

Infections Due to *Malassezia*

Definition

- Various species of *Malassezia* cause both opportunistic, superficial infections and occasionally systemic infections
- Common superficial infections include:
 - Pityriasis versicolor
 - Seborrheic dermatitis
 - Atopic dermatitis
 - Folliculitis
 - Dandruff

Case Report 1

- Fan *et al.*, *Arch. Dermatol.* (2006) **142**: 1181-1184.
- In January 2004, a 49 year-old female developed an asymptomatic facial papule
- Self-treated with herbs, but became larger, erosive, and produced an exudate
- In March 2004, a similar nasal lesion appeared
- Patient presented to clinic in April 2004
 - No history of trauma
 - Owned a pet dog for 9 months
 - No lymphadenopathy
- Biopsy of lesion
 - Gram stain revealed numerous budding yeast cells
 - Pronounced inflammatory reaction including microabscesses of follicles and numerous lymphocytes and histiocytes
 - PAS staining documented round-to-ovoid cells/spores in necrotic areas as well as in dermis
- Culture/Laboratory Work
 - Skin scrapings from both patient and dog grew yeast-like cells on Sabouraud Dextrose agar with or without olive oil supplement
 - Scanning electron micrographs revealed morphology consistent with *Malassezia pachydermatis*
 - Patient had no other underlying disease or immunosuppression

- Treatment
 - Initially treated with antituberculosis agents because of slow culture results
 - After positive fungus culture results, patient was treated with itraconazole and potassium iodide
 - Lesion stopped growing but was still positive for fungus
 - Therapy changed to fluconazole with cryotherapy to remove lesion
 - Some hypopigmented scarring remained, but patient was free of infection after 15 months

Case Report 2

- Rosales *et al.*, *Ped. Develop. Pathol.* (2004) 7: 86-90.
- Infant born after 23 weeks of gestation
 - Chronic lung disease
 - Necrotizing enterocolitis
 - Intraventricular hemorrhage
 - At 24 days post birth, developed hypotension
 - Treated empirically with amphotericin B
 - Hepatic lesion noted
 - Blood cultures were positive for *Malassezia furfur* on day 11 of treatment (day 35 of life)
 - Central line catheter was also shown to be positive for *M. furfur*
 - Removal of catheter resulted in negative fungus cultures for 2 weeks of amphotericin B therapy
 - Day 50 of life
 - Patient's condition worsened due to intestinal perforation
 - Surgery improved condition and was being given intravenous hyperalimentation infusions of lipids via a scalp catheter
 - Day 83 of life
 - Patient's condition worsened again and seizure occurred
 - Spinal fluid examination revealed fungal forms consistent with *M. furfur*
 - Catheter and blood cultures were positive for *M. furfur*
 - Death occurred on day 86

- Autopsy findings
 - Inflammatory reactions of meninges consistent with meningitis
 - Histopathological examination (silver stained sections) revealed meninges contained yeast cells with morphologies consistent with *M. furfur*
 - No such observations were noted for any other organs in the body

Pityriasis Versicolor

- Synonym: tinea versicolor, among others
- Presentation:
 - Chronic, benign skin disorder
 - Asymptomatic
 - Characterized by scaly patches of variable color (pink, white, or brown) of the upper trunk
 - Worldwide in distribution
- Etiological Agents:
 - Various species of *Malassezia*:
 - *M. furfur*
 - *M. globosa*
 - *M. sympodialis*
 - *M. sloofiae*
 - *M. restricta*
 - There are other species of *Malassezia* which may or may not be involved in pityriasis versicolor
 - *M. obtusa*
 - *M. pachydermatis* - common pathogen of dogs
 - *Malassezia* is a basidiomycetous yeast, but the telomorph has yet to be described
 - Different species differentiated based upon:
 - Physiological parameters, including use of complex lipid sources
 - Genetic-based differences
- Epidemiology:
 - Typically an infection of children and young adults
 - Associated with hormonal changes and increased sebum production
 - Favored by high temperature and humidity, particularly tropic areas

- Clinical manifestations
 - Multiple macules and/or patches varying in appearance
 - Hypopigmented
 - Hyperpigmented
 - Erythematous
 - Commonly affected areas include back, chest, abdomen, neck, and upper limbs
 - Children often acquire facial macular lesions
- Diagnosis
 - Typically, KOH preps of lesions that show yeast and pseudohyphal elements (“spaghetti and meat balls”)
 - Can confirm the diagnosis by using a Wood's lamp to show yellow to yellow-green fluorescence of active lesions.
- Treatment is via use of topical agents including:
 - Selenium sulfide shampoo
 - Zinc pyrithione shampoo
 - Ciclopirox
 - Terbinafine
 - Benzoyl peroxide

References

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