Rhinocerebral mucormycosis in a newly diagnosed Type 1 Diabetic: A case report at a tertiary facility in Northern Nigeria

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Background

- Rhinocerebral mucormycosis (ROCM) is a rare but severe opportunistic fungal infection
- Usually caused by Fungi of the phylum Mucoromycotina, common genera implicated are; *Mucor*, *Rhizomucor*, *Absidia* and *Rhizopus*
- Diabetes mellitus (DM) is the commonest predisposing factor
- We aimed to report ROCM in a newly diagnosed diabetic and highlight challenges in case management

Methods

- We reviewed medical records of a diabetic patient diagnosed with ROCM

Case report

- A 32 year old single male, vulcanizer presented with 1 month history of excessive urination, thirst, weight loss despite increased appetite, 4 day history of painful micturition and 1 day history of decreasing consciousness
- He was not a known diabetic or hypertensive, had no history of other chronic illnesses and no previous hospital admissions
- Clinical examination revealed an acutely ill looking young man, moderately dehydrated, afebrile with bilateral pitting pedal oedema and a Glasgow Coma Score of 13/15
- His respiratory rate was 24 cycles/ minute, BP 130/80 mmHg and he had right renal angle tenderness
- Investigations at admission were as follows: Urinalysis was positive for glucose and blood, negative for Ketones, protein and leucocytes; Blood glucose of 30.2 mmol/l and anion gap of 10 mmol
- A diagnosis of hyperglycaemic emergency precipitated by pyelonephritis was made

Case report continued

- He was commenced on treatment with soluble insulin 4 IU, I.M, Ceftriaxone & Metronidazole IV
- On the 3rd day of admission, he was noticed to have right (rt) sided facial swelling, proptosis with chemosis of rt eye, black mucoid rt nasal discharge (fig.1) and ulcer on the hard palate (fig.2)

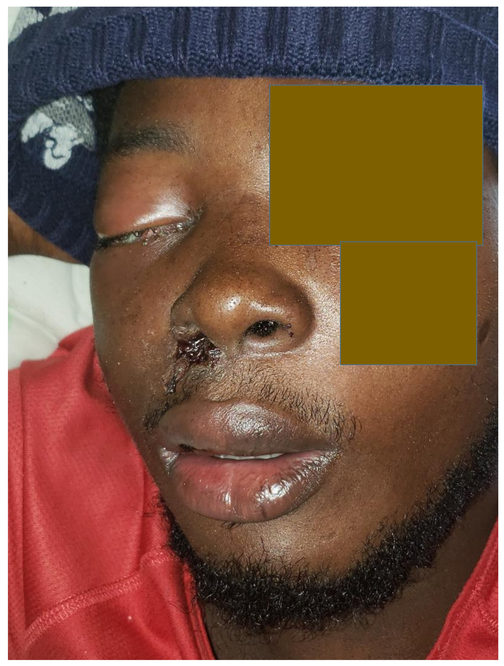

Fig.1:Picture showing right sided facial swelling, proptosis & nasal discharge

Fig.2:Picture showing ulcer with necrotic base on right side of hard palate

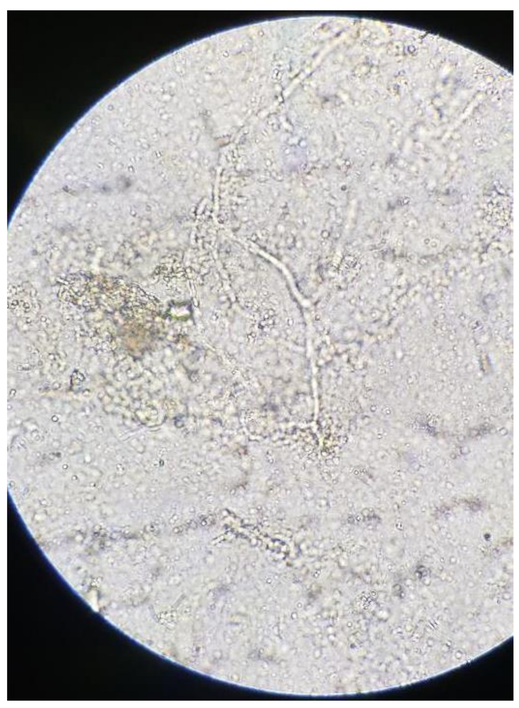

Fig 3: Direct microscopy of necrotic tissue on 10% KOH mount

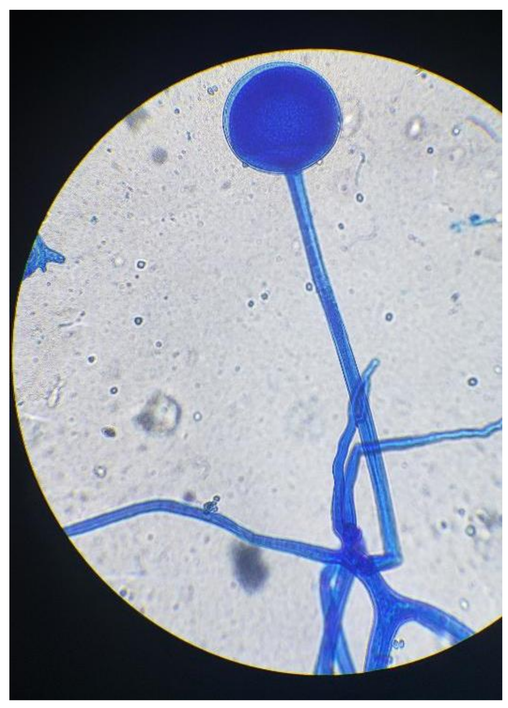

Fig 4: Microscopy of culture using LPCB stain showing single sporangiophore & nodal rhizoids

- Biopsy was taken for fungal culture and oral Itraconazole 200mg was commenced
- Direct microscopy of biopsied tissue on KOH mount showed broad, aseptate hyphae (Fig.3)
- Culture on SDA grew wooly white colonies which on microscopy showed single sporangiophores with prominent nodal rhizoids, consistent with *Rhizopus arrhizus* (Fig.4)

Management

- Medical Microbiologist advised extensive surgical debridement & treatment with Amphotericin B (Amp B)
- Conservative debridement done due to background DM
- Amp B had to be sourced out of state, available in only 3 States in the Country
- Six days after diagnosis of ROCM was made, patient commenced Liposomal Amp B, 200mg 8 hourly however could only afford 3 doses for financial constraint
- He also had daily dressing of debrided area with fluconazole soaked packs
- He recommenced Amp B deoxycholate 14 days after the initial dose
- He developed diarrhea after 6 days on Amp B deoxycholate and died after attempts at resuscitation failed

Conclusion

- ROCM occurred in a newly diagnosed diabetic patient without Ketoacidosis
- Inadequacy of funds, irregular access to Amp B and its side effects might have contributed to the poor outcome in this patient

References

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