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Case Report

Tinea capitis occurring in adults – a report of two cases with atypical presentation

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ABSTRACT

Tinea capitis (TC) is a dermatophytic infection affecting the scalp hair and skin. It occurs primarily in children between 3 and 14 years of age, but it might affect any age group. Herein, we report 2 cases of adult tinea capitis who presented with atypical clinical features like pustules, crusted scaly plaques and non-scarring alopecia. Various investigations including potassium hydroxide (KOH) mount, dermoscopy, histopathological examination, hemogram, serum biochemistry and viral screening were conducted. Based on clinicopathological correlation both the cases were diagnosed as Tinea capitis. The patient received treatment with oral Griseofulvin along with topical luliconazole cream resulting in complete resolution of lesions.

Keywords: Tinea capitis, Adults, Atypical, Rare

INTRODUCTION

Tinea capitis (TC) is a dermatophytic infection affecting the scalp hair and skin. It occurs primarily in children between 3 and 14 years of age, but it might affect any age group.[1] TC is uncommon in adults, due to the pH changes and fatty-acids increase in the adult scalp.[2] Clinically, TC is classified into inflammatory and non-inflammatory types. In the ongoing epidemic of recalcitrant dermatophytosis, the prevalence of TC among adults has increased. There is higher prevalence of atypical TC in adults including diffuse seborrheic dermatitis like, extensive diffuse folliculitis of scalp and inflammatory nodules type. Herein, we report 2 cases of adult TC who presented with atypical clinical features.

CASE REPORT

Case 1

A 21-year-old female presented with multiple swellings over the scalp since 6 months. She started developing pustular lesions over the scalp with pain and itching, insidious in onset, healed on taking medication from a dermatologist. Lesions recurred over the period of 4 months with incomplete resolution even after taking medication. The present complaint started 20 days ago with pustular lesions initially; later progressed to form scaly lesions and crusts with itching and pain. The medical history of the patient did not reveal any underlying disorders or any significant medication intake by the patient. There was no history of trauma, fever, malaise, nor pets at home.

On examination, large crusted scaly plaques with surface erosions and hemorrhagic crust formation and non scarring alopecia were seen over multiple areas over frontal and parietal part of the scalp (Figure 1). No other lesions over the body.

KOH examination showed long septate branching hyphae and spores. Dermoscopy showed corkscrew hairs. Histopathology showed fragments of crusts (parakeratosis, serum and neutrophils) along with

epidermis showing mild acanthosis and intact basal layer. Inflammatory infiltrate (lymphocytes and few foreign body giant cells) was seen in the upper dermis and fungal spores within the hair shaft demonstrated by PAS stain (Figure 2) which favored a diagnosis of endothrix type of tinea capitis.

Figure 1: Large crusted scaly plaques, erosions and non-scarring alopecia over frontal and parietal areas of scalp.

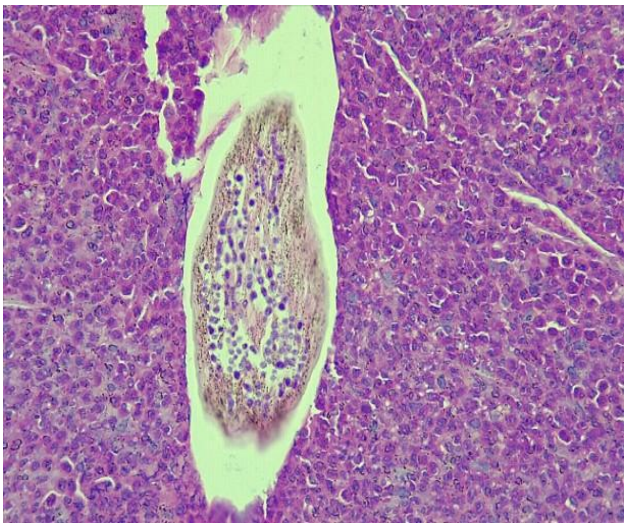

Figure 2: Multiple fungal spores with in the hair shaft seen after pas staining.

Case 2

A 41-year-old female presented with raised whitish lesions over the scalp since 6 months. On examination multiple discrete pustules, scaly plaques were seen diffusely all over the scalp (Figure 3).

Figure 3: Diffuse scaly plaques and multiple discrete pustules present all over the scalp.

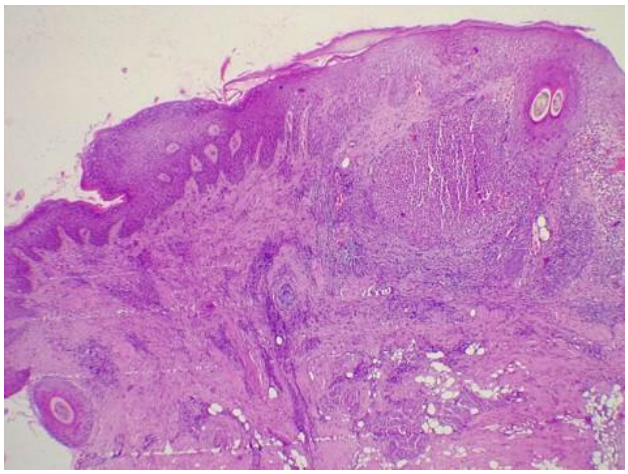

Figure 4: Epidermal hypergranulosis, acanthosis and dense neutrophilic collections in the upper epidermis.

Patient was previously treated for folliculitis with poor response and she has been treated previously for TC also. KOH showed branching hyphae and spores. Dermoscopy revealed black dot and zigzag hairs. Histopathology showed mild compact hyperkeratosis with focal parakeratosis, hypergranulosis, moderate acanthosis with

neutrophilic spongiosis and intact basal layer. Superficial dermis showed dense neutrophilic collections focally and multiple arthrospores within the hair shaft (Figure 4) which favored the diagnosis of endothrix type of TC.

Laboratory investigations of both the cases including hemogram, serum biochemistry (RBS, RFT, LFT, serum electrolytes), viral screening and imaging studies were within the normal limits. Based on the clinicopathological correlation both the cases were diagnosed as TC and treatment was started with oral Griseofulvin 15 mg/kg/day along with topical luliconazole cream given for 6 weeks resulting in complete resolution of lesions.

DISCUSSION

TC is a common dermatophyte infection of the scalp in children, whereas adult infection occurs infrequently. The causative pathogens are members of only two genera: Trichophyton and Microsporum. T. tonsurans is currently the most common cause. There are four main types of hair shaft invasion, which determine clinical presentation: inflammatory (kerion and favus) and noninflammatory (gray patch and black dot types) or according to the size and the location of the spore, ectothrix (spores outside the hair shaft), and endothrix (spores inside the hair shaft).[1] Both the cases in the present series had endothrix type of hair invasion which was demonstrated histopathologically.

Ectothrix infection begins at the perifollicular stratum corneum and then descends down to reach the mid-follicle.[3] From here, hyphae descend within the intrapilary region towards the keratinous zone. Here, they grow without infecting the nucleated cells and in a delicate equilibrium with the keratinization process.[4] Intrapilar hyphae divide into arthrospores that reach the cortex and the infection is confined to the hair surface beneath the cuticle. In endothrix infection, arthrospores replace much of the intrapilary keratin while leaving the cortex intact. Hair breaks at the scalp level giving the “black dot” appearance. In acute infection, effector lymphocytes and a dermal T-helper cell infiltrate are present;[5] in chronic infection, skin markers—including adhesion factors like ICAM-1—are downregulated.[6] In our case 1 the clinical presentation was with inflammatory papulonodules whereas in our case 2 the patient had TC which extended onto the scalp and there was history of potent topical corticosteroid application previously which could have resulted in local immunosuppression in skin.

Several factors may make certain adults more susceptible to TC infections. Persons at the extremes of age, including young children and older adults, are at greater risk for TC infection. The onset of puberty provides protection from TC, due to increased sweat, sebum, and hair thickness.[7] Older, post-menopausal women, in particular, may be at increased risk of dermatophytosis due to decreased sebum production associated with decreased estrogen levels, resulting in decreased fatty acid production and loss of acidity on the scalp.[7] Review of literature shows TC is relatively uncommon in adults with only few case reports by Lahiri et al and Hill. In the present series the age of patients was 21 and 41 respectively with no evidence of immunosuppression and use of corticosteroids being the only known trigger factor.

Typically, diagnosis of TC follows the sequence of clinical suspicion, Wood’s lamp examination, KOH mount, dermoscopy, histopathological examination and culture of scraping/ brushing and plucked hairs. KOH findings are long septate branching hyphae and spores. Histopathological findings are epidermis with compact orthokeratosis, focal parakeratosis, and mild acanthosis. Superficial dermis shows dilated blood vessels and mild perivascular inflammatory infiltrate composed of lymphocytes and a few eosinophils.[8]

Dermoscopic (trichoscopic) features of TC are the “comma” hairs, “corkscrew” hairs, “Morse code-like (bar code-like) hairs”, and “zigzag” hair, bent hairs, block hairs and i-hairs.[9] In case 1and 2 KOH findings were long septate branched hyphae and spores, dermoscopy findings were corkscrew hairs and black dot, zigzag hairs respectively. Histopathological findings were hypergranulosis, moderate acanthosis and neutrophilic spongiosis, along with dense neutrophilic collections in the upper dermis and multiple arthrospores within the hair shaft.

The treatment of TC requires systemic antifungal therapy because topical antifungal agents cannot penetrate the hair shaft sufficiently to eradicate infection. Griseofulvin- 20–25 mg/kg/day for micronized and 10–15 mg for ultramicronized preparations for 6–12 weeks, Terbinafine- 125 mg for less than 25 kg, 187.5 mg for 25–35 kg, and 250 mg for 35 kg or more, for continued duration of 6 weeks. Other systemic antifungal drugs which may be used are Itraconazole, Fluconazole, Selenium sulfide, ketoconazole, ciclopirox shampoo.[10] In the present cases complete resolution of scalp lesions were achieved with systemic griseofulvin and topical luliconazole without any recurrences.

CONCLUSION

Our cases highlights the rare occurrence of TC in adults. Previously very few cases of adult TC have been published in the literature, but with the advent of epidemic of recalcitrant dermatophytosis and changes in the epidemiological profile of dermatophytic fungus we are witnessing increased incidence of TC in adults. In all adults who presents with persistent inflammatory lesions over the scalp which do not respond to routine treatment including multiple courses of antibiotics, thorough investigations should be done to rule out TC. Prompt treatment should be initiated in all diagnosed cases to

prevent complications including scarring alopecia and secondary bacterial infections.

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