Candida auris: lessons learnt from the first detected case in Aotearoa New Zealand

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Candida auris (*C. auris*), a multidrug resistant yeast, is a global threat. It can cause outbreaks within healthcare facilities, and presents treatment, laboratory diagnostic and infection prevention and control (IPC) challenges.[1,2] Due to its rapid global spread, there is a risk of importation to Aotearoa New Zealand, especially following the relaxation of COVID-related border restrictions.[3] We describe the first detection of *C. auris* in Aotearoa New Zealand and lessons learnt for laboratory diagnosis and IPC.

Case report

A 69-year-old man was admitted from an overseas hospital for the ongoing management of cancer. Screening for multidrug-resistant organisms (MRO) occurred on the third day of admission. Passive surveillance for *C. auris* was occurring, whereby yeast-like colonies growing on routine MRO screening plates were identified. A white colony on the CARBA-SMART (bioMerieux) plate from a groin swab was identified by MALDI-TOF (bioMerieux Vitek MS) as *C. auris*.

Phenotypic test results (API ID32C strip; growth at 27°C, 37°C, 40°C, and 42°C, with no growth at 45°C) and growth on chromogenic agar (Figure 1) were consistent with *C. auris*. 18S rRNA gene PCR and sequencing found 100% sequence identity to *C. auris*. Antifungal susceptibility testing revealed minimum inhibitory concentrations consistent with non-susceptibility to fluconazole and amphotericin B (as described in previous studies).[4]

Following the detection of *C. auris* colonisation, Contact Precautions were implemented. The patient had been admitted to a single room. Environmental cleaning with sporicidal disinfectants reduced the risk of fomite-mediated transmission. Two rounds of screening were performed on all patients on the ward at the same time as the case, before correct IPC precautions were implemented. Patients discharged prior to screening had an alert linked to their electronic patient record and were screened at their next presentation. Groin and axilla swabs were placed into salt Sabouraud dulcitol broth and blind subbed on to CHROMagar Candida Plus at day 5, or earlier if the broth became cloudy. Of 39 patients screened, 12 samples resulted in cloudy broths which were subbed on to non-selective blood agar; all colonies were bacterial (identified by MALDI-TOF). No other patients were colonised with *C. auris*.

Discussion

This case highlights learning points for laboratory diagnostics and IPC. The actions discussed are consistent with the Australasian *C. auris* IPC guidelines, and the Aotearoa New Zealand Public Health Expert Briefing.[5,6]

Although active *C. auris* screening was not practiced at the time, passive surveillance was underway, allowing for detection of this case. The case was colonised, not infected, so treatment for *C. auris* was not required. Colonisation can be detected from various body sites, though groin and axilla swabs are the most sensitive samples.[7]

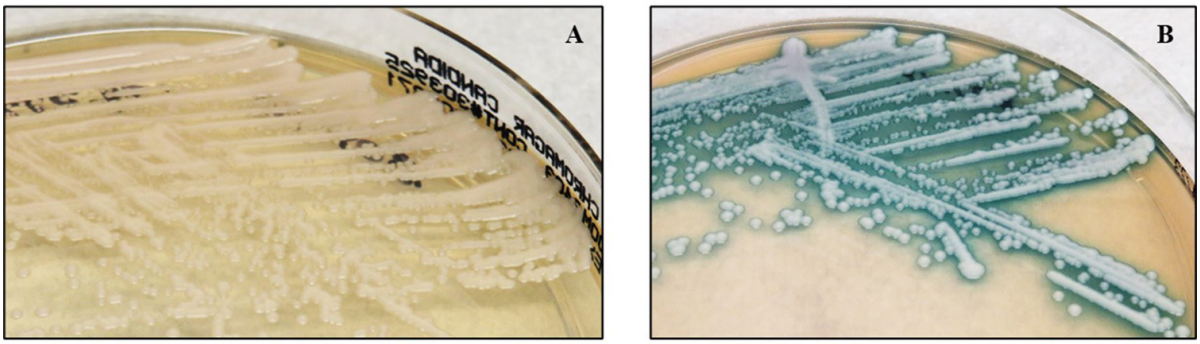
MRO screening for all overseas hospital transfers at admission is expected practice. This did not occur until the third day of admission, a missed opportunity. The most effective IPC actions in the hierarchy of controls aim to eliminate hazards.[8] The cornerstone of eliminating MRO transmission is the triage of patients for risk factors with subsequent screening, which must occur at the point of admission. Fortunately, this patient was admitted to a single room; however, medical equipment was shared with patients in nearby rooms. Shared patient equipment was decontaminated with sporicidal peracetic acid wipes, then exposed to vapourised hydrogen

peroxide. Screening of ward inpatients confirmed that there was no cross-transmission of *C. auris*.

C. auris can be difficult to distinguish from other *Candida* species. Identification requires molecular technology and specific materials and expertise for susceptibility testing. The multidrug resistance detected is typical of *C. auris*; indeed, pan-resistant isolates have been reported.[4] During the ward screening 12 broths became cloudy, raising the concern of cross-transmission, because they were from patients with a plausible link to the case. Fortunately, this was found to be due to bacterial growth only. Consequently, the addition of vancomycin to the broth formula to eliminate bacterial growth is being evaluated.

This case is a reminder to healthcare practitioners to be vigilant to the risk of *C. auris* importation, to triage all patients for risk factors for acquisition and to conduct screening at admission. Healthcare facilities must prepare for the diagnostic and IPC requirements for the management of *C. auris* colonisation and infection.

Figure 1: The colonial appearance of *C. auris* on CHROMagar Candida and CHROMagar Candida PLUS.



(A) shows growth of *C. auris* on CHROMagar Candida; the appearance is of white colonies that cannot be distinguished between *Candida* species.
(B) shows growth of *C. auris* on CHROMagar Candida PLUS; the appearance is of characteristic light blue colonies with a blue halo. This specialised agar specifically allows distinction of *C. auris* from other *Candida* species.

COMPETING INTERESTS
Nil.

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