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Case Report

Ant-Induced Alopecia, A Case Series

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Abstract

Ants can cut hairs and cause localized hair shedding without affecting the structure of hair follicles. Pheidole pallidula can cut the hairs just above the skin surface and cause hair shedding resembling alopecia. There are several reports of ant-induced alopecia in medical literature, all of which have been from Iran or Turkey and caused by P. pallidula. This species of ant is also found in many European countries of the Mediterranean region, North Africa, and the US, and therefore, this diagnosis should be considered in cases of localized alopecia or hair shedding in these geographic areas. Herein we report 8 cases of ant-induced alopecia observed in south-west of Iran and present their clinical findings. A familiarity with this condition may help providers in their clinical assessment and an accurate diagnosis of this process may prevent unnecessary diagnostic procedures.

Key words: Ant; Alopecia; Cut; Europe; Hair Loss; Iran; Pheidole; Pallidula; United States

Introduction

Localized scalp hair loss can be associated with a variety of processes. A thorough history and physical exam often lead to clues to the underlying cause. In alopecia areata, trichotillomania, traumatic hair loss, and tinea capitis, a physical exam often shows short, broken, or exclamation-mark-like hairs in the area of hair loss. Tinea capitis can cause hair breakage and black-dots on the skin surface. Some chemicals used for hair removal can dissolve the hair shaft and cause a "black-dot" appearance. The use of a razor or hair clipper, or physical trauma, can also cut or break the hairs near the skin surface. However, when there is a history of overnight localized hair shedding, with the finding of shed hairs on the pillow or during hair brushing, in the presence of short broken hairs on a normal scalp, two differential diagnoses should be considered: ant-induced hair cutting and human or self-induced hair cutting. There are several reports of ant-induced alopecia in medical literature, with all the cases occurring in Iran or Turkey and caused by genus Pheidole [1-7]. Herein we report additional 8 cases of ant-induced alopecia in Iran.

Cases

Eight cases of ant-induced alopecia were encountered between Jan 2006 and June 2012 in Dezfoul, a tropical town in the South-West of Iran. All cases were reported to have occurred overnight and were confirmed on exam with the finding of ants between the hairs. The hairs were cut-off just above the scalp surface in a single circumscribed area with distinct borders in all cases (Table 1).

Table 1. Demographics, signs and symptoms of eight cases of ant-induced alopecia of the scalp

Gender, age (year)	Location	Symptoms	Signs
F, 4 months old	Temporal	-	One patch 2×1.5 cm, hairs 1-3 mm long, some erosions and erythema localized to the area
M, 17	Vertex	Mild pruritus	One irregular patch 1.5×2.5 cm, hairs 1-3 mm long, some erosions and erythema localized to the area
M, 19	Crown	None	One irregular patch 2×2.5 cm, hairs 1-3 mm long, no erosions or erythema
M, 27	Vertex	Mild pruritus	One patch 3×2 cm, hairs 1-5 mm long, some erosions and erythema localized to the area (Fig 1)
F, 38	Vertex	Mild pruritus	One patch 2×2.5 cm, hairs 1-3 mm long, some erosions and erythema localized to the area
M, 41	Crown	None	One irregular patch 2×2 cm, hairs 1-4 mm long, no erosions or erythema (Fig 2)
M, 42	Occipital	Mild pruritus and burning	One irregular patch 2×2.5 cm, hairs 1-3 mm long, some erosions and erythema localized to the area
M, 47	Temporal	None	One irregular patch 2.5×5 cm, hairs 1-3 mm long, no erosions or erythema

F, female; M, male

Discussion

Ant-induced alopecia has been previously reported in the literature. In all these cases, P. pallidula is the only species implicated. This Mediterranean dimorphic brown ant feeds on seeds, fruits, flower nectar, and other insects or animal remnants, with the food source likely influenced by geographical and climatic conditions [3]. This ant can be easily observed while gathering dead insects, pieces of meat, fat, or pieces of clipped fingernails in Iran. This dimorphic ant has two different organisms, the larger major workers or "soldiers" that have total body length of 2.5-6 mm and relatively large heads and jaws and the smaller minor workers which are 2-4 mm long with smaller heads (Fig 3). Some authors believe that the Pheidole species are lipophilic and therefore may be attracted to relatively greasy scalps [5]. In all reports of ant-induced alopecia, including our additional cases, the hairs have been cut just above the skin surface (Fig 2) [1-7]. There are no reports in which the ants cut the hairs further up the hair shaft far from the skin. In some of our cases, a few erosions were observed on the skin within the localized area of hair loss (Fig 1). These findings lead us to hypothesize that the ants feed on sebum and/or scales of the scalp and cut the hairs only to assist in exposing their way to the skin surface.

Figure 1. Ant-induced alopecia. There are some minor erosions on the skin in the localized area of hair loss on vertex.

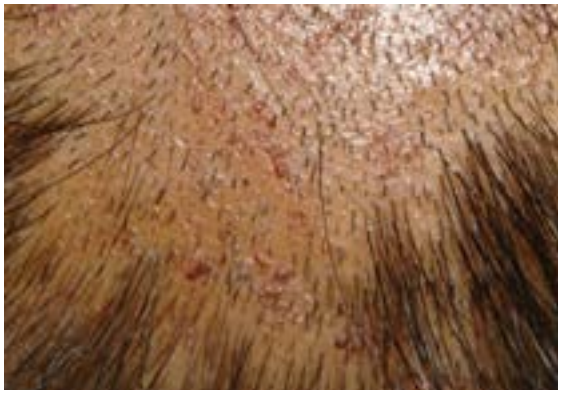

Figure 2. Ant-induced alopecia. The hairs have been cut just above the skin surface. No significant erosion was found.

Figure 3. Three major workers with large heads and one smaller minor worker of species Pheidole pallidula.

P. pallidula is widespread in Iran, Turkey, many European countries of the Mediterranean region, North Africa, and also in the US [8-10]. However, the hair cutter cases have been reported mainly from Iran, with only one case recently reported from Turkey. The explanation for geographical localization of hair cutter cases in Iran can be different feeding habits of the ants, different material used for building human houses that may prevent or facilitate traffic or life of ants, or different sleeping habits of people

in these areas. In Iran, it is common for people, including newborns and infants, to sleep on thin mattresses on the floor. Since P. pallidula can be found in many houses feeding on food remnants, and they tend to be nocturnal foragers in warm climates, these ants have easy access to the human scalp at night [11].

P. pallidula is not known as a vector for any diseases. Except for hair cutting and maybe rare cases of mildly pruritic bites, this ant does not cause any harm to humans. Ant-induced alopeica does not require any treatment; avoiding re-exposure to the ant is helpful to prevent further hair loss. Knowledge of this entity may help health providers in making accurate diagnoses in patients with localized alopecia and prevent un-necessary diagnostic procedures or psychiatric consultations.

Conflict of Interest

The authors do not have any conflicts to disclose. The Center for Dermatology Research is supported by an unrestricted educational grant from Galderma Laboratories, L.P.

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