Two Cases of Pityriasis Versicolor on the Scalp in the Course of Treatment for Alopecia Totalis

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INTRODUCTION

Pityriasis versicolor (PV) is a superficial and non-inflammatory mycosis involving the human skin, and is characterized by an eruption of macular and scaly lesions in a range of colors[1,2]. Some of the *Malassezia* species are known to be the etiological agent of PV, and exist also as saprophytes on normal or seborrheic human skin[3~7]. The sites most commonly involved are the upper part of the trunk, axilla, and upper limbs, whereas the face and scalp are less commonly involved[8,9]. Until now the pathogenic process remains obscure, but several contributory factors including steroid therapy are known to be involved in the development of PV. Herein, we report two cases of PV on the occipital scalp in the course of treatment with steroid for alopecia totalis.

CASE REPORT

Case 1

A 13-year-old girl was presented with brownish scaly patches on the occipital scalp (Fig. 1A). She was in the course of her treatments by intralesional triamcinolone injection and diphenylcyclopropenone local challenge for alopecia totalis. She used to use wig for her bald scalp. KOH examination and PAS staining of the scales of hyperpigmented patches showed short, flexible, and fragmented hyphae (Fig. 2). The lesion showed an characteristic greenish-yellow fluorescence on Wood's lamp. After a diagnosis of PV was made, she was treated with oral itraconazole 200mg daily for 7 days and topical isoconazole nitrate preparation. Two weeks later, the lesion disappeared (Fig. 1B) and showed negative findings for mycological examination and Wood's lamp. For the following 1 year, there was no evidence of recurrence.

Case 2

A 16-year-old boy was presented with brownish, branny scaled patches on the occipital scalp during his treatments of intralesional triamcilnolone injection and diphenylcyclopropenone local challenge for alopecia totalis. He also used wig for his bald scalp. The lesion was positive by mycological examination and Wood's lamp. He was diagnosed to have PV and was treated with oral itraconazole 200mg daily for 7 days and topical isoconazole nitrate preparation. The lesion began to be regressed slowly 2 weeks later and showed negative findings by mycological examination and Wood's lamp. Recurrence had not occured to him by follow-up observation for 8 months.

DISCUSSION

The genus *Malassezia* are recently divided

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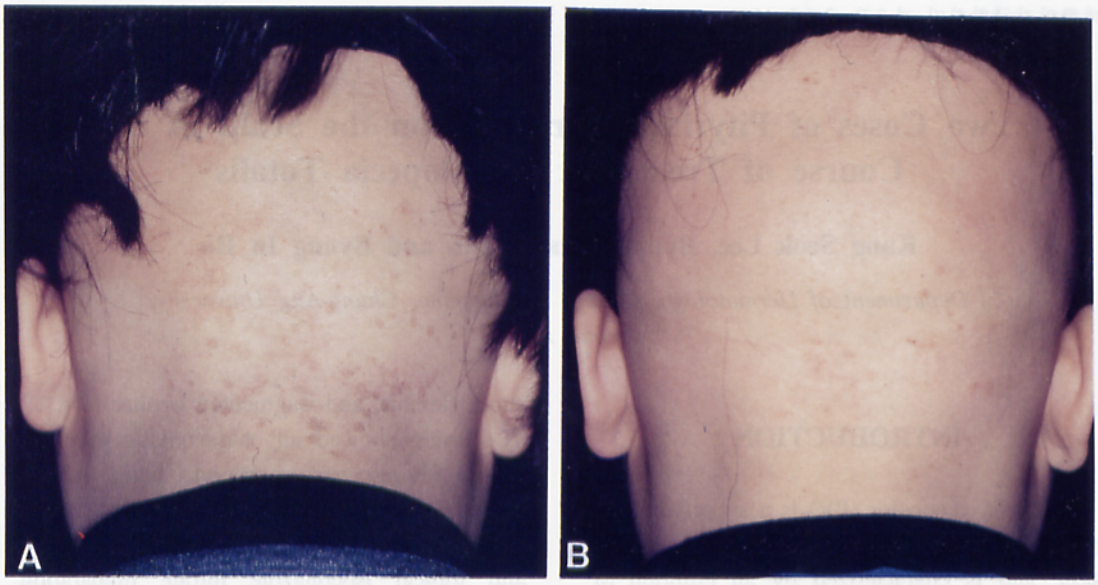

Fig. 1. Case 1. A: prior to treatment, B: after treatment with oral itraconazole and topical isoconazole nitrate preparation for 7 days.

into 7 species according to the report of Gueho et al[10] and they are *M. furfur, M. pachydermatis, M. sympodialis, M. globosa, M. obtusa, M. restricta* and *M. slooffiae*. They have a distinctive physiological property in that lipids can be utilized as a source of carbon. In fact, with the exception of *M. pachydermatis*, the species have an absolute requirement in vitro for a supplementation of long-chain fatty acids in the medium, hence the term, lipophilic yeasts, which is applied to the members of this genus. *M. sympodialis, M. globosa* and *M. restricta* are commonly cultured from the normal human skin among the *Malassezia* species. This genus is implicated in several skin diseases such as PV, pityrosporum (*Malassezia*) folliculitis, seborrheic dermatitis and systemic fungal infection. In attention to PV, some of the *Malassezia* species are known to be the etiological agent of PV. According to the report of Ahn[11], four species were cultured from the lesions of twenty cases of PV; 1 case of *M. furfur*, 3 cases of *M. sympodialis*, 15 cases of *M. globosa*, 1 case of *M. obtusa*. He then supposed that *M. globosa* could be considered as a main etiological agent of PV.

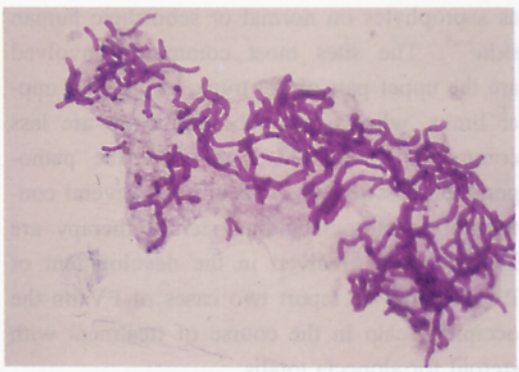

Fig. 2. Short, flexible and fragmented hyphae (periodic acid-Schiff stain, x600).

There are a number of factors, which are probably important in the pathogenesis of PV. Cutaneous lipids play an undoubted part. The dependence of lipids explains why PV has a marked preference for skin areas physiologically rich in sebaceous glands, and never appears on the palms and soles. PV is rare in children and elderly people whose skin contain lower concentrations of total lipids, in contrast to the established levels in young adults[12].

The fact that the role of sweat secretion in the development of PV is not based on clinical experiment. However, regions with a high incidence are tropical areas where high temparatures with high humidity maintained for long periods of the year[13]. The weather of summer in subtropical area is comparable with tropical climate. These climatic factors obviously influence sweating, melanogenesis and cutaneous keratinization, initiating metabolic changes which may cause the role of *Malassezia* yeast to change from saprophytes to pathogenes[14]. The hormonal factor for steroid therapy may be also one of several contributory factors. Many reports of patients with both spontaneous and iatrogenic Cushing's syndrome presenting at the same time with extensive PV, have been frequently reported to be resistant[15,16]. In these cases changes of the skin favouring the spread of *Malassezia* are not from specific biochemical changes in layers of the outer skin[17], but the result of accelerated turn-over in the horny cutaneous stratum. The role of hormones seems to be confirmed by the fact that PV becomes more frequent at puberty, and as in acne vulgaris[18].

Malnutrition, poor general health, and a family history of PV are predisposing factors[19]. Most experts believe that it is weakly contagious or even noncontagious. However it is theoretically possible to postulate primary inoculation by direct transmission from an infected person to a healthy one or alternatively to be transmitted indirectly via contaminated objects such as underwear, sports clothes, toilet articles, and bed clothes etc[20]. Our patients used wigs for their bald scalps, and PVs were developed on the scalps in the course of treatment for alopecia totalis. It is supposed that a seborrheic condition due to intralesional triamcilnolone injection changed *Malassezia* as the saprophyte to the virulent pathogen and gave rise to the clinical lesions of PV in our patients. With the pathogenic viewpoint of wigged state, sweat retention and autoinoculation through the contaminated wig seemed to be associated with development and progress of the PV lesions.

The diagnosis is essentially based on clinical examination of the skin lesions of PV, on mycological examination to demonstrate the pathogen and on the examination of the suspect lesions under the Wood's lamp. Our two cases showed short, flexible and fragmented hyphae on mycological examination and characteristics of greenish-yellow fluorescences on Wood's lamp from the scales of hyperpigmented patches, but cultures were not done from the lesions to identify the species of *Malassezia*.

The sites of the lesion may appear anywhere on the skin except on the palms and soles, but the sites most commonly involved are the upper part of the trunk, but the disease is less common on the face and scalp[8,9] as in our patients.

PV responds well to either selenium sulfide for at least two weeks, or most topical azoles for one to two weeks. Imidazole and triazole derivatives are also effective[2]. We treated the two cases in the same manner, oral itraconazole 200mg daily for 7 days and topical isoconazole nitrate preparation. Two weeks later the lesions disappeared and showed negative findings on mycological examination and Wood's lamp. No recurrence was observed in our patients during the observation periods, 1 year and 8 months respectively.

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=국문초록=

전두 탈모증의 치료 중 가발 착용 부위에 발생한 전풍 2예

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이강석 · 전병환 · 노병인

피부에 정상 균총으로 존재하는 *Malassezia*의 일부는 여러 가지 원인에 의해 병원성을 갖게되어 질병을 야기시키는 데 그 대표적인 질환이 전풍 (pityriasis versicolor)이며 이는 인설과 다양한 색소 침착을 특징으로 하는 표재성 진균증이다. 호발 부위는 액와부, 상배부, 전흉부, 복부 등 주로 땀이 많이 나는 곳에 발생하나 부신 피질 호르몬제 투여나 면역 억제, 또는 당뇨병과 같은 인자가 있는 경우에도 발생할 수 있다. 본 교실에서는 전두 탈모증 환자에서 치료 도중 가발 착용 부위에 발생한 전풍 2예를 경험하고 흥미로운 예로 사료되어 보고한다.

증례 1은 전두 탈모증으로 인한 가발 착용력 2년의 13세 여자로 두피에 매주 triamcinolone 국소 주입 요법과 diphenylcyclopropenone 국소 도포를 시행하던 중 치료 7주경에 후두부에 인설을 동반한 과색소 침착반이 발생하였다. 증례 2는 가발 착용력 4년의 16세 전두 탈모증 남자로 triamcinolone 국소 주입 요법과 diphenylcyclopropenone 국소 도포 후 1년 4개월경에 후두부에 쌀겨 형태의 인설을 동반한 과색소 침착반이 발생하였다.

증례 1, 2에서 우드 등과 KOH 도말 검사 양성을 보였고 7일간 itraconazole 경구 투여와 isoconazole nitrate 국소 도포 후 2주만에 균사 음성 및 병변의 임상적 호전이 관찰되었다.

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색인단어: 전두 탈모증 (alopecia totalis), 전풍 (pityriasis versicolor)