

Difficulties in identifying *Nannizziopsis* species: about two cases of disseminated infection in kidney transplant recipients

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Introduction

Members of the genus *Nannizziopsis*, belonging to *Onygenales*, are recognized as reptile pathogens causing skin infections with frequent visceral dissemination in captive animals. Initially described as *Chrysosporium* anamorph of *Nannizziopsis vriesii*, these moulds are now divided in multiple species. Until recently, only five human cases had been described. We report here difficulties encountered to identify these moulds for two patients.

Case one:

- 58-year-old diabetic woman
- Born in Mali (last travel more than one year earlier)
- Renal transplantation 15 months earlier
- Initial asymptomatic lung nodule / secondary nodular skin lesions
- Lung and skin biopsies: hyphae
- Culture (**figures 1 and 2**)
 - Presumptive identification as *Trichophyton rubrum* despite rapid culture (48h), presence of numerous conidia, and clinical presentation
- **Molecular identification (ITS1-5.8S-ITS2 rDNA region): *Nannizziopsis* sp.**

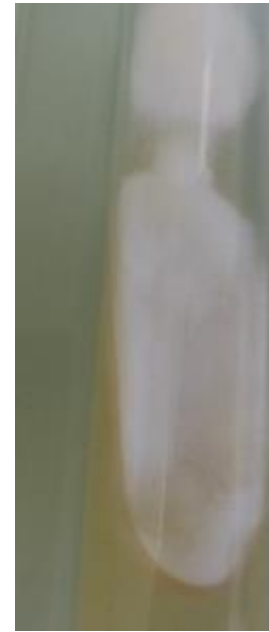


Figure 1

Culture at day 14 (Sabouraud 35°C):
white and fluffy colonies with
cream-colored reverse

Figure 2

Lactophenol cotton blue:
thin, hyaline hyphae with
numerous clavate sessile
aleurioconidia

Case two:

- 62-year-old man
- From Guinea (last travel one year earlier)
- Kidney- transplant recipient for eight years
- After minimal trauma, recurrent right calf cellulitis
- Imaging: lesions in muscles of both legs and pulmonary micronodules, suggestive of dissemination
- Surgical biopsies (right calf infected tissues): hyphae
- Culture: yeast-like colonies with urease activity (**figures 3 and 4**)
 - First proposed identification: *Trichosporon* sp.
 - Failure of MALDI-TOF mass spectrometry (Vitek MS BioMérieux®) to comfort this identification.
- **Molecular identification (ITS1-5.8S-ITS2 rDNA region): *Nannizziopsis* sp.**



Figure 3

Subculture on Sabouraud
slant at 35°C at day 3

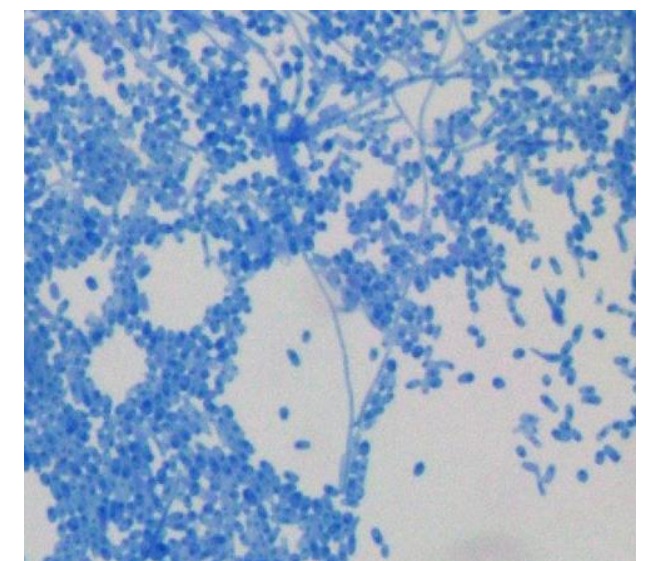


Figure 4

Lactophenol cotton blue:
arthroconidia

Case one & Case two:

- The similarity searches and sequence alignments of both strains grouped the sequences close to the species *N. obscura*.
- Both patients had β -D-glucan > 523 pg/mL whereas galactomannan was consistently negative.
- Antifungal susceptibility testing (EUCAST methodology) revealed no primary resistance to antifungals active against moulds.
- Both patients had favourable outcome under prolonged posaconazole therapy.

Conclusion

- These two cases share common features with most of previous reports:
 - Immunocompromised patients with T-cells deficiency
 - Disseminated disease
 - Patients from West Africa, which suggests specific ecology of these moulds
- β -D-glucan is probably a relevant diagnostic marker
- High susceptibility to antifungals
- Difficulties in identifying *Nannizziopsis* species by morphology, with probable under-diagnosis
- **Molecular identification is mandatory to avoid false identification**