

Circular hairs: nomenclature and meanings*

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Abstract: Trichoscopy has become an essential tool for the diagnosis of various diseases that affect the hair and scalp. Through dermatoscopy we identified a set of findings that share a circular shape of hair shafts. The objective of this study is to distinguish among the various forms of circular hairs in order to identify their peculiarities and to describe in which skin disorders they can be found.

Keywords: Alopecia; Clinical diagnosis; Hair diseases

INTRODUCTION

Trichoscopy has become an essential tool in the diagnosis of a wide range of diseases that affect the hair and scalp. In recent years, the vast quantity of descriptions of trichoscopic findings has considerably helped medical professionals to understand many medical conditions, making it less necessary to perform invasive procedures.¹

The follicular openings, perifollicular epidermis, cutaneous microcirculation, and hair shafts are among the structures that can be studied through trichoscopies.^{2,3}

Observing hair shafts with circular shapes is relatively common and can represent a trichoscopic path toward the diagnosis of some clinical conditions.

The present study sought to name the many forms of circular hairs, highlight some of their peculiarities, and identify the skin disorders in which they have been reported.

DISCUSSION

Circular-shaped hairs still raise many doubts concerning their true clinical meaning and their diagnostic value, most likely due to the fragile specificity of their findings, their morphological diversity, and the lack of the standardization of the nomenclature used to describe them.

In the literature, we can find the terms: "circle hair", "rolled hair", "pigtail hair", "hook hair", "coiled hair", and "corkscrew hair" to describe some of the structures viewed by trichoscopies, which, though similar, represent different findings, found many times in distinct diseases (Figure 1).

The term *circle hair* was first used in 1963 by Adatto. It represents a hair growth disorder characterized by the asymptomatic presence of hairs with a perfect circular or spiral arrangement, not associated with follicular abnormalities or inflammation (Figure 2).⁴ These are seen almost exclusively on the dorsum, on the abdomen, on the shoulders, and on the thighs, mainly in overweight men.



FIGURE 1: Schematic illustration of the forms of circular hairs and their variations

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FIGURE 2: Trichoscopy of the lower limb, showing the presence of *circle hair* (magnified X20)



FIGURE 3: Trichoscopy of the side of the upper limb with follicular keratosis associated with atopic dermatosis. Note the presence of discrete erythema, leading to peeling and subcorneum *rolled hair* (magnified X20)

These are generally found among normal hairs and are commonly smaller in size and diameter than the other hairs.^{4,5} No clear consensus has been reached regarding *circle hair*. One possible cause that has been raised is their incapacity to emerge through the stratum corneum due to their smaller diameter, which would lead to their curling, forming perfect circles.^{4,5} Some authors refute this mechanism, justifying that the follicular ostium would remain permanently open and that the hair would not necessarily perforate it to reach the skin's surface.⁶ In fact, this seems to be a genetically determined question, originating from an internal layer of the remaining curly hairs present in many mammals, which would be responsible for keeping the body warm.⁶

The term *rolled hair*, though it is commonly used as a synonym for *circle hair*, in fact refers to a distinct hair growth disorder, which is more frequent.⁴ Different from *circle hair*, *rolled hair* does not have a perfectly circular format and can be the result of mechanical trauma caused by frequent and repeated friction (Figure 3).^{4,5} The presence of follicular keratotic papules, together with the *rolled*

hair, may well suggest a possible relation with the palmoplantar keratoderma and other dermatoses associated with xeroderma.^{5,6} In addition, *rolled hair* has been found in inflammatory diseases, such as lupus and alopecia areata.⁴⁻⁶ It can be inferred that the distorted form of this hair is due to the fact that it is very thin and that it is often unable to pass through the corneum layer

The term *pigtail hair* refers to a type of circular or oval hair with a tapered extremity, similar to a pig's tail. Some authors consider it to be a variant of *rolled hair*, and it has been described as an uncommon finding associated with repilation in patients that undergo an acute and diffuse hair loss, as in the alopecia induced by chemotherapy and in alopecia areata. This is also commonly observed on the margin, with cicatricial alopecia (Figures 4, 5, and 6).^{2,7}

Coiled hair is similar to *pigtail hair*, but it presents a thicker extremity. Much like the *hook hair*, it can be present in cases of trichotillomania (Figure 7).^{2,7}



FIGURE 4: Trichoscopy of the alopecia areata plaque, presenting black points, fractured hair, yellow points, *rolled hair*, and *pigtail hair* (magnified X20)



FIGURE 5: Trichoscopy of androgenetic alopecia, showing variability in the diameter of the hair shafts and the presence of *rolled hairs* (magnified X20)

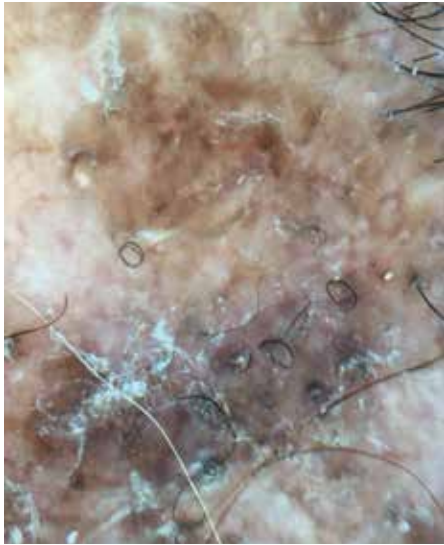


FIGURE 6: Trichoscopy of discoid erythematous lupus, presenting a healing area with the loss of follicular openings. Diffuse brown color. Perifollicular and interfollicular flakes, rolled hair, pigtail hair, and coiled hair (magnified X20)

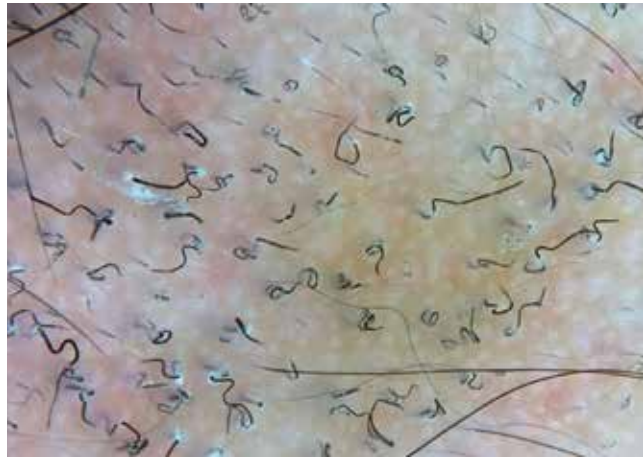


FIGURE 8: Corkscrew hairs and comma hairs, found in the tinea capitis (magnified X20)



FIGURE 7: **A:** Circular form of hair with tapered extremity, similar to a pig's tail (*pigtail hair*) (magnified 20x) **B:** the portion near the shaft bends like a hook (*hook hair*) (magnified X20) – Courtesy of Dra. Bruna Duque-Estrada

In the *tinea capitis*, hairs can take on a form of *corkscrew hair*, winding many times around itself, or of *comma hair*, which can be associated with the presence of flakes, fractures, erythemas, pustules, and crusts (Figure 8).^{2,7}

CONCLUSÃO

Trichoscopy has become a valuable tool for the dermatologist in the diagnosis of diseases that affect the hair and scalp. Circular hairs represent part of these findings. In this sense, though the current literature has not shown any specific correlation between the morphology of these hairs and the diseases in which they are generally found, knowledge regarding their respective characteristics are necessary to properly employ the trichoscopic nomenclature, the inclusion of differential diagnoses, and the appropriate therapeutic medical advice provided to the patient. □

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