

Tinea Capitis: An Adult Invasion of a Childhood Scourge

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Abstract

A 52 year-old female patient presented with multiple painful pustules all over the scalp associated with loss of hair over the affected areas. On hair root examination, ectothrix was detected and histopathology showed multiple arthrospores within hair follicles and hyphae within stratum corneum. The patient was unresponsive to oral antifungals; hence, oral corticosteroids with oral terbinafine were administered, which produced drastic improvement within one week.

We report this case to highlight the rare occurrence of a childhood infection in adults mimicking erosive pustular dermatoses. We stress the importance of using oral corticosteroids in the management of inflammatory tinea capitis.

Keywords Tinea capitis; Corticosteroid; Erosive pustular dermatosis

Introduction

Tinea capitis or Tinea tonsurans, otherwise known as 'ringworm of the scalp' or 'scourge of childhood' has been plaguing the paediatric population for over 2000 years [1]. The essential feature of this superficial fungal infection is the invasion of hair shafts by a dermatophyte fungus [2]. Tinea capitis is a common infection of the scalp in children and infrequently occurs in adults, especially in the setting of AIDS [3-5]. We report a case of inflammatory tinea capitis in an immunocompetent adult female patient mimicking erosive pustular dermatosis which was treated with systemic antifungal and steroid therapy. We also seek to emphasize the importance of oral corticosteroids in the management of inflammatory tinea capitis.

Case Report

A 52-year-old female agricultural labourer, residing in a rural area of Pondicherry, presented with complaints of extensive, oozing, pus-filled lesions over the scalp since 6 months, associated with severe pain and loss of hair over the area. The lesions started over the right side of the scalp and gradually progressed to involve the entire scalp over a period of 3 months. During this time, the patient sought medical advice and was treated with oral Terbinafine 250 mg 1 OD for a period of 1 month with minimal response. There was no history of exposure to domestic animals.

On examination, multiple, irregular, erythematous plaques studded with pustules were seen predominantly over the occiput, vertex and parietal regions of scalp bilaterally along with scarring alopecia of the region (Figure 1).



Figure 1: Multiple pustules and crusted plaques with alopecia over occipital and parietal regions of scalp.

The frontal and vertex regions of scalp showed multiple, well-defined, scaly patches of non-scarring alopecia. The differential diagnoses of inflammatory tinea capitis, folliculitis decalvans and bacterial folliculitis were considered.

Skin scraping and potassium hydroxide (KOH) mount showed hyaline fungal hyphae and hair root examination showed ectothrix (Figure 2).



Figure 2: Hair root examination showing ectothrix (40x) (black arrow).

Gram stain revealed no organisms and serum ELISA for HIV was negative. Cultures of pus did not grow bacteria or fungi. Histopathological examination of skin biopsy taken from occipital scalp showed neutrophilic infiltration in the epidermis and multiple arthrospores within dilated hair follicles in the dermis surrounded by dense neutrophilic infiltration (Figure 3).

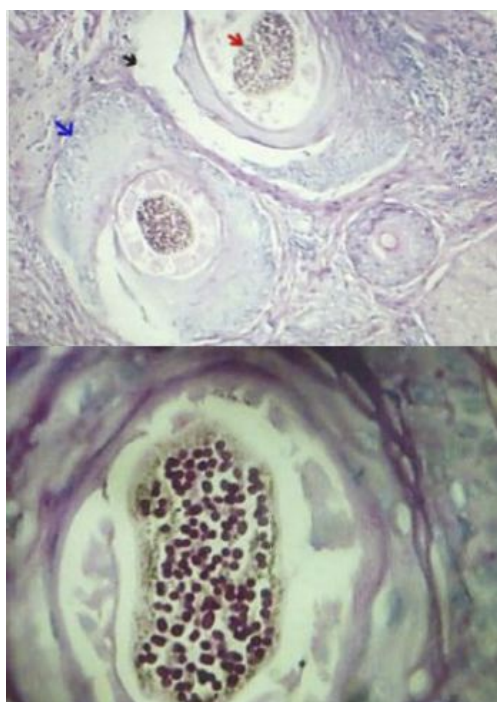


Figure 3: Top-(H & E, 10 x) multiple dilated hair follicles (black arrow) with multiple arthrospores (red arrow) within the follicle surrounded by dense perifollicular neutrophil infiltrate (blue arrow) Bottom-(H & E, 40x) Higher magnification showing arthrospores in hair follicles.

Growth was not detected on fungal culture probably due to antecedent anti-fungal treatment taken by the patient prior to culture. We were unable to do further investigations like polymerase chain reaction as the patient could not afford them. As the patient did not have a history of repeated skin or respiratory tract infections, we thought it was unlikely that she had an underlying immunosuppressive disorder. Hence we did not do further work-up other than complete blood counts and ELISA for HIV.

The patient was given oral terbinafine 250 mg OD for a week; she showed no response whatsoever. She was then prescribed oral prednisolone 30 mg along with oral terbinafine 250 mg. She improved dramatically with healing of pustules and erosions within 7 days (Figure 4).



Figure 4: Complete healing of erosions after two weeks of treatment with oral terbinafine and corticosteroids

Prednisolone was tapered and stopped over 3 weeks. The treatment was supplemented with ketoconazole shampoo and saline compresses. Within two weeks, the pustules had completely healed. The response to antifungal treatment confirmed our diagnosis of tinea capitis. Terbinafine was continued for one more week. On follow up after one month, there was minimal regrowth of hair over few patches of alopecia with no recurrence of lesions. The patient was lost to further follow-up.

Discussion

Tinea capitis is an affliction, predominantly of preadolescent children as hardly 4.9% of tinea capitis occurs in adults [6]. Adults are mostly reported as being asymptomatic carriers of tinea capitis in households where the children are infected [7]. Dermatophyte infection of the scalp usually ceases at puberty due to increase in the fungistatic saturated fatty acid production as demonstrated by Rothman et al. [8]. The thick caliber of adult human hair is also

protective against dermatophyte invasion [9]. These features decrease the physician's index of suspicion of tinea capitis infection in adults [6].

Transmission can occur via various modes indicating the degrees of exposure to pathogens (infected persons, fomites, shed hairs and animal vectors) [10] in an immunocompetent person [11]. Other factors influencing transmission in adults are overcrowding and low socioeconomic status and underlying conditions such as diabetes, anemia, immunosuppression, corticosteroids and hormonal changes (e.g., menopause) [12]. None of these factors were applicable in our patient.

The clinical presentations vary based on the causative organism and host immunity. It ranges between severe pustular eruptions with alopecia and non-inflammatory 'patch' or 'dot' type presentation [3]. This patient had mostly a kerion-like picture with features of a non-inflammatory seborrheic dermatitis-like variant in the form of scaly patches over the frontal and vertex regions.

Use of steroids, although controversial, was absolutely essential in the management of our patient. A study by Honig et al showed that although antibiotic and steroid therapy in addition to antifungals, help to reduce pruritus and scaling in patients with kerions, they did not reduce the time taken for kerions to flatten [13]. However, other reports that show that prednisolone used at 1 mg/kg/day for 7 days provides success [14,15]. Most dermatologists concur that steroids are useful in preventing the dreaded complication of scarring alopecia in inflammatory tinea capitis. However, in our patient, it was surprising that steroids were very essential for the healing process too as there was absolutely no response to antifungals.

We present this case to highlight the rare occurrence of this childhood infection in adults. The report also emphasizes the importance of thorough investigations from skin scraping to skin biopsy, especially in those patients of tinea capitis who do not respond to antifungal therapy and thereby cast doubt on the diagnosis. We further reiterate that steroids should be started at the outset along with

antifungals in very inflammatory cases of tinea capitis to get optimum response in this curable condition.

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