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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.

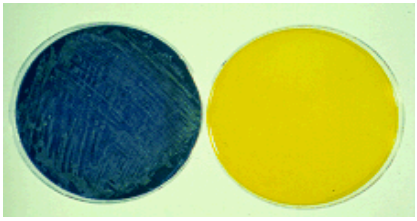
The Thistle QA CEU No is: **MT00025.**

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 24 - Organism 2:

Cryptococcus neoformans

Cryptococcus neoformans is an encapsulated basidiomycete yeast-like fungus with a predilection for the respiratory and nervous system of humans and animals. The two varieties, C. neoformans var. neoformans and C. neoformans var. gattii have now been given separate species status and are distinguishable biochemically and by molecular techniques.



CGB agar turns blue for Cryptococcus gattii.

Canavanine-glycine-bromthymol blue (CGB) agar is now the medium of choice to determine the species status between C. neoformans and C. gattii isolates. This simple biotype test is based on the ability of C. gattii isolates to grow in the presence of L-canavanine and to assimilate glycine as a sole carbon source.

Basidiospores of C. neoformans.

Culture of C. Neoformans

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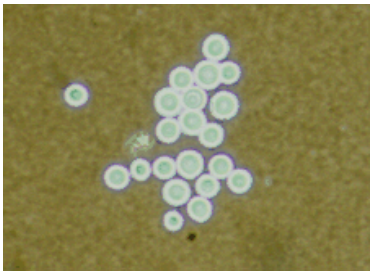
On Sabouraud's dextrose agar colonies are cream coloured, smooth, mucoid yeast-like in appearance.



India ink preparation showing capsules of C. Neoformans

Clinical significance:

In humans, C. neoformans affects immuno-compromised hosts predominantly and is the commonest cause of fungal meningitis; worldwide, 7-10% of patients with AIDS are affected. AIDS associated cryptococcosis accounts for 50% of all cryptococcal infections reported annually and usually occurs in HIV patients when their CD4 lymphocyte count is below 200/mm3. Meningitis is the predominant clinical presentation with fever and headache as the most common symptoms. Secondary cutaneous infections occur in up to 15% of patients with disseminated cryptococcosis and often indicate a poor prognosis. Lesions usually begin as small papules that subsequently ulcerate, but may also present as abscesses, erythematous nodules, or cellulitis. This species is found in nature in avian excreta, especially weathered pigeon droppings, which are believed to be the source of infection.

In Vivo Efficacy

The most commonly used agents for treatment of cryptococcal infections are amphotericin B, flucytosine, and fluconazole, and particularly amphotericin B and flucytosine in combination. Fluconazole prophylaxis is also in common practice in patients who have recovered from cryptococcal infections. However, clinical failure with fluconazole has been reported. Fluconazole combined with flucytosine and triple therapy with amphotericin B, flucytosine, and fluconazole have been reported as effective.

CPD Questions:

1. Do your own laboratory findings with regard to fungal meningitis agree with those stated above?
2. How does your own lab's system for isolating C. neoformans compare to that described above?
