

CASE SERIES IN IMAGES: “Varied clinical presentations of *Malassezia*”**Ambujavalli Balakrishnan Thayikkannu¹, Anupma Jyoti Kindo², Mahalakshmi Veeraghavan³****Abstract**

Malassezia is a normal flora of the skin and unlike other yeasts requires lipids for its growth and multiplication. The usual clinical presentation is the hypopigmented or hyperpigmented (chronic) patches seen on the chest, back, and neck. The mixed type ie) chronic and hypopigmented type in the same patient is rarely seen. Seborrheic dermatitis and *Malassezia* folliculitis are other types of lesions associated with *Malassezia*. Many of the species of *Malassezia* can be a human pathogen under the favorable predisposing factors which enables them to rapidly multiply. *M. Pachydermatidis* is the only species which is lipid independent and is an animal pathogen. However it can be occasionally isolated from the skin of animal handlers and pet owners as colonizers. Usually only one species is isolated from the lesions, though even as normal flora, more than one species is known to exist. Here we report a series of unusual cases from which two species of *Malassezia* were isolated.

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Keywords: *Malassezia*, *M.pachydermatidis*, *M.furfur*, *M.resrticta* & *M.globosa*.

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1. INTRODUCTION

Malassezia is predominantly a lipophilic yeast which is a part of the normal skin flora and is an opportunistic pathogen. Under certain predisposing conditions, the yeast is associated with numerous superficial skin mycoses such as pityriasis versicolor (PV), seborrheic dermatitis (SD) and *Malassezia* folliculitis. Other rare clinical presentations are confluent and reticulate papillomatosis, onychomycosis, and transient acantholytic dermatosis^[1]. Though, by definition superficial mycosis do not invade past the cornified epithelium, the organism is present in the ostium, central and deep segments of the hair follicle in *Malassezia* (Pityrosporum) folliculitis. There is evidence that *Malassezia* play a role in atopic dermatitis, and in psoriasis, especially involving the scalp^[2]. We present here images of rare clinical cases from which *Malassezia* species was isolated. They were clinically diagnosed as one case each of blepharitis, confluent reticulate papillomatosis (CRP) with pityriasis versicolor and dandruff, taenia faciei post steroid therapy, lesions with mixed pigmentation pattern and one patient from whom *M.pachydermatidis* was isolated.

2. CASE PRESENTATION

2.1 Case 1

An 8yr old girl child came with history of itching over the upper eye lids of 2 weeks duration. On examination white scaly lesions were seen. There were some hypo pigmented spots on the forehead and nasal ridge (fig 1). The patient was clinically diagnosed to have blepharitis. Swabs were collected from the scaly lesions and KOH showed some short hyphal and yeast forms. Speciation was done and identified as *M.furfur*.



Fig 1: white scaly lesions on the upper eyelids and hypopigmented spots on the forehead and nasal ridge.

2.2 Case 2

A 32 yr old male, security guard/office assistant by profession, working in hot and humid environment, with history of dandruff on and off for 3 yrs, came with complaints of a new skin lesion in the centre of the chest of 2 months duration, and severe itching and dandruff in the scalp. On examination he was found to have dandruff. He also had PV and confluent reticulate papillomatosis (Fig 2).



Fig 2A: Confluent reticulate papillomatosis in the centre of the chest.

Fig 2 B: Dandruff

KOH showed yeast forms alone from the scalp and the chest. TV scraping showed the typical spaghetti and meatball appearance. Two species of *Malassezia* were isolated from the samples namely *M.resrticta* & *M.globosa*.

2.3 Case 3

A 47 yr old diabetic lady, who was on treatment with local steroids for melasma, came with

complaints of some lesions on the face (fig 3). On examination, patient had a white scaly lesion on the face clinically diagnosed as *taenia faceii*. Skin scrapings showed occasional yeast forms on KOH mount.



Fig 3. white scaly lesion on the face

2.4 Case 4

A 52 yr old gentleman, known to have PV on and off for several years, came with complaints of dark skin lesions along with hypo pigmented lesions. A clinical diagnosis of hyper pigmented/chronic PV along with the hypo pigmented variety was made (fig 4). KOH had spaghetti and meatball appearance from both lesions and two species of *Malassezia* were isolated. *M.globosa* from hypopigmented lesions and *M.furfur* from the chronic lesions.



Fig 4: hyper pigmented/chronic TV along with the hypo pigmented patches

2.5 Case 5

A 35 yr old male, dog trainer by profession, came with complaints of white scaly lesions at the nape of his neck and arms (fig 5). KOH was conclusive. In culture, two species were isolated. *M.restricta* and *M.pachydermatis*.

M.pachydermatis could have been a pathogen (from the dog), however we couldn't confirm its source since we did not take samples from the dog.

3. LAB DIAGNOSIS WAS DONE BY PHENOTYPIC METHODS.

The characterization of lipid-dependent *Malassezia* yeasts was done based on the inability to grow on Sabouraud's glucose agar (SGA) and on the ability to use certain polyoxyethylene sorbitanesters (Tweens 20, 40, 60 and 80), following the current identification scheme of species described by Guého et al. [4] and the tween diffusion test proposed by Guillot et al. [5]. The Cremophor EL assimilation test and the splitting of esculin (β -glucosidase activity) were used as additional key characters [6].

Other tests, such as the catalase reaction, growth at different temperatures (32°C, 37°C and 40°C), on modified Dixon agar (mDA) (36 g malt extract; 6 g peptone, 20 g desiccated ox-bile; 10 ml Tween 40; 2 ml glycerol; 2 ml oleic acid and 12 g agar per litre, pH 6.0) and the morphological characteristics after incubation at 32°C for 7 days in the same culture medium were also performed [4].



Fig 5: white scaly lesions at the nape of his neck

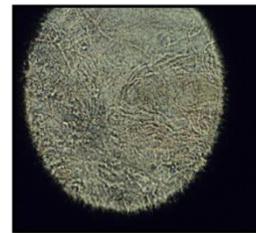


Fig 6: 10% KOH mount of skin scrapings showing spaghetti and meatball appearance under 40 X Magnification

3.1 PHYSIOLOGICAL TESTS

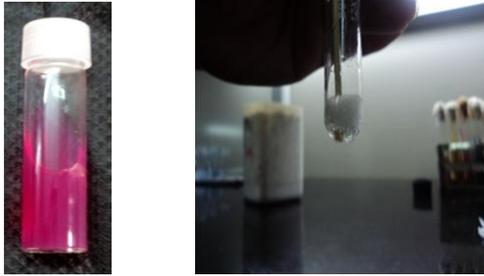


Fig 7: Positive Urease test using Christensen's urea agar

Fig 8: Positive Catalase test using 3% Hydrogen peroxide

3.1.1 M.furfur



Fig 9A: Gram's stain showing oblong unipolar budding yeast cells of *M.furfur* in 100 X magnification

Fig 9B: Growth in the presence of cremophor EL

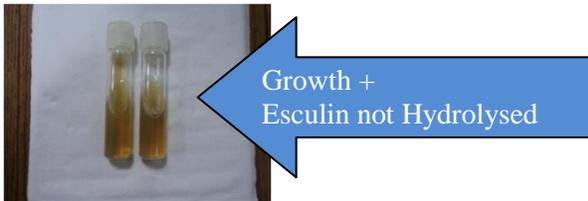


Fig 9C: Growth on Tween 60 esculin agar. Esculin not hydrolysed.

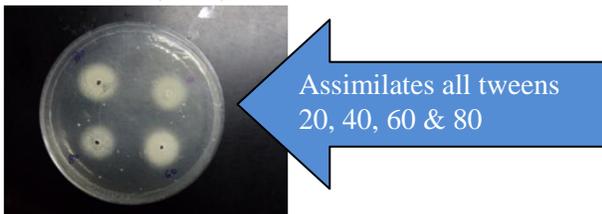


Fig 9D: Tween assimilation test : all 4 tweens ie 20, 40, 60 and 80 assimilated

3.1.2 M.globosa

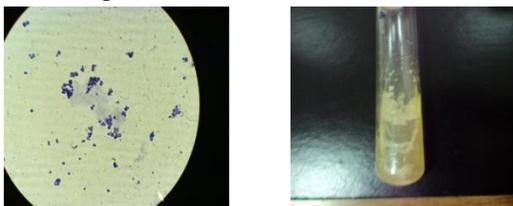


Fig 10A: Gram's stain showing globose unipolar budding yeast cells of *M.globosa* in 100 X magnification

Fig 10B: Growth in SDA with olive oil overlay



Fig 10C: No Growth on Tween 60 esculin agar. Esculin not hydrolysed

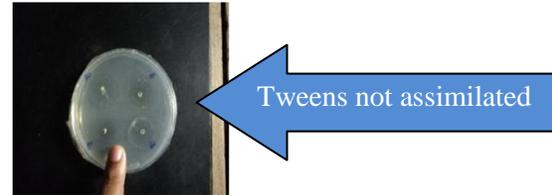


Fig 10D: Tween assimilation test : all 4 tweens ie 20, 40, 60 and 80 not assimilated **E.** occasionally observed precipitation ring around tween 40

3.1.3 M.restricta

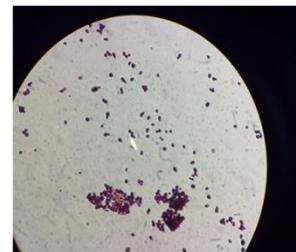


Fig 11A: A Gram's stain showing unipolar budding yeast cells in narrow base of *M.restricta* in 100 X magnification

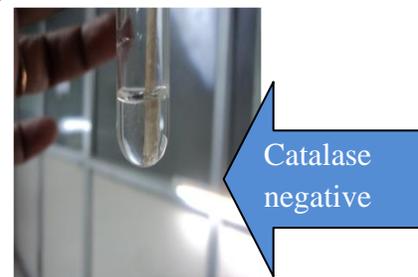


Fig 11B: Negative catalase test using freshly prepared 3% hydrogen peroxide

4. DISSCUSSION

Our study was based in Chennai and being on the coastal area is always high in humidity which increases sweating. Sweat retentions due to high environment moisture content in summer season contributes as aggravating factor and facilitates rapid fungal growth resulting in high incidence.^[3]

We found high incidence of Pityriasis versicolor during summer, attributing probably to this reason. We had varying clinical presentations of PV, from single lesions to multiple and involving various sites. Multiple lesions were more common, and so were multiple sites. The most common site to be affected by PV was the back, followed by chest, and multiple sites many a times involving the back and chest.

During our study period, we came across the above mentioned 5 interesting cases from which *Malassezia* sp was isolated. There was one patient from whom *M.pachydermatidis* was isolated. This species is predominantly an animal pathogen but there are reports on it being an agent of catheter related blood stream infections of outbreak potential, .

Most speciation articles have documented single species as causative agent, but we had 2 species in patients mentioned here. However, it is also a known fact that multiple species forms the normal flora of skin in some.

CONCLUSIONS

Even though infection with *Malassezia* is considered as a superficial mycoses and is not life threatening, it has gained importance as 7 seven new species have been added since its taxonomic revision. Due to their increasing isolation from patients with other associated diseases, we impress on the significance of clinical and

laboratory diagnosis for better patient management.

ACKNOWLEDGEMENTS

The authors wish to thank Indian Council of Medical Research (ICMR), New Delhi, India, for funding this study.

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