

Poster 4



First Case report of Aspergillosis in COVID-19 patients at Medina, Saudi Arabia

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Abstract

Background: Since the beginning of Coronavirus diseases 2019 (COVID-19) it has been associated with an invasive fungal infection. Several COVID-19 cases were complicated due to co-infection with *Aspergillus*, *Rhizopus*, *Mucor* and other mould species. This complication usually results in deteriorating patient prognosis, prolonging hospital stay and possible mortality. The study aims is to present a case with COVID-19 pulmonary Aspergillosis fungal infection.

Material and methods referred COVID cases from Ohud hospital for microbiology diagnosis at King Fahad Hospital in Medina (KFH) Data was collected from health records, clinical and radiological report, and laboratory test including respiratory culture of sputum and bronchial wash, blood culture, complete blood count (CBC).

Results: A 72-year-old male patient presented with fever, cough, severe shortness of breath and abdominal pain that persisted for a week. The patient was admitted to the hospital on the 7th of April 2020, on the same day he was intubated and admitted to ICU. The patient was diabetic and hypertensive and COVID-19 pneumonia was confirmed. Soon after, the patient became septic, and his blood culture grow *Candida albican*. His sputum culture was positive for *Acinetobacter* spp. The patient was treated with a broad range of antibiotics and antifungal which included, colistin, tigecycline, vancomycin, meropenem and caspofungin. The patient's hospital course was complicated with hospital acquired pneumonia. His sputum culture was positive for *Aspergillus ustus*. Immediately, the patient case was complicated with septic shock, acute kidney injury and disseminated intravascular coagulation (DIC). Sadly, the patient died on 13 May 2020

Conclusion: Invasive fungal infections are characterized with high mortality. Early diagnosis is key and screening for resistance is curial for successful treatment. There is a great need for reporting such fungal infections to provide appropriate diagnostic tools that are lacking

Case timeline

Fever, cough, shortness of breath & abdominal pain
Comorbidities: diabetes and hypertension

31 March 2020

Sputum culture :
Acinetobacter and
Aspergillus ustus.

15th April, 2020

Complication : sever pneumonia, septic shock, acute kidney injury and DIC

22nd April, 2020

7th April 2020

Intubated and admitted to ICU same day of hospital admission

Blood culture :
Candida albican

20th April 2020

13 May 2020

Patient died

Fig1 showing the case progress. A 72-year-old male diabetic and hypertensive and COVID19

Broad spectrum antibiotics and antifungal
Colistin, tigecycline, vancomycin, meropenem, and Caspofungin

Laboratory diagnosis

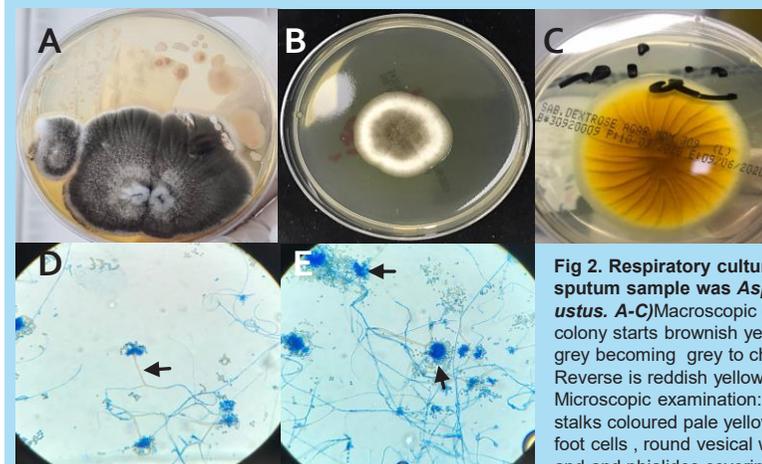


Fig 2. Respiratory culture results for sputum sample was *Aspergillus ustus*. A-C) Macroscopic examination: colony starts brownish yellow to purple grey becoming grey to charcoal. Reverse is reddish yellow. D-E) Microscopic examination: short rough stalks coloured pale yellow, arising from foot cells, round vesical with mutuale and and phialides covering two thirds, no hulle cells seen. Conidia were rough round 3.5µm size.

Discussions

- It is challenging to diagnose COVID-19-associated invasive pulmonary aspergillosis (CAPA). In *Aspergillus* genus, most isolated causative agents were *Aspergillus fumigatus* and *Aspergillus niger*.
- *Aspergillus ustus* rarely causes cutaneous infections. It has been reported to cause onychomycosis and otitis media. However, it can be nosocomially acquired in severely immunosuppressed patients. In this risk group mortality rate is 50%. and short survival
- Previous literature reported high MIC of *Aspergillus ustus* towards Caspofungin and triazoles. Leading to less effective treatment
- This patient's case was complicated with multiple comorbidities in addition respiratory disease and fungemia.

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