Reconstructive Surgery & Anaplastology

Short Communication

Trichoscopy: An important method for the differential diagnosis of hair and scalp diseases

Mustafa Turhan Sahin

Abstract

Scalp Dermoscopy or 'trichoscopy' represents a valuable, noninvasive technique for the evaluation of patients with hair loss. It allows for magnified visualization of the hair and scalp skin, and may be performed with a manual dermoscope or a videodermoscope. The usual working magnifications are 20-fold to 70-fold. Although the handheld dermoscope with 10-fold magnification may give easy and quick evaluation of hair, it does not precisely measure or document. Trichoscopy is a helpful tool in differential diagnosis of common acquired hair diseases, such as androgenetic alopecia, or diffuse alopecia areata. In androgenetic alopecia, hair diameter diversity, perifollicular pigmentation/peripilar sign and yellow dots trichoscopically observed. This method is simple, quick and easy to perform, reduces the need for scalp biopsy, is well accepted by patients, and is useful for monitoring treatment and followup. It represents a valuable link between clinical and histologic diagnosis. New data show that trichoscopy may easily replace light microscopic evaluation of pulled hairs in genetic hair shaft abnormalities. Features such as hair thickness, number of hairs in one pilosebaceous unit, or terminal to vellus hair ratio may be assessed. Visualization of hair follicle ostia allows identification of follicles that appear normal, empty, fibrotic (White dots in trichoscopy), filled with hyperkeratotic plugs (Yellow dots in trichoscopy), or containing cadaverized hairs (Black dots in trichoscopy). Abnormalities of scalp skin color and structure, which include honey-comb type hyperpigmentation, perifollicular discoloration, perifollicular fibrosis, and abnormal perifollicular microvessels, can also be visualized by trichoscopy. As it is important to consider various trichoscopic findings together to establish the diagnosis of different hair and scalp diseases, characteristic trichoscopic features of each of them will be discussed in this presentation.

Hair loss is the most common hair problem and a prompt diagnosis of the type of alopecia may sometimes be extremely challenging. Methods commonly used to investigate may be invasive (biopsy), semi invasive (trichogram) or non-invasive (hair count, weighing shed hair and pull test). Dermoscopy, also known as epiluminescence microscopy or skin surface microscopy is a non-invasive, in-vivo technique, most commonly used for viewing pigmented skin lesions. It has been proved to be of great value in improving the accuracy of diagnosis of melanomas. In 2006, Lidia Rudnicka and Malgorzata Olszewska coined the term "Trichoscopy" for dermoscopy of hair and the scalp. For scalp examination, a manual dermoscope (×10 magnification) or a videodermoscope with lenses ranging from ×20 to ×1000 magnification can be used. This article attempts at sensitizing readers to the trichoscopic features associated with the most common scalp and hair disorders. All the images have been taken using Delta 20 (Heine, Germany) and videodermoscope (Derma India).

Dermoscopy of normal healthy scalp shows follicular units containing 2-4 terminal hairs and 1 or 2 vellus hairs. In darker races, a prominent brown homogenous honeycomb pigment network is seen over the scalp which is accentuated over sun-exposed areas. Trichoscopic evaluation of normal and diseased scalp is based on study of follicular patterns, interfollicular patterns and hair signs. Most of the manual dermoscopes are contact dermoscopes, which require an interface solution like oil or alcohol. However, videodermoscopes are non-contact dermoscopes and usually have three modes, the white light, ultraviolet (UV) light and the polarized light (PL). Videodermoscopes in addition, provide for a better consultation as the doctor and patient can view the video graphic images simultaneously and also record the selected images for comparison during the subsequent follow-up.

The interfollicular patterns, which relate to vascular structures and pigmentation, are visualized only with a polarizing light source or a polarizing filter. Pigment patterns are best observed through a contact dermoscope with an interface solution whereas vascular patterns are best seen through a videodermoscope, as direct contact can result in blanching. However, in the darkly pigmented skin, the heavy pigment obfuscates the vascular patterns.

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Mustafa Turhan Sahin
Celal Bayar University, Turkey E-mail: mustafaturhans@gmail.com