



A Case of Acute Irritant Dermatitis Caused by *Plantago Major* *Plantago Majorun Neden Olduğu Bir Akut İrritan Dermatit Olgusu*

Ömer Faruk Elmas¹, Mahmut Sami Metin¹, Okan Kızılyel¹, Handan Bilen¹, Necmettin Akdeniz²,
Mustafa Atasoy¹

¹Atatürk University, Faculty of Medicine, Department of Dermatological and Venereal Diseases, Erzurum, Turkey

²Medeniyet University, Göztepe Training and Research Hospital, Department of Dermatological and Venereal Diseases, Istanbul, Turkey

Dear Editor,

Acute irritant dermatitis, the most common form of dermatitis associated with plants, is an eczematous reaction that emerges in 1-24 hours after the contact with strong irritant substances. Often asymmetrical, lesions are limited to the contact location. Main factors of the formation of acute irritant dermatitis are the concentration of the substance and the contingency time. Unlike allergic contact dermatitis, individual predisposition and sensitisation do not play a leading role in the formation of the clinical picture in acute irritant dermatitis. *Plantago major*, also known as "broadleaf plantain" or "whiteman's foot," is a type of plantain from the Plantaginaceae family. Mostly seen in Europe and central and northern Asia, it grows naturally in different geographical regions with temperate climate (1). Dermatitis cases caused by *plantago major* have been reported to be very few in number in the literature.

55-year-old female patient was admitted to our clinic with complaints of reddening and itching in the leg. The patient had previously tied up a plant around her leg hoping that it would decrease her pain but approximately 24 hours after the contact, her leg developed itching and redness. Earlier, the patient did not have any medical history concerning a contact with the plant. There were no concomitant diseases or medication either. On examination, we observed erythematous and edematous plaques limited to the contact area of the plant on the front right leg (Figure 1).

The plant causing the case was considered to be *Plantago Major* after the examination. Unable to apply patch test due to active and severe lesions, the patient was clinically diagnosed to be an acute irritant dermatitis case. Signs of healing were achieved after treating the patient with ointments containing topical corticosteroids and sedative antihistamines. Then, the patient was recommended to take the patch test but the test could not be performed since the patient refused to take the test.

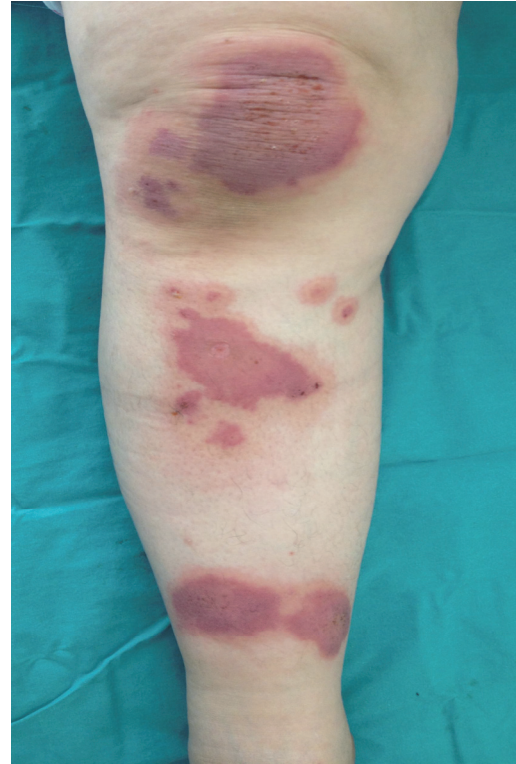


Figure 1. Erythematous and edematous plaques limited to the contact area of the plant on the front right leg.

Also known as "whiteman's foot," *plantago major* is a wild plant that grows naturally in temperate regions. Data about this plant can be traced back in as far as 2000 BC. Naturally found in Europe and Asia, the plant consists of numerous chemical components. This large number of chemical components, may explain why the plant causes irritant dermatitis (2). *Plantago major* leaves promotes anti-inflammatory, antimicrobial, antitumor, immunomodulatory, and wound healing effects (1). It is

on this basis that the plant is used in conventional medicine (3). Curing characteristics of the plant is a result of allantoin, aucubin, bioactive components such as ursolic acid and asperuloside (4). *Plantago major* has also been used in the treatment of leishmaniasis (5). In almost all cultures, including Turkish culture, some plants are traditionally used for healing (6, 7). Such plants share a dermatological side-effect profile with a large spectrum ranging from irritant and allergic conditions to granulomatous reactions (8). Our patient, too, had applied the plant to her leg due to the pain. Erdem et al. reported two cases in 2009. Our patient, our research showed, was the third acute irritant dermatitis case caused by *plantago major* in the literature.

Acute irritant dermatitis is the most common form of dermatitis caused by plants. In the literature, the number of acute irritant dermatitis cases caused by *plantago major* is a fairly small. In this respect, our case attracts attention.

REFERENCES

1. Gomez-Flores R, Calderon C L, Scheibel L W, Tamez-Guerra P, Rodriguez-Padilla C, Tamez-Guerra R, Weber R J. Immunoenhancing properties of *Plantago major* leaf extract. *Phytother Res* 2000;14:617–22.
2. Nazarizadeh A, Mikaili P, Moloudizargari M, Aghajanshakeri S, Javaherypour S. Therapeutic uses and pharmacological properties of *plantago major* L. and its active constituents. *J. Basic Appl Sci Res* 2013;3:212-21.
3. Samuelsen A B. The traditional uses, chemical constituents and biological activities of *Plantago major* L. A review. *J Ethnopharmacol* 2000;71:1–21.
4. Duke, James A. *Plantago major*. Handbook of Phytochemical Constituents of GRAS Herbs and Other Economic Plants. Boca Raton Fla:CRC Press;2001. p. 471.
5. França F, Lago E L, Marsden P D. Plants used in the treatment of leishmanial ulcers due to *Leishmania braziliensis* in an endemic area of Bahia, Brazil. *Rev Soc Bras Med Trop* 1996;29:229–32.
6. Erdem T, Caferoğlu Sakat S, Ismail Engin R, Ozyiğit H, Atasoy M, Kaya Y. Acute irritant contact dermatitis caused by *Plantago major*. *Contact Dermatitis* 2009;60:237-9.
7. Mantle D, Gok M A, Lennard T W. Adverse and beneficial effects of plant extracts on skin and skin disorders. *Adverse Drug React Toxicol Rev* 2001;20:89–103.
8. Ebstein W L. Plant-induced dermatitis. *Ann Emerg Med* 1987;16:950–5.

Received/Başvuru: 06.01.2014, Accepted/Kabul: 19.02.2014

Correspondence/İletişim

Okan KIZILYEL
Atatürk University, Faculty of Medicine, Department of
Dermatological and Venereal Diseases, ERZURUM, TÜRKİYE
E-mail: erester.34@hotmail.com

For citing/Atıf için

Elmas OF, Metin MS, Kizilyel O, Bilen H, Akdeniz N, Atasoy M. A case of acute irritant dermatitis caused by *plantago major*. *J Turgut Ozal Med Cent* 2014;21:243-4 DOI: 10.7247/jtomc.2014.1648