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PHOTO QUIZ

PEER REVIEWED

White Spots on the Hair: Does This Woman Have Head Lice?

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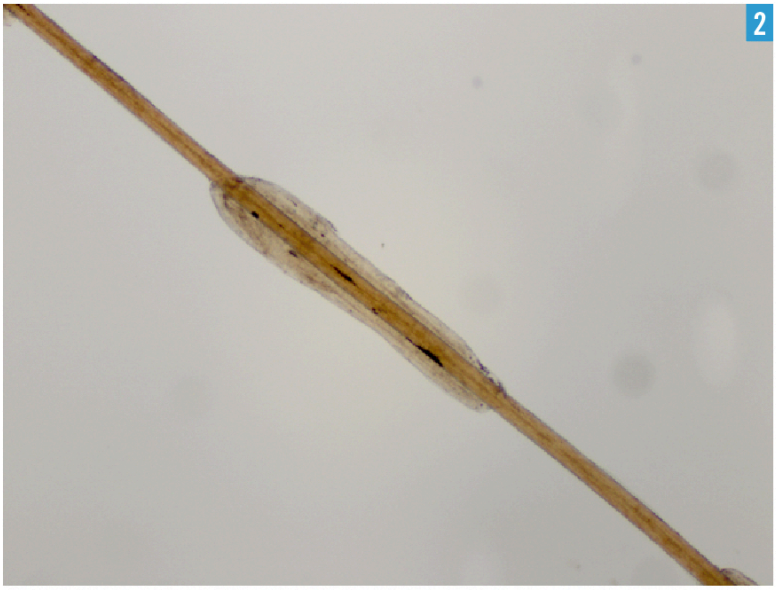
An otherwise healthy 26-year-old woman presented for evaluation of her hair. A few weeks earlier, she had noticed some white spots along her hair shafts and was concerned that she might have a head lice infestation. She denied having scalp pruritus and denied having problems with hair loss or breakage.

On physical examination, the patient was a healthy-appearing white woman with long blond hair. Her scalp appeared normal, without redness or scaling. There was no evidence of alopecia or hair fragility on gentle hair pull. No head lice were noted. On the bilateral posterior aspects of her scalp, numerous white, reflective bands, 2 to 3 mm in length, were distributed along the hair shafts. The bands were distributed primarily on the distal two-thirds of the hair and were firmly adherent to the hair shaft (**Figure 1**).

A few hairs were snipped off and examined under the microscope, the results of which are shown in **Figure 2** (magnification ×10).



Which one of the following is the most likely diagnosis?

A. Pediculosis capitis

B. White piedra

C. Trichomycosis

D. Hairspray residue buildup

E. Hair casts

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Answer: Hairspray Residue Buildup

Upon further questioning, the woman reported using hairspray daily. She noticed that the white spots were most prominent in the areas of her scalp where she sprayed frequently. After ruling out other causes for the lesions via clinical and microscopic examinations, it was deduced that the lesions were due to residue buildup from the patient's frequent use of hairspray.

DISCUSSION

The differential diagnosis for a patient presenting with acquired white lesions along the hair shafts is varied and includes pediculosis capitis, hair casts, dandruff, white piedra, trichomycosis, and artifacts such as residue from haircare products or other aerosol products.

Distinguishing the grayish white nits and eggs in a pediculosis capitis infestation is of prime concern in these patients, given that misdiagnosis may lead to unnecessary treatment and anxiety.[1] A proper diagnosis can be made based on clinical or microscopic examination. Patients with head lice will report intense pruritus. On close examination of the scalp, the visualization of nits, nymphs, or adult lice confirms the diagnosis.[2] Additionally, nits adhere firmly to the hair shaft; while our patient's lesions were adherent, microscopic examination revealed a cylindrical mass encompassing the circumference of the hair shaft. This finding is in contrast to the characteristic oval-shaped appearance of a nit, which adheres at an acute angle to only 1 side of the hair shaft.[2]

Hair casts, or pseudonits, are another common cause of white bands or nodes along the hair shaft. Hair casts are remnants of the inner root sheath that encircle hair shafts.[3] They are typically described as white tubular structures, 2 to 8 mm in length, which encase affected hair shafts.[3-6] While the exact pathogenesis remains unknown, hair casts most commonly arise in

the setting of inflammatory or scaling conditions of the scalp, including psoriasis, seborrheic dermatitis, lichen planus, and traction alopecia. The casts are thought to result from the failure of the inner root sheath to disintegrate before the hair emerges from the skin surface. The retained keratinized cells form a cast around the hair shaft, which persists as the hair grows.[3-6] Unlike nits, hair casts move freely along the hair shaft.[3] The firm adherence of our patient's lesions to the hair shaft allowed us to rule out a diagnosis of hair casts.

Given our patient's background, trichomycosis and white piedra were lower on the differential diagnosis list. Trichomycosis, also referred to as trichobacteriosis, is a relatively common bacterial infection that affects the hair shaft. It results from an invasion by gram-positive *Corynebacterium* species. On trichoscopic examination, yellowish brown, waxy concretions can be seen attached to the central portion of infected hair shafts, giving them a beaded appearance.[7,8] White piedra is a superficial fungal infection caused by *Trichosporon* species that can affect the hair shaft. The patient will present with numerous, loosely adherent, white nodules distributed along affected hair shafts.[7] Trichomycosis and white piedra both have a male predilection, tend to occur in tropical climates, and rarely affect scalp hair.[7,8] Even though our initial suspicion for these conditions was low, trichoscopic examination firmly excluded both conditions.

OUTCOME OF THE CASE

The patient was counseled on the benign nature of her lesions. It was recommended that she discontinue the use of her hairspray in order to eliminate future residue buildup.

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