

Mucormycosis experience in renal transplant patients with Covid -19 infection

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Introduction

- Mucormycosis, also known as black fungus, is a serious fungal infection usually in people who are immunocompromised.
- The current pandemic of COVID-19 has been associated with various reports of mucormycosis from different regions of the world.
- During this covid pandemic, we had two mucormycosis infections in our renal transplant follow up patients.
- We herein report a cases allograft mucoromycosis and other rhinocerebral mucormycosis in renal transplant recipient following covid-19 infection .

Base line characteristics

	Case- 1	Case-2
Age /Sex	35 year /Female	40 year/Male
Basic disease	NA	NA
Post transplant period	46 Months	26 Months
Induction agent	Basiliximab	ATG
Maintenance	tacrolimus, mycophenolate mofetil and prednisolone	tacrolimus, mycophenolate mofetil and prednisolone
ABOc /ABOi	ABOc	ABOc
H/O allograft dysfunction in last 6 months	Nil	Nil
Duration of current illness	2-3 days before admission	7-8 days before admission
Covid facility	Level 3- in ICU	Level 3- in ICU

Investigations

	Case -1	Case-2
Anemia, Neutrophilic leukocytosis Thrombocytopenia	+ + +	+ + +
Allograft dysfunction	Severe	Severe
D- dimer CRP	Increased Increased	Increased Increased
IL- 6 S.Ferretin	Increased Increased	Increased Increased
S.LDH	Increased	Increased

Treatment Given

Ay	Case-1	Case-2
Tacrolimus	Stopped	Continued
MMF	Stopped	Stopped
Steroid	Converted to IV with High dose	Converted to IV with High dose
IV Antibiotic	Yes	Yes
Ramdeshavir	yes	Yes
Ampho B-	yes	yes
RRRT	6 session of SLED	4 session of SLED
Mechanical ventilation	Yes	Yes
Succumbed on	Day 13 of admission	Day 9 of admission

Post mortem allograft kidney biopsy of case-1

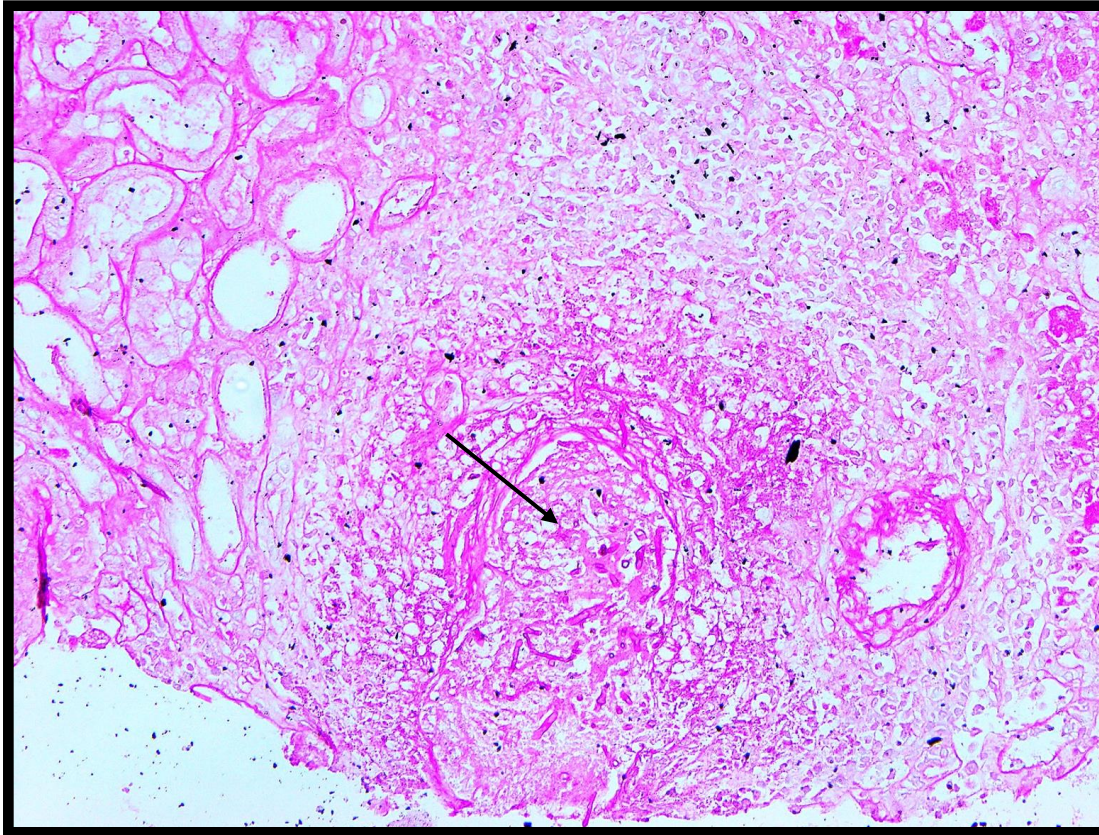


Fig No-1

Post mortem allograft kidney biopsy, -Medium size vessel shows angioinvasion by broad based aseptate fungal hyphae (Arrow) .

Case-2



Fig No-2
Proptosis along with ptosis in right eye

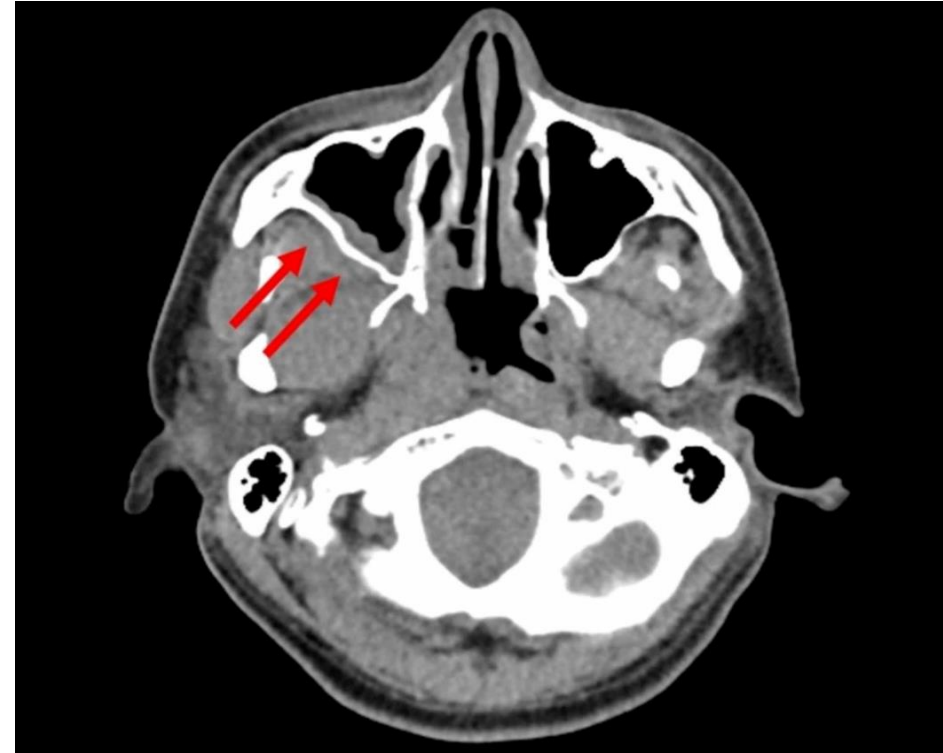


Fig No-3 Axial non-contrast CT . The red arrows show infiltration of the right retro antral fat plane indicating invasive disease extending through the posterior wall of the right maxillary sinus.

Discussion

- Mucormycosis is considered as a rare invasive infection caused by class phycomycocetes fungi involving immunocompromised patients.
- Post renal transplant patients run a risk of developing opportunistic infections due to their immunosuppressed state.
- There is a resurgence of mucormycosis during the current COVID-19 pandemic and renal transplant recipients are at high risk.
- Mucormycosis can involve any site of body but most common site is upper respiratory track along with intracranial extension.
- In these two cases, the first case report of renal allograft mucormycosis complicating severe COVID-19 pneumonia, which as per our knowledge is the 1st reported case.
- As there are no specific manifestations, treating physicians should remain aware of this possibility in such a setting.

References

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- Krishan L. Gupta¹, Kusum Joshi², Harbir S. Kohli¹, Vivekanand Jha¹ and Vinay Sakhuja-Mucormycosis (zygomycosis) of renal allograft *Clin Kidney J* (2012) 5: 502–507