A child with unique skin pattern: A case report of Tinea imbricata

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SUMMARY

This paper reports a case of Tinea imbricata in a young Orang Asli boy which was noted during his admission for severe symptomatic anemia. Upon discharge, he was started on syrup Griseofulvin 10mg/kg daily and Whitfield cream for 4 weeks. The Department of Orang Asli Development (JAKOA) and the local Health Clinic were contacted before discharge to facilitate patient's follow-up and monitoring. Outbreaks of Tinea imbricata among the Orang Asli have been known to happen from time to time. Although this dermatophyte infection is rare in the urban population, transmission among travelers has been reported. This case report highlights its unique presentation and treatment approach.

INTRODUCTION

Orang Asli or the native aboriginal people in Malaysia makes up only 0.6 percent of the total Malaysian population. Their population is small and they are predisposed to many health problems such as malnutrition, worm infestations, malaria, and skin infections. Tinea Imbricata is common among Orang Asli in Malaysia and infection among visitors to the endemic area has also been reported. Thus, health practitioner in both rural and urban areas should be familiar with common skin conditions among the Orang Asli population for proper diagnosis and treatment.

CASE REPORT

A 4-years old Orang Asli child who was admitted for severe anemia was noted to have a widespread skin rash. His mother had noticed the rash for few months, which started over his abdomen initially and spread to his limbs and face. It was very itchy, especially during hot weather. Apart from lethargy due to the anemia, he had no other symptoms.

He was from the Bateq tribe, which practices a nomadic lifestyle, frequently moving from place to place. He was the elder out of 2 children. Both children had home birth with no formal antenatal follow-up. The patient lived together in a small hut with his parents, younger sister, and his grandparents. His mother said that other family members did not have the same skin condition; however, she was unsure regarding the other villagers.

On examination, conjunctiva of the patient was pale. His height was 94 cm and weight 12kg (Z score between -1 to -2 SD) according to Z score chart (weight for height) for Orang Asli. There were generalized concentric, annular skin lesions with scaly borders mainly over the abdomen, all four limbs, and both cheeks. There were no pedal edema or ascites. His mother and younger sister were examined and noted not to have similar skin lesion. Other systemic examinations were unremarkable. Full blood count (FBC) showed microcytic hypochromic anemia with a hemoglobin of 5.1 g/dl. Anemia workup was taken during admission (Table I).

He was transfused during the admission and was discharged after 6 days of admission. Diagnosis of Tinea imbricata was made clinically based on the typical skin presentation and empirical treatment with syrup Griseofulvin 10mg/kg/day and Whitfield cream (Benzoic acid 6%+ Salicylic acid 3%) for local application for 4 weeks was given. Upon discharge, the JAKOA and the local health clinic were contacted to ensure follow-up. The plan was to screen other family members and villagers for the similar skin condition as well as for weight monitoring, immunization and anemia follow up. During follow up by the local health clinic, the skin lesion has improved, and the child was planned to continue follow up for immunization and weight monitoring. The team from the local health clinic also screened other villagers and found several with similar skin lesion and they were all treated.

DISCUSSION

The 3 main tribes of Orang Asli in Malaysia are the Semang (Negrito), Senoi, and Proto Malay (Aboriginal Malay) with the highest population in Pahang and Perak. The Bateq tribe is one of the sub-group of Negrito found mainly in the Northwest of Terengganu, Northeast Pahang, and South Kelantan.[1]

In Malaysia, there are no established statistics on Tinea imbricata. However, there have been outbreaks among the Orang Asli reported in the news from time to time. Some of them claimed to have had the skin disease for many years, untreated due to poor recognition of the skin disease by the attending healthcare physician, with poor compliance to medications and follow up.[2] Two large outbreaks were reported in year 2018 and 2019, involving Orang Asli in Kampung Kuala Koh, Gua Musang involving 30 and 120 people respectively.[2,3] Even though it was uncommon, there have been reports of Tinea imbricata acquired among non-natives, due to tourism or work-related. Infection among visitors to endemic areas has been reported in Tahiti, Samoa and Solomon Island, whereby an Italian lady who had a close contact with the island's native for 3 months had

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Table I: Anemia workup of the patient

Investigations		Result	Normal value
Full blood count	Hemoglobin	5.1 g/dL	10.5-14.0 g/dL
	MCV	54.6 fl	70.0-74.0 fl
	MCH	13.8 pg	25.0-31.0 pg
	WBC	7.6 x 10^9/L	6.0-15.0 x 10^9/L
	Platelet	375 x 10^9/L	150-400 x 10^9/L
Iron study	Serum Ferritin	4.1 umol/L	>12 umol/L
	Serum Iron	3.80 umol/L	5.83-34 umol/L
		TIBC	77.20 umol/L
Stool ova and cyst		Negative	
Hb Analysis		Findings are consistent with iron deficiency anemia however beta thalassemia trait cannot be excluded	
Full blood picture		Moderate hypochromic microcytic RBCs with cigar cells.	

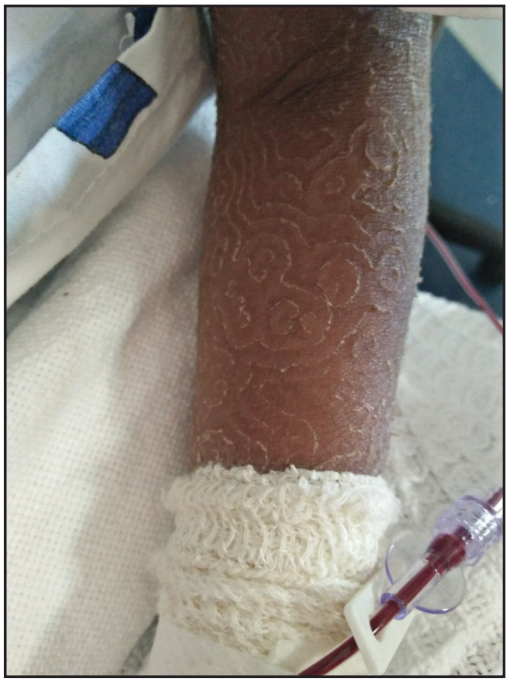

Fig. 1: Concentric, annular skin lesion with scaly borders over the left forearm.

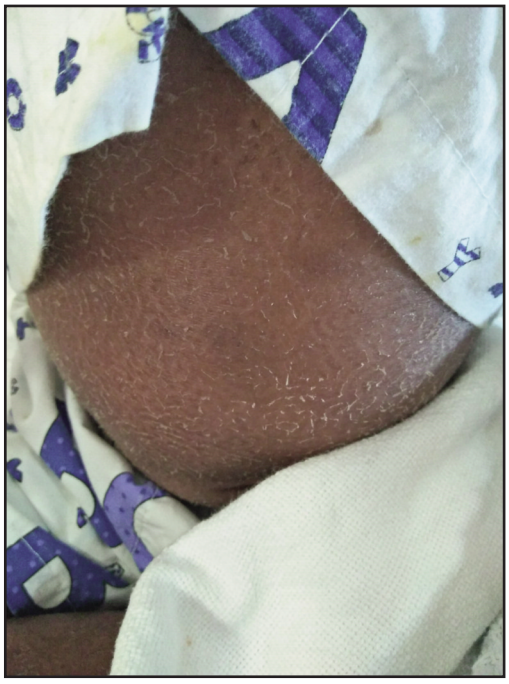

Fig. 2: Concentric, annular skin lesion with scaly border over the left side of abdomen.

contracted the disease. She was initially diagnosed as contact dermatitis for 7 months before treated as Tinea imbricata.[4]

Tinea imbricata is caused by *Trichophyton concentricum*. It has been described as early as 1919 and was also sometimes known as *Kurap Losong* by the locals. It is also known as Tokelau, concentric tinea, Indian or Chinese tinea, scaly tinea, elegant tinea, lace tinea, and chimberé. It is commonly seen in the Southwest Pacific, Central and South America, and Southeast Asia.[5] The disease is mainly seen among the aboriginal people. There is a mix of predisposing factors including the damp and hot climate, poor hygiene, malnutrition as well as genetic predisposition.[5,6] In this case, poor nutrition was one of the predisposing factors for him acquiring this disease. Outbreaks of Tinea imbricata are common since it spreads by close contact especially among households.[7] Genetic susceptibility (autosomal inheritance pattern) towards acquiring Tinea imbricata could also explain the outbreaks among the native aboriginal population.[5]

Diagnosis is made clinically by its typical skin manifestation of generalized concentric, annular or lamellar plaque, with scaly borders, giving rise to appearance of lace, fish scales, or overlapping roof tiles.[5,6] It usually affects the skin over the trunk, limbs, and face. It rarely affects the scalp, nails, soles, and palms and usually spares the hair. It can occur with or without itchiness and topical corticosteroids can obscure the diagnosis.

If needed, diagnosis can be confirmed by examination of skin scrapings of the active border of the lesion by potassium hydroxide (KOH) wet mount, and typical microscopic findings are short, septate hyphae, with no arthroconidia, and numerous spores of *T. concentricum*.[7] *Trichophyton* is characterized morphologically by the development of both smooth-walled macro- and microconidia. The presence of microconidia differentiates this genus from Epidermophyton and Microsporum. For species without conidia, culture characteristics and clinical information such as, lesion morphology, location, travel history, animal contacts and occupation are important.[8]

The lesion can become chronic and lichenified with post-inflammatory hyper/hypopigmentation. Intense itching can impair sleep quality and predispose to secondary bacterial infection. Re-infection is common.[5-7]

Oral antifungal is the treatment of choice. It can be treated effectively by oral antifungal either oral Griseofulvin or Terbinafine.[9] Wingfield AB et al. reported a randomized clinical trial which included 59 patients with tinea imbricata for efficacy analysis showing griseofulvin and terbinafine to be effective with no adverse events. Terbinafine has longer efficacy with additional advantage of daily dosing which can improve compliance, but it is not available in our Health Clinics. The effective dose is oral Terbinafine 250mg once daily or oral Griseofulvin 500mg twice daily for 4 weeks for adults.[9] For children, the dose for Syrup Griseofulvin is 10mg-20mg/kg/day in single or 2 divided doses. Combination with a topical keratolytic agent such as Whitfield's ointment as adjunctive therapy may improve therapeutic response.[10] Oral Griseofulvin and Whitfield's ointment are widely available in Health Clinics across Malaysia.

Despite the effective treatment available, there are many challenges in treating the Orang Asli people. Many of them still practice a nomadic lifestyle. This complicates the local health care to approach them and provide adequate treatment. Language barriers, poor hygiene, low educational background, and unique beliefs, affect their compliance towards health care services by the government. Nowadays, with the help of JAKOA, 'Pasukan Bergerak Orang Asli' (PBOA), and the local health clinic can gain access to the Orang Asli population and provide the basic medical attention they needed.

CONCLUSION

Tinea imbricata has a typical skin pattern that facilitates clinical diagnosis and can be treated effectively with oral Griseofulvin which is effective and is readily available in local health clinics in Malaysia. It is important for health practitioners, especially those who work in rural areas to be able to identify this skin infection. However, with the rise of traveling and tourism, it is also important for urban health care physicians to be aware of this skin fungal infection as well. Issues in treating Orang Asli such as non-compliance with treatment can be overcome with the help from the JAKOA.

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CONFLICT OF INTEREST

None to declare

CONSENT

Verbal consent has been taken from the mother and child for images and publication purposes.

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