The importance of trichological examination in the diagnosis of alopecia areata *

A importância do exame tricológico no diagnóstico da alopecia areata

Angélica Pimenta da Silva[1]
José Marcos Pereira[1]
Ana Paula Galli Sanchez[2]

Abstract: In this article we discuss the propedeutic aspects of alopecia areata, especially those found by dermatoscopy, an invaluable tool for diagnosis of the condition. Dermatoscopy facilitates the early detection of the characteristic changes in alopecia areata hair such as exclamation-point hairs, cadaverous hair, fuzzy hair, vellus type hair and yellow spots.
Keywords: Alopecia; Alopecia areata; Dermoscopy

Resumo: Neste artigo, destacam-se os aspectos propedêuticos da alopecia areata, em especial, os encontrados na dermatoscopia, ferramenta muito útil para o diagnóstico. A dermatoscopia facilita a detecção precoce das alterações características dos cabelos na alopecia areata, como: pelos em ponto de exclamação, pelos cadavéricos, fuzzy, pelos tipo velo e pontos amarelos.
Palavras-chave: Alopecia; Alopecia em áreas; Dermatoscopia

The pathogenesis of alopecia areata (AA), an inflammatory dermatosis, involves genetic and immunological factors. [1,2] The disorder most frequently affects the scalp, but can also occur in other areas such as the eyebrows, eyelashes, beard and pubic hair. [2]

AA is clinically classified in a number of different forms according to the quantity, extent and topography of lesions. The classic forms include: AA in plaques; ophiasic AA (pattern of hair loss affecting the frontoparietal, temporal and occipital regions); total AA (total loss of terminal hair of the scalp without involvement of other body hair); and 'AA universalis', spreading to the entire epidermis. The atypical forms are: Sisaifo-type alopecia areata (inverse ophiasis), reticular AA and diffuse AA. [1-3]

The diagnosis of AA involves studying the patient´s case history, conducting a clinical examination and trichological workup. AA contains numerous propedeutic signs, thus a careful trichological examination is essential for diagnosis. [1,4]

The trichological examination includes examining spontaneous hair fall, a gentle traction test, a pull test, a trichogram and dermoscopy. In this article we refer to a number of basic steps for diagnosing AA such as the gentle traction test, the trichogram and in particular the use of capillary dermoscopy (also called trichoscopy).

Mild redness and swelling can be observed in the case of an evolving AA plaque. The plaques are usually asymptomatic, although slight pruritus or a local burning sensation can occur. [1,2,5] The hairs detach

Received on 21.05.2010.
Approved by the Advisory Board and accepted for publication on 27.07.10.
* Work undertaken at the Department of Dermatology, Padre Bento de Guarulhos Hospital Complex, Guarulhos (SP), Brazil.
Conflict of interest: None / *Conflito de interesse: Nenhum*
Financial funding: None / *Suporte financeiro: Nenhum*

[1] Dermatologists (MDs)/ collaborating doctors in the Department of Dermatology, Padre Bento de Guarulhos Hospital Complex, Guarulhos (SP), Brazil.
[2] Master of Science awarded by the Faculty of Medicine, University of São Paulo (USP), Attending Physician in the Department of Dermatology, Padre Bento de Guarulhos Hospital Complex, Guarulhos (SP), Brazil.

easily by gentle traction on the periphery of plaques **(gentle traction sign).** [1,2,5,6] Note however that this sign is not specific to the acute phase of plaque AA and can occur in the diffuse forms of AA, as well as in the initial telogen effluvium.[1.7] In the more chronic phases of AA this approach may however prove negative. [1.2]

The hairs that detach easily on gentle traction are called **obsolete hairs -** either anagen or telogen (the latter caused by premature follicular maturation). They can involve hair shaft dystrophy and therefore, wick-like, may break close to the scalp or inside the acrotrichum.

With the evolution of the disease, the surface(s) of the alopecia area(s) may become slightly atrophic, but never with scarring. [2]

Inui *et al* and Tosti *et al* were the first to publish papers on AA dermoscopic findings. [4,7- 9]

Dermoscopy reveals the following in the initial phase of AA:

Exclamation-point hairs: thinner and less pigmented at the base, thicker and more pigmented at the distal end (Figure 1), [1-3,5,7,8] occurring more frequently at the periphery of the plaque, and indicating disease activity. [4,5,9] Exclamation point hairs can also be spindle-like, similar to those found in cases of beaded hair (monilethrix).

Dystrophic shafts: brittle and odd-shaped pieces of hair stems due to keratinization defects. [1.7]

Cadaverous hair: caused by a fracture of the shaft inside the hair follicle, near the acrotrichum, producing large blackhead-like spots within the follicular ostia [1-3,4,7,8] also indicating disease activity. [4, 5.9]

White fur *(fuzzy hair):* very fine achromic shiny hairs, with tapered distal ends, less than half a centimeter long. [1] Origin unknown.

Fleece-type hair: found in areas of remission. [4,7,9,10]

Hair bendability or 'elbow sign' *(Coudability-coudé)*: typical of apparently normal hair which, due to keratinization changes, has a fragile shaft and folds easily on itself when spread or pushed along its axis toward the scalp. [1]

Trichoptilosis: longitudinal splitting of the distal end of the hair (1-3mm). [4.8]

White hair: at the recovery stage of AA many hairs apparently return to normal, but with no pigment. [1] AA affects black dark hair more than white hair, probably due to aggression to the melanocytes.

Yellow spots: when the hair follicle loses all or part of the stem, leaving an empty infundibulum, this can accumulate sebum which turns yellow when oxidized. The yellow spots also occur in androgenetic alopecia (when hair follicle is empty at the xenogenous stage). [3,4,7]

As the lesions progress to more chronic phases of AA the presence of these signs is no longer detected and mild **follicular hyperkeratosis** may occur, indicating a poor prognosis. [2.10]

Finally, numerous telogen hairs can be observed in the trichogram [1,2,4-7] with bulbs or club-shaped tips either of similar size or with dystrophic tips (Figure 2). The "**Widy´s sign**" describes an accumulation of melanin pigments in the stem near the bulb. [1,2,6] Thinning and hypochromia of the proximal shaft (portion of hair closest to skin) can also be

Figure 1: Dermoscopy. Classic peladic hair. Close to the scalp the hair is thin and light colored, slowly increasing in bulk and turning dark and normal-looking towards the distal

Figura 2: Trichogram. Three hairs in the telogen (resting) phase with normal appearance, with epithelial sac, all of the same size and a hair (left) in the catagen phase (transition phase from growth to rest).

observed. The presence of large numbers of dystrophic hairs indicates poor prognosis. [1]

In conclusion, we believe that a trichology examination assists the diagnosis and assessment of the progression of any capillary disorder. [3,7,8,10] In cases of suspected AA, a dermoscopy and trichogram enhances diagnostic confirmation while eliminating the need for invasive anatopathology evaluations etc. The trichological examination should therefore be incorporated into the diagnostic methods employed by the dermatologist given that it is a highly effective way of diagnosing AA. ❑

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MAILING ADDRESS / ENDEREÇO PARA CORRESPONDÊNCIA:
Angélica Pimenta da Silva
Av. Mariana Ubaldina do Espírito Santo, 249 – Ap. 51d, Macedo
07197-000 Guarulhos - SP, Brazil
Phones: +55 (11) 2409-7173 / (17) 3231-1988
E-mail: angelicapimenta2005@hotmail.com

How to cite this article/*Como citar este artigo:* Silva AP, Sanchez APG, Pereira JM. The importance of trichological examination in the diagnosis of alopecia areata. An Bras Dermatol. 2011;86(5):1039-41.