

Please read this bit first

The HPCSA and the Med Tech Society have confirmed that this clinical case study, plus your routine review of your EQA reports from Thistle QA, should be documented as a "Journal Club" activity. This means that you must record those attending for CEU purposes. Thistle will **not** issue a certificate to cover these activities, nor send out "correct" answers to the CEU questions at the end of this case study.

The Thistle QA CEU No is: **MT00025**.

Each attendee should claim **THREE** CEU points for completing this Quality Control Journal Club exercise, and retain a copy of the relevant Thistle QA Participation Certificate as proof of registration on a Thistle QA EQA.

Cycle 21 Organism 4:

Candida albicans

Candida organisms are yeasts that exist predominately in a unicellular form. They are small (4-6 µm), thin walled, ovoid cells (blastospores) that reproduce by budding. Candida species form smooth, creamy white, glistening colonies. A rapid presumptive identification of *C. albicans* may be made by placing the organisms in serum and observing germ tube formation – projections from the cell surface that appear within 90 minutes. The test is considered as presumptive because not all isolates of *C. albicans* will be germ tube positive and false-positive results may be obtained, especially with *C. tropicalis* which has constrictions at the junction of the blastoconidium¹. Other tests available for the identification of Candida species include carbohydrate assimilation and fermentation, nitrate utilization, urease production and chlamydo-spore formation.

Candida species are normal commensals of humans and are commonly found on skin, gastrointestinal tract, expectorated sputum, and female genital tract². The introduction of antibiotics and the widespread use of in-dwelling intravenous catheters have played a role in the increased incidence of Candida infections. Antibiotics suppress normal bacterial flora and allow Candida organisms to proliferate. Sulfonamides decrease neutrophil Candida intracellular killing, and tetracycline, doxycycline, and aminoglycosides have been shown to decrease neutrophil phagocytosis³.

The clinical manifestations may be divided into mucocutaneous and deep organ involvement:

Mucous Membrane Infections

Thrush – The term thrush is applied to a specific form of oral candidiasis characterized by creamy white, curd-like patches on the tongue and on other oral mucosal surfaces.

Candida Esophagitis – It is commonly associated with treatment of malignancy of the haematopoietic or lymphatic systems and in AIDS patients.

Candida Vaginitis - This common infection is most frequently seen in antibiotic therapy, diabetes, or in pregnancy.

Other infections caused by Candida are folliculitis, balanitis, paronychia, onychomycosis, and other infections of the skin.

Deep Organ Involvement

These include infections of the central nervous system, respiratory tract, heart, urinary tract, bones, eyes, and other organs of the body⁴.

References

1. Dealler SF. 1991. Candida albicans colony identification in 5 minutes in a general microbiology laboratory. J Clin Microbiol. 29:1081-1082.
2. Odds FC. 1988. Candida and Candidosis: A Review and Bibliography. London: Balliere Tindall.
3. Lehrer RI. 1971. Inhibition by sulfonamides of the candidacidal activity of human neutrophils. J Clin Invest. 50: 2498-2505.
4. Body GP. 1993. Candidiasis: Pathogenesis, Diagnosis and Treatment. New York: Raven Press.

Questions

1. What methods would you use to identify Candida albicans?
2. What methods are used to determine the susceptibility of clinically important C. albicans isolates?
3. What factors have caused an increased incidence of C. albicans infections?
4. What types of infections are caused by C. albicans?