

Case Report

Common fungus at an uncommon site

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ABSTRACT

Dermatophytes frequently cause fungal infections limited to the hair, stratum corneum and nails. However, deep dermatophytosis infecting dermis, subcutis and internal visceral organ caused by *T. rubrum* is a rare clinical entity. To highlight this rare infection, we present a case of swelling in lower limb caused by subcutaneous infection by deep dermatophytes in an elderly individual.

Keywords: Dermatophyte's, Subcutaneous fungal infection

INTRODUCTION

Dermatophytes frequently cause fungal infections limited to the hair, stratum corneum and nails. However, deep dermatophytosis infecting dermis, subcutis and internal visceral organ caused by *T. rubrum* is a rare clinical entity.¹ To highlight this rare infection we present a case of subcutaneous infection in right leg of an elderly individual.

CASE REPORT

A 70 years old farmer, known case of type 2 diabetes mellitus and hypertension on regular medication, presented with complaints of swelling in the anterior aspect of right leg, just below the knee of 08 months' duration (Figure 1). The swelling had been progressively increasing in size from around 1x1 cm initially to about 4x4 cm, present size. He gave no history of fever, pain, weight loss. Patient is a farmer and spends long hours in the field, however he gives no history of a thorn prick or injury to the affected area. Patient has reported to this hospital for the first time. Clinically he was hemodynamically stable and had subcutaneous nodule on the anterior aspect of the right leg. There was no other

evidence of any onychomycosis or any other subcutaneous lesion anywhere else in the body.



Figure 1: Swelling in the anterior aspect of the right leg.

Investigations revealed anemia (Hb 9.5 gm%) and elevated ESR (46 mm fall 1st hour). Rest of the biochemical and metabolic parameters were within normal limits. Bone marrow examination was done and there was no evidence of fungal infection there.

FNAC and culture of the of the subcutaneous tissue was done.

FNAC slide revealed monocytes, macrophages, and rare neutrophils. Slides showed septate hyphae on periodic acid-Schiff staining (PAS) (Figure 2) and Gomori methamine staining (GMS) (Figure 3).

Since there was evidence of the presence of trichophyton, PCR was done for confirmation. DNA was extracted and amplified with primers to detect the TRS2 type. The presence of trichophyton rubrum was confirmed on the PCR assay.

The patient was managed with tablet itraconazole to which he responded. The lesion gradually disappeared over a year and there has been no reoccurrence thereafter.

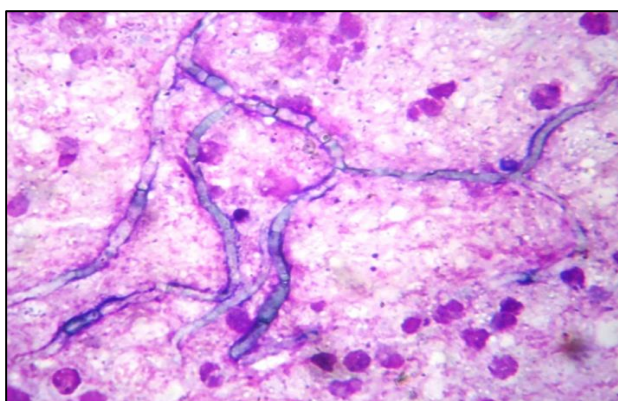


Figure 2: Septate hyphae on Gomori Methanemine stain.

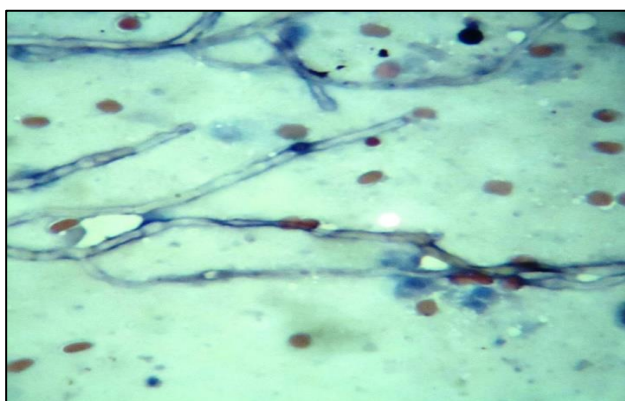


Figure 3: Septate hyphae on PAS stain.

DISCUSSION

Dermatophytes frequently cause fungal infections limited to the hair, stratum corneum and nails. Only rarely they may invade deeper tissues and disseminate to the internal organs.¹

Trichophyton rubrum is one the most frequently encountered dermatophyte that causes infections to skin. However, deep dermatophytosis infecting dermis, subcutis and internal visceral organ caused by *T. rubrum* is a rare clinical entity.² In cases where deep

dermatophyte infection are present, they mostly presents in one of the three major patterns

- Majocchi's granuloma (nodular granulomatous perifolliculitis) is an infection of dermal and subcutaneous tissue, related to disruption of hair follicles and spillage of fungi into the dermis producing a granulomatous inflammation³
- In deep or invasive disease limited to the extremities, involving only subcutaneous tissues without involvement of other internal organs⁴
- generalized invasive disseminated infection with dermatophytes has been reported

Our patient had a subcutaneous infection with *T. Rubrum* involving subcutaneous tissue around the knee. There was no evidence of disseminated disease in the bone marrow, liver, or lungs.

In present case, the fungi were identified as a *Trichophyton sp.* by its typical morphological characteristics on culture and by PCR-based molecular typing. Since this type of infection is rarely found hence it is difficult to establish risk factors for invasiveness.

The mainstay of treatment for deep infections with trichophyton remains to be either itraconazole or terbinafine and in some severe cases, surgical debridement.⁵ Our patient responded well clinically to itraconazole, and has remained disease free 1 year post-infection.

CONCLUSION

we have presented a rare case of locally invasive *T. rubrum* infection of knee joint. This fungus was identified on morphological characteristics, and the identification was further confirmed by PCR-based molecular typing.

The idea of presenting this case was to sensitize our colleagues to a rare presentation of limited subcutaneous infection by *T. rubrum* without any systemic spread of the infection.

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Ethical approval: Not required

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