

A Case of Tufted Hair Folliculitis

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Tufts folliculitis is an uncommon folliculitis of the scalp that resolves with patches of scarring alopecia within which multiple hair tufts emerge from dilated follicular orifices.

Each tuft consists of 5 to 20 normal-appearing hairs arising from a single follicular orifice. It has a prolonged relapsing clinical course, and results in a scarring alopecia. Systemic antibiotics and steroids are commonly used for anti-inflammatory effects, but have only a brief response.

Here, we report a case of tufted hair folliculitis in a 36-year-old woman, with the clinical, histological findings and computerized hand-held phototrichogramical evaluations. (Ann Dermatol (Seoul) 19(4) 189~192, 2007)

Key Words: Tufted, Folliculitis, Phototrichogram

INTRODUCTION

Tufted hair folliculitis (THF) was first noted in 1970, by Tagami et al.^{1,2} as numerous multiple hairs, and later in 1978 by Smith et al.³, termed as a tufted hair folliculitis (THF). Characterized by multiple hair tufts scattered within the patch, each tuft consist of 5 to 20 normal-appearing hairs arising from a single dilated follicular opening. They result in scarring alopecia with sclerotic, erythematous, shiny skin.

We report a case of THF, and will discuss the clinical features, phototrichogramical, histopathologic findings, treatments and possible pathogenesis.

CASE REPORT

A 36-year old woman presented with an inflam-

matory swollen patch of the scalp of 8 months duration (Fig. 1). The patient was said to have been treated with topical and systemic antibiotics at local clinics, but the condition worsened with peripheral extension of inflammation.

Physical examination revealed within a 5 × 6 cm sized tender area, scattered tufts composed of 7 to 15 hairs emerging from a single follicular ostia. Slight pressure on the perifollicular areas resulted in the discharge of purulent materials through the dilated follicular openings. Both KOH staining and fungal culture were negative. *Staphylococcus aureus* was not isolated from the affected area.

Histopathology of the affected areas confirmed the diagnosis of tufted hair folliculitis, with additional findings of a widened follicular infundibulum, dense perifollicular inflammatory cell infiltrations and dermal fibrosis in the upper dermis. In the lower dermis, there were less inflammatory cells with intact hair follicular units. In a single follicular orifice, several hairs were emerging (Fig. 2).

We evaluated the lesion with a computerized hand-held phototrichogram system (Folliscope[®], LeadM Corporation, Seoul, Korea). The phototrichogram system was applied to the central area of the lesion for measurement after shaving with a blade. We easily calculated the average hair density of the lesion (354/cm² in tufted hair folliculitis, 106

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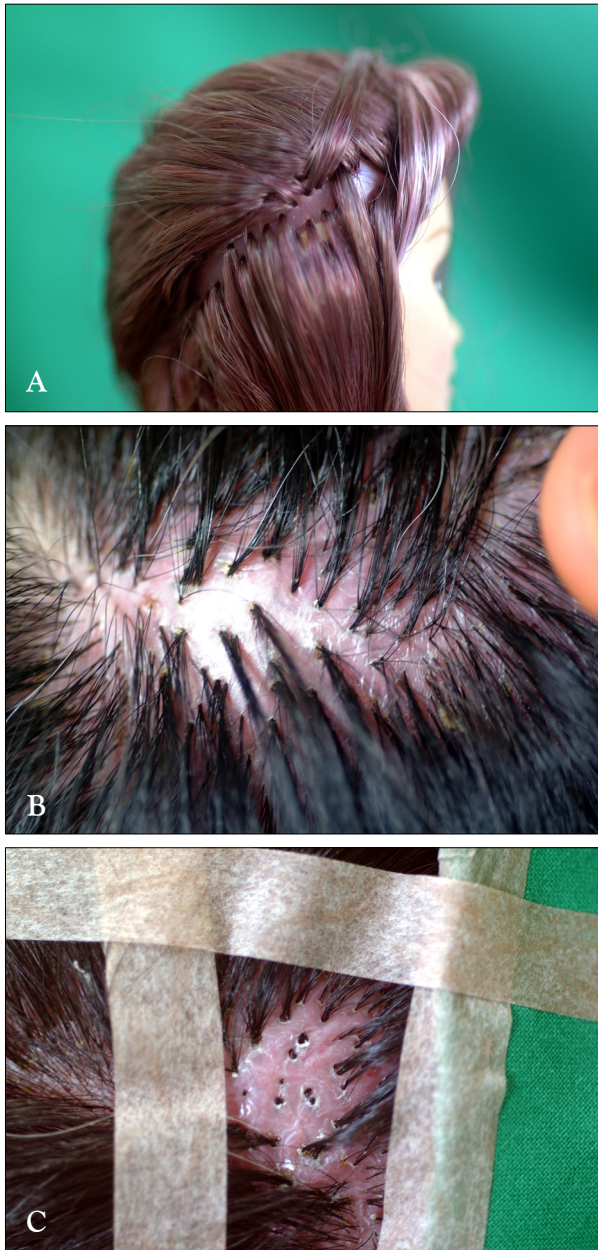


Fig. 1. (A) A doll. Bundles of hairs emerging from single openings, (B), (C). A 36-year old patient. Several hair tufts are present within swollen patch giving a 'dolly hair' appearance as seen in Fig. 1(A).

$\pm 23/\text{cm}^2$ in average normal control). We could easily obtain the quantitative data of the hair of THF without pulling out the hair, using the computerized hand-held phototrichogram system (Fig. 3).

We treated the patient with oral antibiotics (Cefditoren Pivoxil, Cephalosporin 3rd generation),

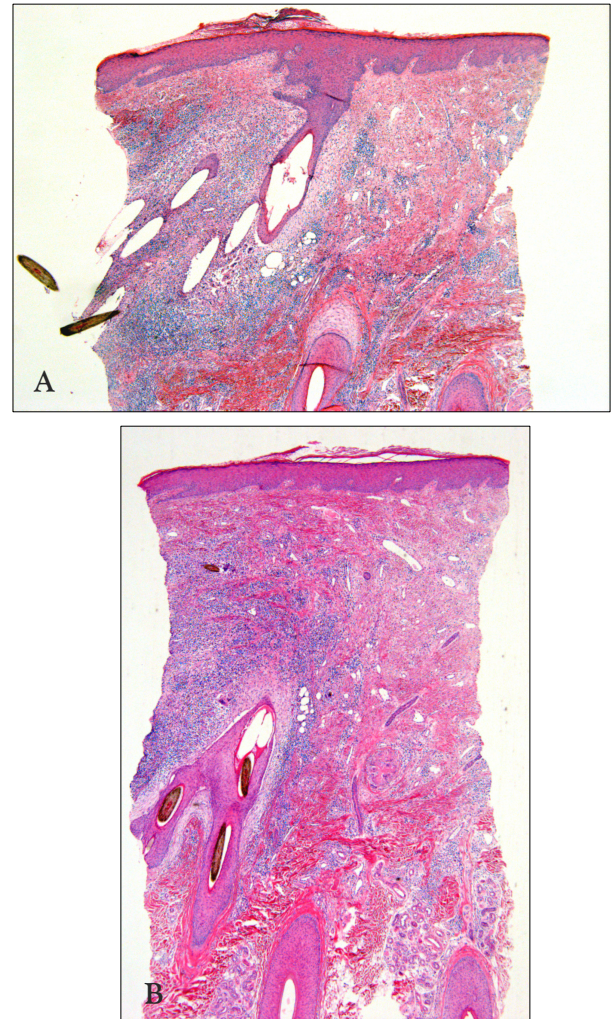


Fig. 2. Serial sectional views. (A). Convergence of independent hair structures towards a single orifice in the epidermis (H&E, $\times 40$), (B). Widened follicular infundibulum and perifollicular inflammation in deeper dermis (H&E, $\times 40$).

oral steroids (Triamcinolone) and topical steroid (Prednicarbate 0.25%) for 5 months. The affected lesion was improved leaving scarring alopecia. For scar contracture release, surgical excision of scarring alopecia was performed with a blade and no recurrence was found after 18 months.

DISCUSSION

Hair follicular units on the human scalp consist of two or four terminal follicles and one or two

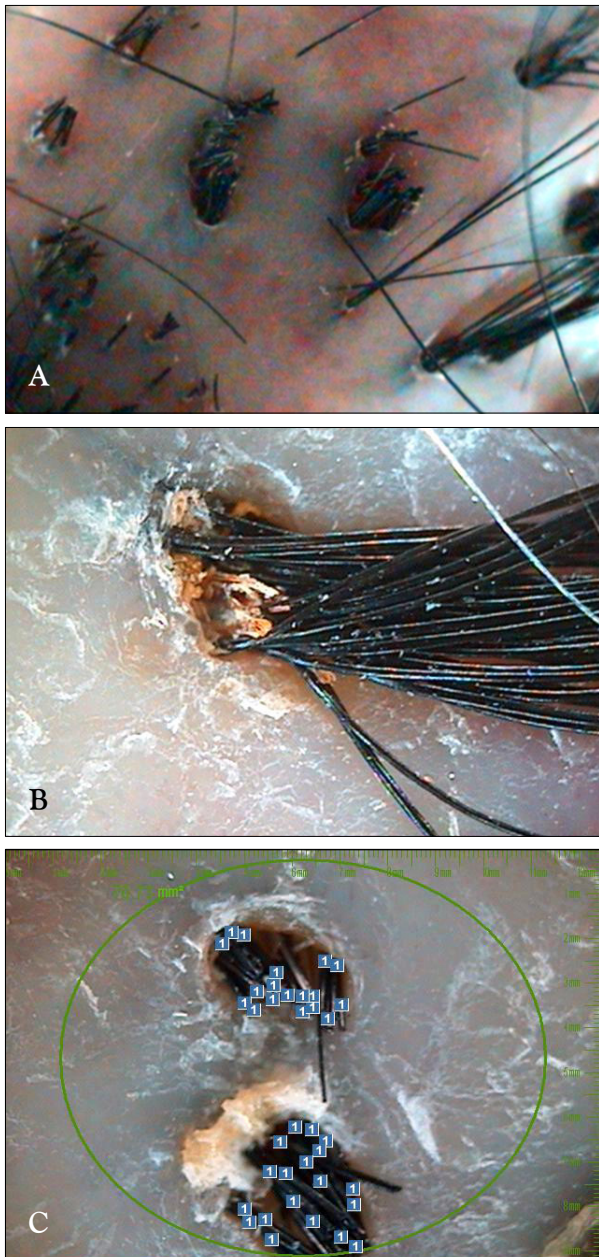


Fig. 3. (A). Within a extended bald patch, scattered follicular openings are shown (phototrichogram, magnification of $\times 30$), (B). 5-10 normal looking hairs are arising from a common follicular ostium (phototrichogram, magnification of $\times 60$), (C). Automatically calculated hair density in $\times 60$ magnification (phototrichogram, magnification of $\times 60$).

vellus follicles. Generally, human hairs emerge singly from their follicles⁴. However, in chronic pyogenic conditions such as folliculitis decavans or

folliculitis keloidalis, multiple hairs can be noted and termed as THF. These lesions may result in permanent and irreversible scarring alopecia^{5,6}. THF occurs in both genders, with male-female ratio of 2.7:17. Patients are usually between the ages of 19 and 68 years, and the lesion is usually confined to the parietal and occipital areas⁸.

The cause of THF is unknown, however, several pathogenetic mechanisms have been proposed to explain the development of tufted folliculitis, including naevoid abnormality, retention of telogen hair in the tufts and infective folliculitis leading to the destruction of the upper part of the follicles with the formation of a common channel^{1,3,9,10,11}. However, Pujol et al. suggests that THF may be a nonspecific secondary phenomenon that may occur in several exudative inflammatory diseases, such as dissecting cellulites of the scalp and folliculitis keloidalis¹².

As the THF has a characteristic finding of hairs and a unit, we proposed that magnifying the view of the lesion could be an alternative method for the diagnosis of THF. We evaluated the lesion using the phototrichogram, which is very useful to investigate hair biology. The computerized hand-held phototrichogram is used in many clinical researches because it can effectively calculate the average hair density, hair thickness and linear hair growth rate¹³⁻¹⁶. In our patient, using the phototrichogram, we got a magnified view of the lesion and easily calculated the number of hairs emerging from a single opening (Fig. 3). We also calculated the density and the result showed a higher density than the normal control's. There is a limitation in this report in that only one patient has been evaluated and the result cannot suggest the diagnostic densities of THF.

For treatment, systemic antibiotics and corticosteroids can suppress the inflammatory response, but produce only slight improvements and no lasting effects after the treatment stops. Treatment of this relapsing condition leading to progressive scarring alopecia has been notoriously difficult¹⁷. In our case, we gave the patient oral steroid and oral antibiotics, for these drugs have anti-inflammatory effects. Nevertheless, these drugs were not able to change the course of the disease. Therefore we undertook the surgical excision of the scarring alopecia.

We report a case of THF showing a 'dolly hair'

appearance with the histopathologic and phototrichogramical findings.

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