

A Case of Allergic Skin Reaction to Mandragora Radix

Müzeyyen Gönül* and Seray Külcü Çakmak

Numune Education and Research Hospital, Dermatology Clinic, Ankara, Turkey

Abstract

A 32-year-old man was admitted to our outpatient clinic with erythema and pruritus on his forearm 10-12 days after first applying the sap of mandragora radix. Dermatological examination revealed irregular bordered, erythematous, edematous plaque with mild desquamation extending from wrist to the distal region of inner surface of right upper extremity. He was diagnosed as allergic contact dermatitis to mandragora radix. Mandragora is a solanaceous plant that contains the alkaloids mandragorine, hyoscyamine, scopolamine and more than 80 substances. It has been used as a sedative, aphrodisiac, emetic analgesic and an anesthetic for surgical purposes. Mandragora officinarum induced allergic contact dermatitis has not been reported previously in literature.

Keywords: Mandragora; Allergic contact dermatitis; Protein contact dermatitis

Introduction

Mandragora is a solanaceous plant that has been used as a sedative, aphrodisiac, emetic analgesic and an anesthetic for surgical purposes [1]. We present first case Mandragora induced allergic contact dermatitis.

Case Report

A 32-year-old man was admitted to our outpatient clinic with erythema and pruritus on his forearm that had appeared 3 days ago. He said that a similar lesion first occurred on the same region 10-12 days ago, within minutes after applying the sap of mandragora radix. His sister also applied sap of mandragora radix over the joints for her arthralgia without side effects. The present case said that he applied it, because he wanted to try its effect. He defined that first lesion had occurred on application area within 30 minutes after the skin contact and it was characterized with pruritus, redness and swelling. The lesion had improved within 2-3 days with the use of a cream which he did not know the name. He denied previous contact with this plant and its radix. He did not have history of allergy including contact dermatitis or atopic diseases. The present lesion occurred on the same area of the skin 10 days after first application without another application. Dermatological examination revealed irregular bordered, erythematous, edematous plaque extending from wrist to the distal region of inner surface of right upper extremity. There were 2-5 mm sized erythematous and edematous papules which occasionally coalesced around the plaque. Mild desquamation was also observed on the lesion (Figures 1 and 2). He was diagnosed as allergic contact dermatitis to mandragora radix (Figure 3). Topical steroid therapy was suggested for the lesion of the patient. Skin tests could not be performed because the allergen was thought to be very strong as once contact resulted in recurrent contact dermatitis.

Discussion

Many people use unconventional therapies including herbal therapy for health problems. These therapies are not risk free. Sometimes, herbal therapies may cause contact reaction, secondary infection and changes in the appearance of the primary dermatological lesion [2]. Contact dermatitis due to the herbal therapy may occur as irritant contact dermatitis or allergic contact dermatitis. For example, irritant phytocontact dermatitis due to the Ranunculaceae family used for treating hemorrhoids or rheumatismal pains and allergic contact

dermatitis due to the pure henna used for relief of rheumatismal pains or cosmetically have been reported [3,4].

Mandragora is a plant of the nightshade family, Solanaceae, native in the Mediterranean and Southern and Central Europe [1]. The family Solanaceae includes plants such as tomato, potato and red pepper [1,5]. Mandragora contains the alkaloids like mandragorine, hyoscyamine,



Figure 1: Irregular bordered, erythematous, edematous, and mildly squamous plaque on the upper extremity inner surface.



Figure 2: Closer appearance of the lesion.

*Corresponding author: Müzeyyen Gönül, Numune Education and Research Hospital, Dermatology Clinic, Ankara, Turkey, Tel: 90 312 3274509; Fax: + 90 312 3045300; E-mail: muzeyyengonul@yahoo.com

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Figure 3: Mandragora plant and its radix.

and scopolamine. Up to the present time, more than 80 substances are isolated in different species of the genus *Mandragora*. We estimate that our patient had used *Mandragora officinarum* because it is the most frequent type in our country. Since antiquity, mandragora has been used as a sedative, aphrodisiac, emetic analgesic and an anesthetic for surgical purposes [1].

Mandragora officinarum induced allergic contact dermatitis has not been reported previously in literature. A case report of anaphylactic shock after subcutaneous injection of mandragora D3 a homeopathic drug has been reported. In this case who did not have history of contact dermatitis to mandragora, patch test with mandragora root powder was performed and a typical delayed-type reaction with erythema, infiltration, and aggregated vesicles was observed. In this report, it was suggested that mandragora roots might trigger both type-1 allergic reaction and delayed-type reaction [6]. In the present case, first inflammatory reaction that is characterized with erythema and edema with pruritus may be immediate contact skin reaction which manifests as protein contact dermatitis or contact urticaria. Irritant contact dermatitis and contact urticaria occurring rapidly after the contact were ruled out because of the rapid occurrence and long duration of the lesion and associated pruritus. Protein contact dermatitis is an immediate dermatitis occurring after contact with proteins such as meat, fish and vegetables. Protein contact dermatitis develops within minutes following external contact with eliciting substance and manifests as eczema. Contact urticaria and dermatitis can be induced by the same substance and can occasionally be present in same patient [7].

Second episode of the present case was evaluated as allergic contact dermatitis because of clinical features of the lesion and concomitance of pruritus. Allergic contact dermatitis is a delayed-type reaction of

skin mediated by hapten-specific T cells induced by repeated skin contact with haptens [8,9]. The inflammatory response in allergic contact dermatitis requires both a sensitization phase and an elicitation phase responsible for the recruitment and activation of hapten-specific T cells at contact region of skin [9]. Sometimes, primary allergic contact dermatitis may develop after the first skin contact with potent contact sensitizers in previously unsensitized patients. This status is associated with persistence of the hapten in the skin, which allows the infiltration and activation of T cells [9]. The present case is a good model for primary allergic contact dermatitis. To know which potent hapten is induced primary allergic contact dermatitis is very difficult as mandragora's content is very rich. However, as it belongs to Solanaceae family which also contains potato, tomato and red pepper, a protein similar in those vegetables might have caused the contact reaction. These vegetables might cause the development of the sensitization in this case; the primary lesion might be a cross-reaction to mandragora but secondary reaction developed without any contact.

Consequently, the present case is the first case of mandragora radix induced allergic contact dermatitis. *Mandragora* may be a potent sensitizer in susceptible people and may trigger allergic contact dermatitis after the first skin contact. Moreover, it may cause immediate contact skin reaction in the same patient. The patients who want to use herbal therapy for their condition must be careful in terms of severe allergic reaction to plant extracts.

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