

# Trichoscopy in the Differential Diagnosis of Pseudonits

Francesco Lacarrubba · Anna Elisa Verzì · Giuseppe Micali

Dermatology Clinic, University of Catania, Catania, Italy

## Keywords

Dermatoscopy · Dermoscopy · Trichoscopy · Hair disorder · Parasitosis · Seborrheic dermatitis · Hair casts · Trichobacteriosis · White piedra · Trichorrhesis nodosa

## Abstract

**Aim:** The purpose of the study was to describe the trichoscopic features of pseudonits and to assess the usefulness of trichoscopy in their differential diagnosis. **Methods:** A retrospective study was performed on those patients seen for the suspicion of head or pubic lice and who underwent trichoscopy with polarized light at  $\times 10$  magnification for a more accurate diagnosis. Forty-two patients (28 males/14 females, mean age: 34.5 years, range: 7–59) were evaluated. **Results:** In 30 cases, trichoscopy confirmed the suspicion of head (24 cases) or pubic (6 cases) lice, whereas in 12 cases it allowed for a final diagnosis of seborrheic dermatitis (5 cases), hair casts (3 cases), trichobacteriosis (2 cases), white piedra (1 case), and trichorrhesis nodosa (1 case), by showing different types of pseudonits. **Conclusion:** Hair examination using trichoscopy in routine clinical practice may provide useful information for the correct diagnosis, ranging from common

head and pubic lice infestations to rarer shaft abnormalities. Differentiating pseudonits from nits is essential to make the correct diagnosis in order to prevent unnecessary treatment, anxiety, and/or embarrassment.

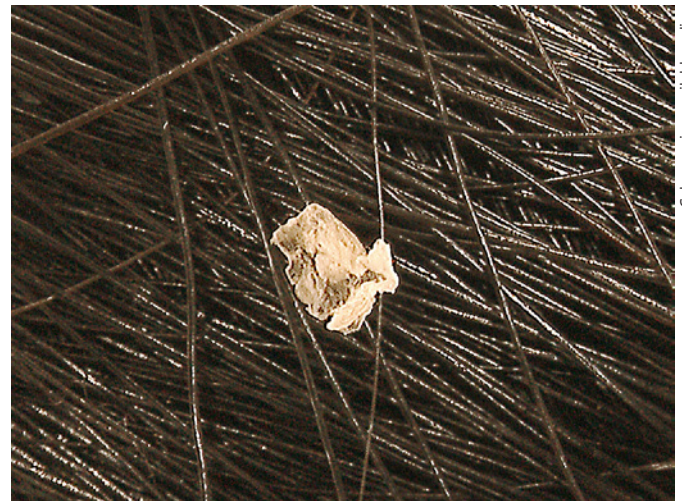
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## Introduction

The term “pseudonits” refers to a series of structures of the hair shaft that may clinically mimic the nits of head and pubic lice. They may be observed in some conditions such as psoriasis, seborrheic dermatitis, fungal/bacterial infections, and hair shaft abnormalities [1]. The diagnosis of pseudonits is generally clinical, but sometimes their presence may cause concern to both patients and physicians. Trichoscopy is a noninvasive and quick-to-perform tool that provides valuable information in a wide range of pediatric and adult hair and scalp conditions [2–8]. It has been reported to be useful for the diagnosis of head and pubic lice, being able to unequivocally identify the presence of parasites and nits, as well as to distinguish full nits from empty nits (Fig. 1) [9, 10].



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**Fig. 1.** Trichoscopy of head lice. Full nits, containing nymph and appearing as ovoid, brown structures with a convex extremity (yellow arrow) are shown. In addition, empty translucent nits, presenting with a plane and fissured free ending (green arrow) can be seen.

**Fig. 2.** Trichoscopy of scale of seborrheic dermatitis showing white, bizarrely shaped, amorphous structure.

**Table 1.** Pseudonits and trichoscopy findings

Number of cases	Trichoscopy findings	Diagnosis
5	Easily detachable white, bizarrely shaped, amorphous structures	Scales of seborrheic dermatitis
3	Elongated tubular structures encircling the hair shaft and easily movable along it	Hair casts (1 due to hair traction, 2 idiopathic)
2	Waxy and yellowish/whitish adherent aggregates forming a sheath surrounding the axillary hair shaft	Trichobacteriosis
1	Multiple, ovular whitish masses scattered along the hair shafts	White piedra
1	Localized whitish areas along the hair shafts, resulting from fractured and frayed hair	Trichorrhexis nodosa

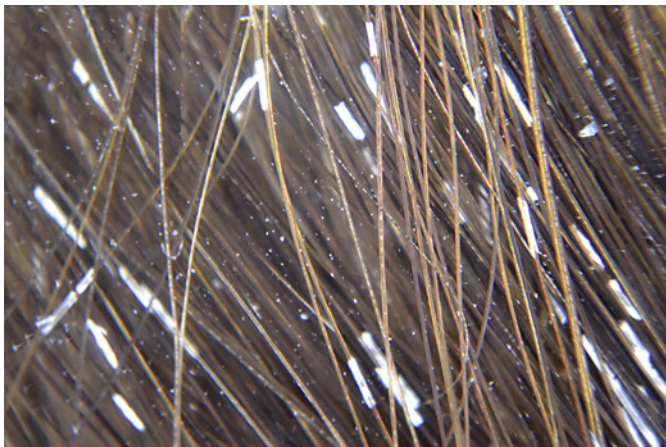
The aim of this study was to describe the trichoscopic features of pseudonits and to assess the usefulness of trichoscopy in their differential diagnosis.

### Materials and Methods

A retrospective study was performed on those patients seen at the Dermatology Clinic of the University of Catania from July to December 2017 for the suspicion of head or pubic lice and who underwent trichoscopy for a more accurate diagnosis. In all cases, trichoscopy was performed with polarized light at  $\times 10$  magnification (Dermlite; 3Gen, San Juan Capistrano, CA, USA). The study protocol was approved by our institute's committee on human research.

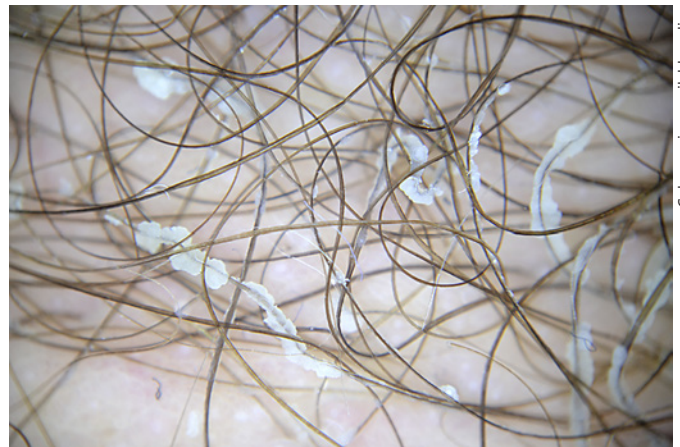
### Results

Forty-two patients (28 males/14 females, mean age: 34.5 years, range: 7–59) have been evaluated. In 30 cases, trichoscopy confirmed the suspicion of head (24 cases) or pubic (6 cases) lice, revealing the presence of full nits, containing nymphs and appearing as ovoid, brown structures with a convex extremity, as well as empty translucent nits, with a plane and fissured free ending, adherent to the hair shafts. In 12 cases, trichoscopy showed the presence of pseudonits that appeared with a different shape and consistency. In these cases, the final diagnosis was seborrheic dermatitis (5 cases), hair casts (3 cases), trichobacteriosis



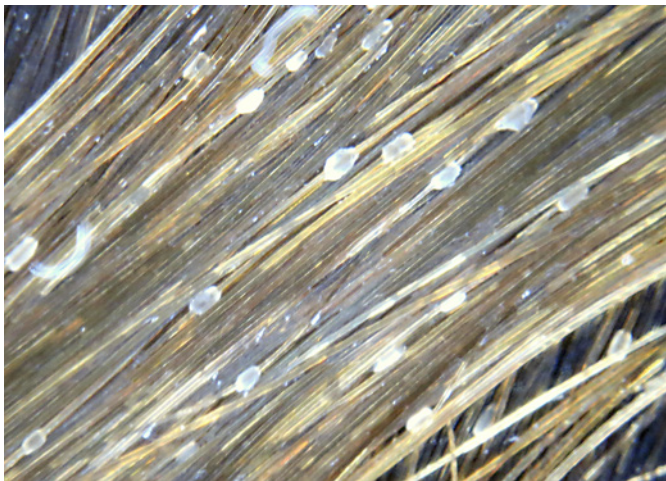
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**Fig. 3.** Trichoscopy of hair casts showing elongated tubular structures encircling the hair shaft.



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**Fig. 4.** Trichoscopy of trichobacteriosis of the axillae showing waxy and whitish adherent aggregates surrounding the hair shaft.



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**Fig. 5.** Trichoscopy of white piedra showing ovular, whitish masses along the hair shafts (courtesy of Dr. Ana Mósca, Rio de Janeiro, Brazil).



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**Fig. 6.** Trichoscopy of trichorrhexis nodosa showing a whitish area along the hair shaft, resulting from fractured and frayed hair.

(2 cases), white piedra (1 case), and trichorrhexis nodosa (1 case). In Table 1, the different trichoscopic characteristics of each disorder are described. The diagnoses of both trichobacteriosis and white piedra were confirmed by microbiological examinations.

## Discussion

Pseudonits may be observed in various dermatological conditions. Their appearance may vary according to the pathogenesis. They can present as whitish scales, fre-

quently seen in seborrheic dermatitis (Fig. 2) or psoriasis of the scalp, appearing at trichoscopy as easily detachable white, bizarrely shaped, amorphous structures on the hair shaft; although generally easily recognized at clinical examination, in children they can be misdiagnosed as nits [11]. Hair casts, also known as peripilar keratin casts, that clinically appear as white, tubular, freely movable structures encircling the proximal hair shafts of the scalp, and that may be primary/idiopathic when there is no associated scalp condition (Fig. 3), or secondary to traction alopecia (e.g., following tight hairstyles) or seborrheic dermatitis, psoriasis, lichen planopilaris and pemphigus, un-

equivocally show their morphology at trichoscopy [12]. Sticky concretions surrounding the hair shaft of the axillary/pubic region that may be observed in trichobacteriosis (also known as trichomycosis) (Fig. 4), an asymptomatic condition mostly caused by *Corynebacterium* spp. and generally associated with poor hygiene, obesity, and hyperhidrosis, at trichoscopy, typically resemble waxy and yellowish/whitish adherent aggregates forming a sheath surrounding the axillary hair shaft [13]. White piedra, a superficial mycosis common in tropical areas and caused by *Trichosporon* spp., is clinically characterized by the presence of multiple white-yellowish soft nodules along the hair shafts. At trichoscopy, the ovular scattered whitish masses are clearly shown [14] (Fig. 5). Trichorrhexis nodosa is a congenital or acquired defect of the hair shaft characterized by dry, dull, and brittle hair with small grayish-white or yellowish nodules distributed irregularly along the shaft, which may result from repeated trauma, combing habits, and use of heat or hair weathering. At trichoscopy, it appears as localized whitish areas with fractured and frayed hair [15] (Fig. 6).

In our cases, trichoscopy allowed an easy differential diagnosis between nits and pseudonits by showing in detail their peculiar aspects [16–23]. Hair examination using trichoscopy in routine clinical practice may provide useful information for making the correct diagnosis, ranging from common head and pubic lice infestations to rarer shaft abnormalities. Differentiating pseudonits from nits is essential to make the correct diagnosis in order to prevent unnecessary treatment, anxiety, and/or embarrassment.

### Statement of Ethics

The authors have no ethical conflicts to disclose.

### Disclosure Statement

The authors have no conflicts of interest to disclose.

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