



Lichtheimia ramosa Mucormycosis in 76-year-old Immunocompetent Female Following Attack by a Highland Cow

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Mucormycosis:

- Severe fungal infection, typically only seen in immunocompromised patients.
- Associated with high morbidity and mortality.
- Usually occurs as pulmonary or rhino - cerebral disease, but cutaneous or disseminated disease can rarely occur.
- Definitive diagnosis requires isolation of mucoraceous mould.

Case History:

A 76-year-old immunocompetent female was gored then trampled by a Highland cow, causing multiple fractures and a 23 cm leg wound, which was in contact with mud and cow faeces for several hours.



The patient was initially managed for the fractures and the wound was washed out. A surgical site infection subsequently developed and a wound swab was collected (day 0, below). Due to concerns of necrotising fasciitis, the wound was surgically debrided and multiple tissue samples were taken for microbiological investigation, including some inoculated in blood culture bottles (day 5).

Results:

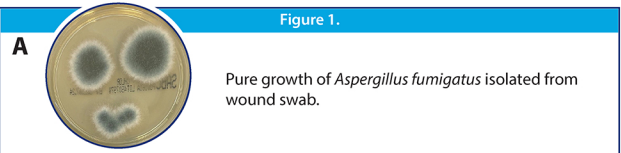


Figure 1.

Pure growth of *Aspergillus fumigatus* isolated from wound swab.

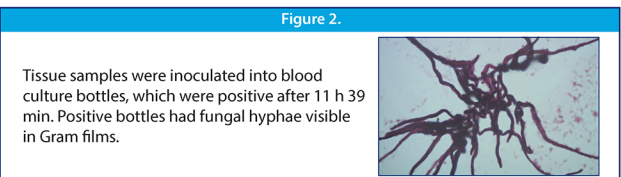


Figure 2.

Tissue samples were inoculated into blood culture bottles, which were positive after 11 h 39 min. Positive bottles had fungal hyphae visible in Gram films.

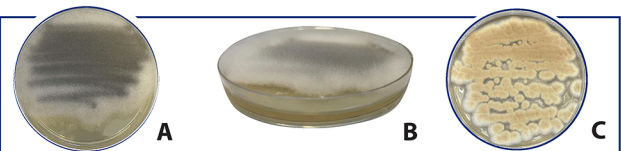


Figure 3.

Mucoraceous mould isolated from tissue samples and intra-operative deep wound swab. Colonies have a cottony texture, dark centre and colourless reverse (A) with aerial hyphae visible after incubation at 36°C for 24 h. (B) *Aspergillus terreus*. (C) and *Serratia marcescens* were also isolated from tissue samples. Mucoraceous mould was referred for sensitivity testing and identified as *Lichtheimia ramosa* by MALDI-TOF.

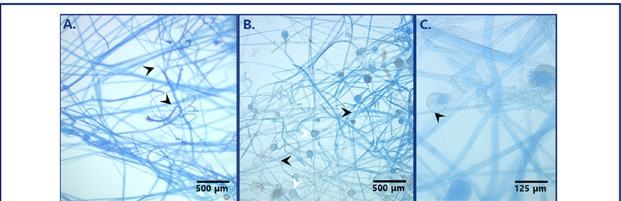
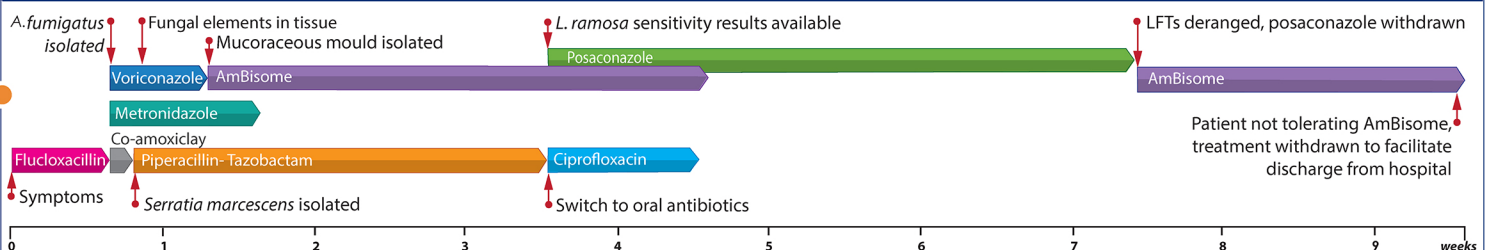


Figure 4.

Lactophenol cotton blue microscopy after incubation at 36°C for 24 h. (A) Rhizoids (black arrows) and stelons present (B) Broad, ribbon-like, aseptate hyphae with short right-angled hyphae (black arrows) and large terminal sporangia (white arrows). (C) Pyriform sporangia (black arrow) with smooth, ellipsoid spores 5-8 x 3.5 µm.

Treatment:



Conclusion:

- Environmental contamination of wounds can cause severe infections, and may rapidly evolve to necrotising fasciitis.
- Deep samples, such as intra-operative swabs and tissue samples, are better suited for isolation of causative organisms than superficial swabs.

Mucormycoses are rare in immunocompetent patients, but should be considered where broken skin is exposed to soil or organic matter.

Fungal culture media should be considered in cases such as these to enhance microbiological investigations.