquamation, blisters and stretch marks, which hamper

working, may also be seen. Blisters on the hands, itching and paraesthesia are the first symptoms of this disease (at an acute stage). Afterwards, more desquamation, scab and stretch marks are seen at the chronic stage. While some patients remain at an acute stage, the majority of the patients pass to the chronic stage in general. In some cases, the symptoms of both stages could be seen together.⁷

In this article, a case that is followed as myasthenia gravis for 2 years, where dyshidrotic eczema occurred during the use of IVIg due to bulbar symptoms and the symptoms regressed during the treatment process is presented.

CASE PRESENTATION

A 37-year-old female patient, who was followed at our polyclinic with myasthenia gravis diagnosis, applied to us because of chewing difficulty and speech disorder which occurred 1 week ago. The result of the neurological examination was dysarthric speech, weakness of the orbicularis muscles, neck flexion 4/5 and of the masseter muscle strength. The patient was admitted to the hospital because of bulbar symptoms. Intravenous Ig treatment was planned for the patient for 5 days, and the pyridostigmine and steroid doses were readjusted. The patient did not have the characteristics of the disease in her medical history and did not receive any IVIg treatment previously. After the second dose of IVIg application, vesicles were observed on her hands, feet and fingers (figures 1 and 2). By consulting with the dermatology department, a dyshidrotic eczema diagnosis was made for the patient and steroid cream and antihistaminic treatment started. Since there was no contraindicated situation, by taking the bulbar symptoms into consideration, IVIg treatment was continued. The results of IVIg

Figure 1 Appearance of dyshidrotic eczema which progresses in the form of fluid-filled blisters on the palm and fingertips after the use of intravenous immunoglobulin.

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Figure 2 Appearance of dyshidrotic eczema which progresses in the form of fluid-filled blisters on the palm and fingertips after the use of intravenous immunoglobulin.

treatment were beneficial and the bulbar symptoms of the patient were improved by the end of the first week. On follow-up, it was observed that the patient's eczema regressed a little through topical treatment by the end of the first month and that the skin eruptions did not increase after IVIg treatment which was applied monthly and for one day. Based on the patient's polyclinic follow-up after 6 months, it was observed that the skin eruptions disappeared completely despite IVIg maintenance treatment.

DIFFERENTIAL DIAGNOSIS

The disease is diagnosed through the exclusion of medical history, clinical presentation and other dermatological diseases. In addition, atopic dermatitis, allergic contact dermatitis, irritant contact dermatitis and fungal infections are the other causes of dyshidrotic eczema. Although dyshidrotic eczema is a chronic disease, it could regress after a long time.⁸

TREATMENT

Topical steroid and oral antihistaminic treatment was applied to our case. After the treatment, the lesions decreased noticeably and disappeared completely afterwards.

OUTCOME AND FOLLOW-UP

When planning IVIg application, the expensiveness and side effects (although rare) should be taken into consideration. Each case should be assessed on the basis of its characteristics and decisions should be made according to the treatment required, risks of treatment, underlying risk factors and the accompanying diseases of the patient.

DISCUSSION

Myasthenia gravis is an autoimmune disease which occurs through the antibodies developed by the patient against nicotinic acetylcholine receptors at the neuromuscular junction. IVIg can be applied to myasthenia gravis and myasthenic crisis, which progresses through attacks.⁹ It can be given to keep the patient who will have a surgery in stable condition. Owing to the existence of bulbar symptoms such as speech disorder and chewing difficulty and considering thymectomy recently, it is planned to start IVIg treatment for 5 days at the beginning and afterwards 1 day in a month with 0.4 g/kg dose for our case.

IVIg treatment has a broad area of use and Food and Drug Administration -approved indications; it is also used for many

diseases without approval. The frequency of side effects during IVIg treatment is reported as 5% or less.¹⁰ Most of the side effects observed are slight and temporary headache, feeling warm, fever, skin eruption, defatigation, nausea, diarrhoea, blood pressure changes and tachycardia.¹¹ Since the skin eruptions observed in our case occurred after the second dose of the application and were limited to the hands and feet, it was not considered as a serious allergic reaction.

Serious side effects of IVIg were also reported. Since serious side effects are generally seen in people who have an underlying risk factor or an accompanying disease, a very detailed medical history should be received from the patients who received IVIg application and a physical inspection should be made. Serious side effects can be summarised as acute kidney failure, paralysis, myocardial infarction, deep vein thrombosis, pulmonary embolism, anaphylaxis, toxic shock syndrome and aseptic meningitis.¹² But these side effects are rarely seen. Side effects are generally considered to be in connection with the aggregation of immunoglobulin molecules which cause the activation of the complement system.¹³ No characteristics were found in the antecedent and physical examination of our case, limiting the use of IVIg.

Dyshidrotic eczema is a form of endogenous eczema and is characterised by vesicles settled on the palms and soles and especially on the sides of the fingers. This situation is related to the settlement of the eccrine sweat glands and the increase of the disease activity through emotional variations. While excessive sweating (hyperhidrosis), especially on the hands and feet, is considered to be in connection with the aetiology of the disease, sweating may become normal or may even decrease.¹⁴ Gerstenblith *et al*¹⁵ reported that in 64 cases of eczematous reactions associated with IVIg therapy, the majority of patients (62.5%) had pompholyx. Although dyshidrotic eczema occurring after intravenous immunoglobulin therapy usually seen in adults, reported only a case in the childhood.¹⁶

The clinical symptoms of dyshidrotic eczema are considerably typical. In the attacks which start with itching at the acute stage, a large number of vesicles on the sides of the fingers and on the palms or bullae which occurs by the integration of these are seen. Symptoms on the soles sometimes accompany these symptoms. Eruptions are often bilateral and symmetrical and are recurrent. Related to our case, itchy vesicular eruptions have started on the hands and palms of our patient. Very few eruptions on the soles of the foot accompanied these eruptions a couple of days and afterwards it regressed automatically. During the treatment, antihistamines and/or low dose steroids could be applied.¹⁷

Learning point

Dyshidrotic eczema can be a rare side effect related to the intravenous immunoglobulin (IVIg) used. To know the skin reactions that may occur as IVIg use increases is important in order to direct the treatment regimen. This article aims to emphasise that this rare side effect observed during IVIg application is not an impending condition for the treatment.

Competing interests None.

Patient consent Obtained.

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