

A case of rhino orbital mucormycosis

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Chief complaint

- A 33 year old male patient who was covid positive presented with painful ocular movements, redness and swelling in right eye since 3days.



History of present illness

- Complaints of painful ocular movements, redness and swelling in right eye since 3days.
 - Associated with watering from right eye,
 - H/o right dental pain,
 - H/o decreased sensation of right cheek
 - H/o difficulty in opening mouth
 - H/o nasal stuffiness
 - H/o blackish nasal discharge for 1day
 - No H/o deviation of angle of mouth/ altered sensorium/ focal seizures
- since 3 days



History of past illness

- He was diagnosed as having covid -19 pneumonia 12 days back
- Spo2 – 89% on room air and 98% with 5-6 litres oxygen
- H/o oxygen therapy present (5-6 litres) for 3 days
- H/o intravenous steroid usage present for 5 days
- Followed by oral steroids in tapering doses for 20 days.
- No H/o diabetes mellitus
- No H/o thyroid disease
- H/o penetrating injury to left eye with wooden stick 30 years back



On Ocular examination

	Right eye	Left eye (phthisis bulbi)
Visual Acuity (at the time of presentation)	6/9 ph 6/6p	No perception of light
Extraocular movements	Full and free (painful ocular movements) <div data-bbox="1411 629 1625 808"> </div>	Could not be elicited
Eyelids	Upper lid edema with incomplete lid closure	Mechanical ptosis +
Interpalpebral fissure	Horizontal – 28mm Vertical – 11mm (increased due to axial proptosis – with luedde’s exophthalmometer – 23mm)	Horizontal 23mm Vertical 3mm } due to contracted socket



	Right eye	Left eye
Conjunctiva	Diffuse conjunctival congestion with chemosis and inferior conjunctiva was exposed and dessicated	other details could not be made out due to phthisis bulbi
Cornea	Transparent Normal in size and shape Corneal sensations – present	
Anterior chamber	Normal depth, contents clear	
Pupil	Normal size, reacting to light	
Lens	Clear	



Clinical pictures at the time of presentation



- Treatment given
- 1. Eyedrops. MOXIFLOXACIN 0.5% 4times/day
- 2. Eye ointment. MOXIFLOXACIN 0.5% @ bedtime



- Case was referred to ENT surgeon where Diagnostic Nasal Endoscopy was done which revealed –

Bilateral inferior turbinate hypertrophy

Nasopharynx – mucopurulent discharge

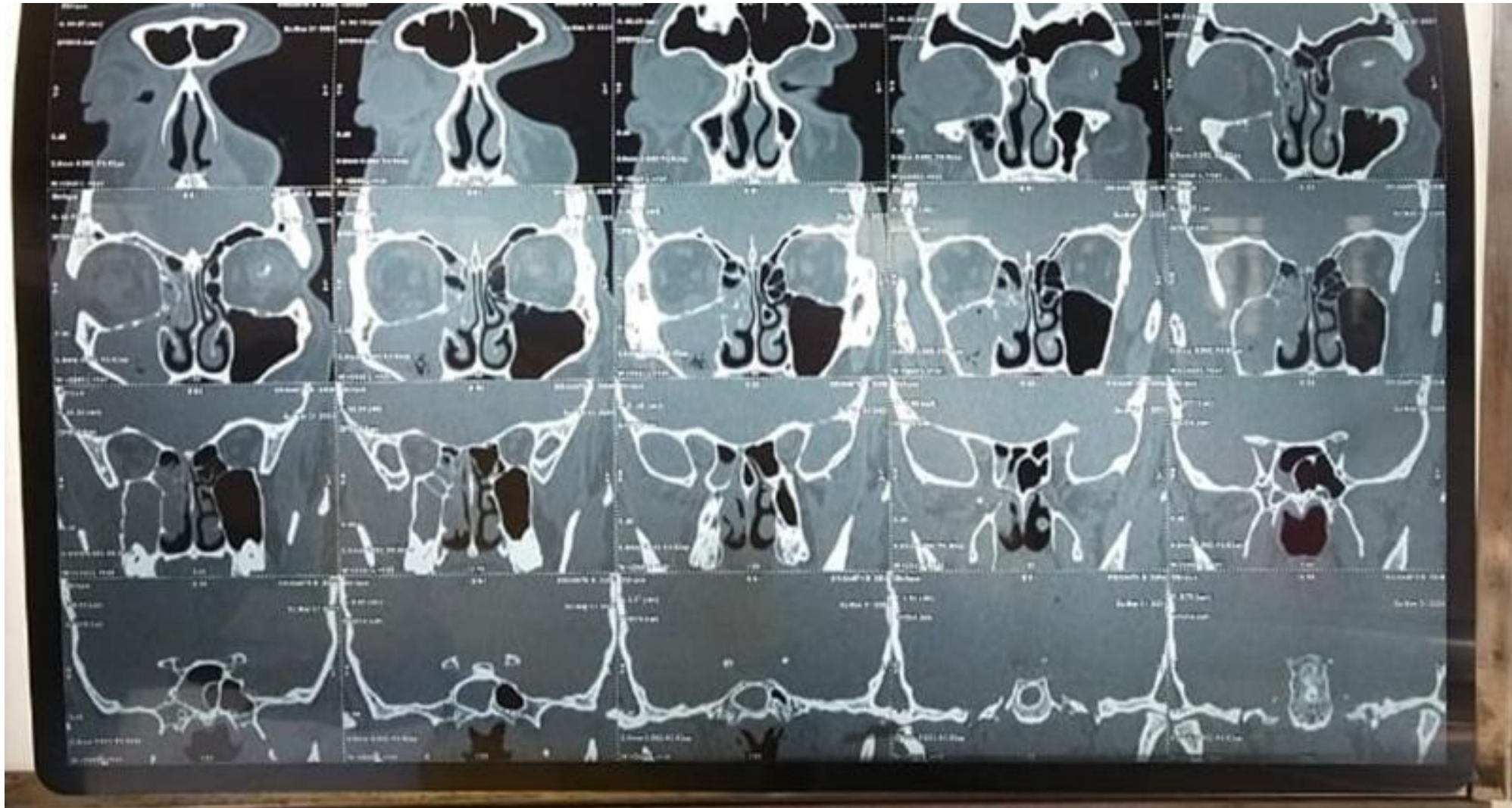
Right middle turbinate – blackish discoloration,

Mucopurulent discharge in right nasal cavity.

Left middle turbinate - mucopurulent discharge.

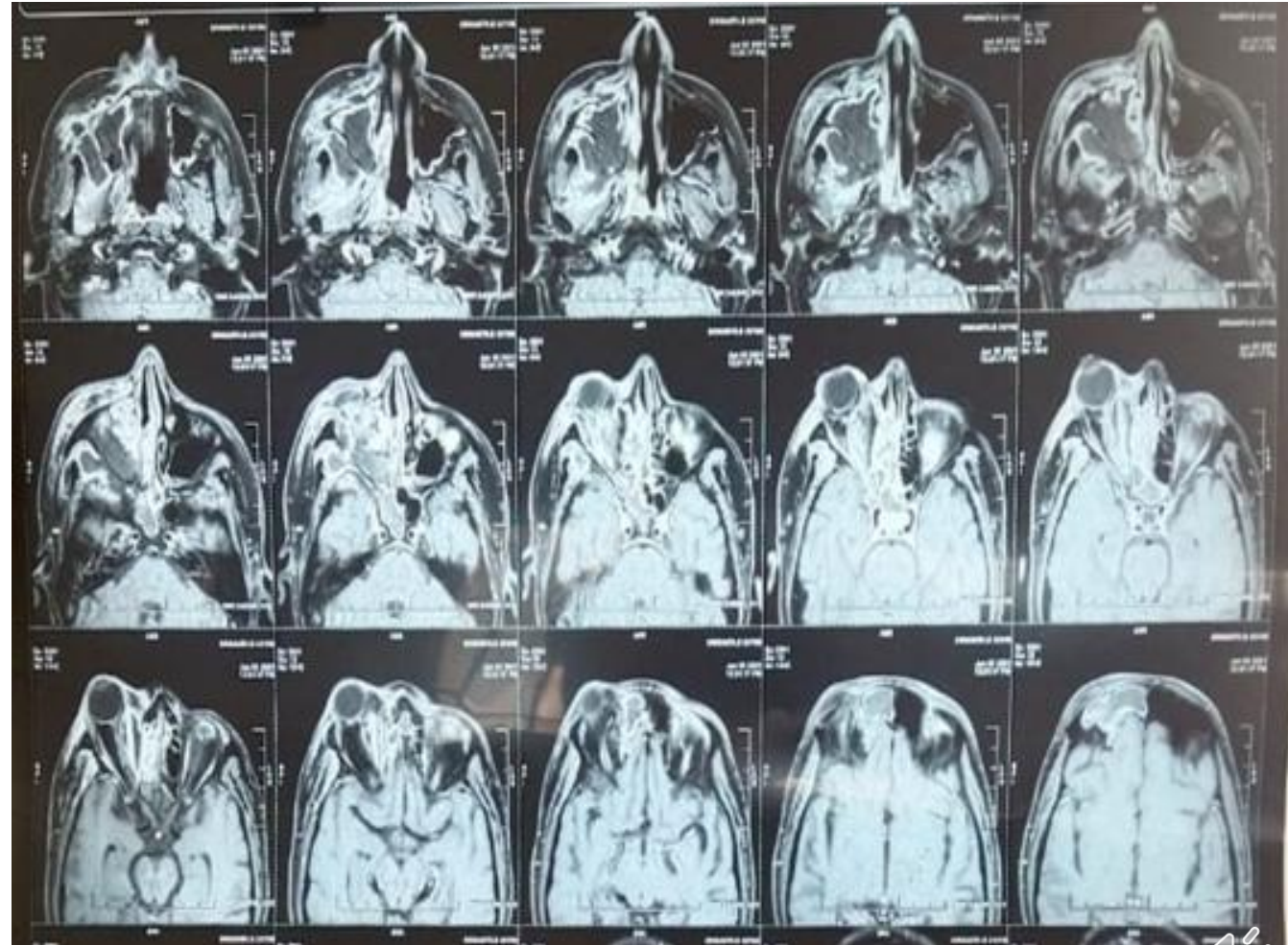


- Plain CT of nose and paranasal sinuses was advised which showed –
S/o sinusitis with orbital cellulitis ?Fungal etiology (invasive fungal sinusitis)



MRI PNS & Brain (Plain & Contrast Study)

- **Right orbital cellulitis with optic nerve involvement.**
- **Breach in the floor of right orbit, involving intraconal & extraconal compartments of right eye.**
- Medial & inferior recti muscles are oedematous & bulky.
- Altered signal intensity extending superiorly into pterygopalatine fossa to inferior portion of orbital apex & reaching upto cavernous sinus.
- Abnormal enhancement in anterolateral wall of cavernous sinus on right side.
- Right paranasal sinusitis causing widening & obstruction of right osteomeatal unit, right fronto-ethmoidal & sphenoid-ethmoidal recesses with necrotic areas.



KOH mount: broad, aseptate, hyaline hyphae with wide angle branching



On culture in Sabouraud Dextrose Agar – mucor species growth was seen



Provisional diagnosis

- Right Rhino Orbital Mucormycosis



LFT

- Total Bilirubin – 0.2mg/dl
 Direct Bilirubin – 0.1mg/dl
 Indirect Bilirubin – 0.1mg/dl
- AST/ SGOT: 39U/L
- ALT/ SGPT: 45U/L
- Alkaline Phosphatase: 117U/L
- Serum Proteins – 6.5g/dl
- Serum Albumin – 3.6g/dl
- Serum Globulins – 2.9g/dl
- A/G ratio – 1.24

CBP

- Hb: 12.9 g/dl
- TLC – 9800 cells/mm²
- Platelets – 2.1 lakhs/mm²

RBS – 198mg/dl

RFT

- Serum Urea -10 mg/dl
- Serum Creatinine - 0.5 mg/dl
- Serum Na⁺ 130 mmol/L
- Serum K⁺ 3.5 mmol/L

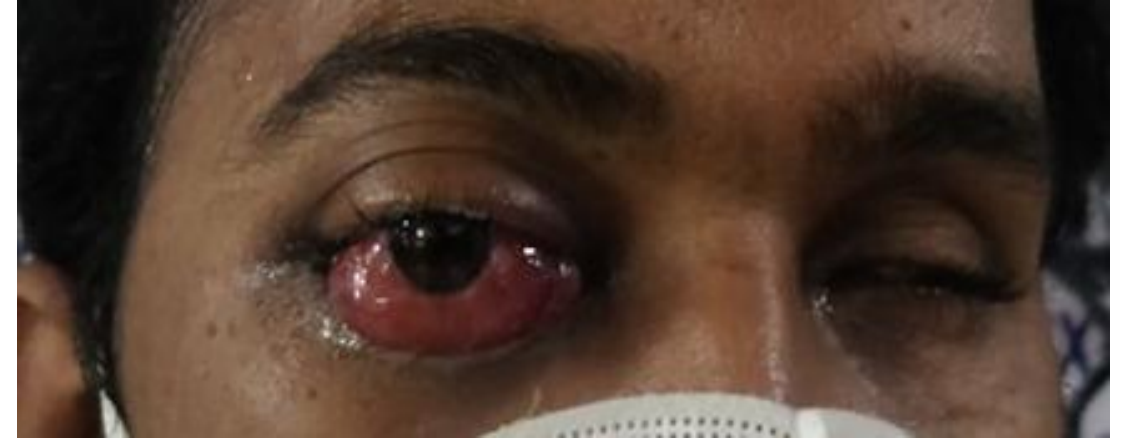


- **Treatment advised**
- Inj. Amphotericin-b 50mg in 100ml of 5% dextrose slow IV over 2-3 hours on day1
- Followed by, 250mg in 100ml of 5% dextrose over 6 hours from day 2

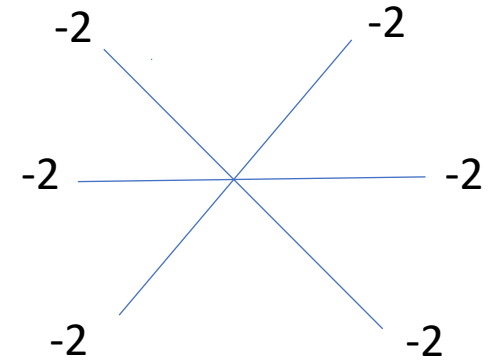


After 1 week

- Complaint of decrease in vision for far in right eye.
- Associated with increase in pain, swelling, redness and watering.
- On examination



	Right eye
Visual acuity (after 1 week)	6/24 ph 6/12p
Extraocular movements	Restriction of all ocular movements
Eyelids	Periorbital edema ↑
Interpalpebral fissure	Horizontal 28mm Vertical 14mm Axial proptosis increased (with Luedde's exophthalmometer – 26mm)
Conjunctiva	Congestion and chemosis increased
Pupil	Normal size, reacting to light



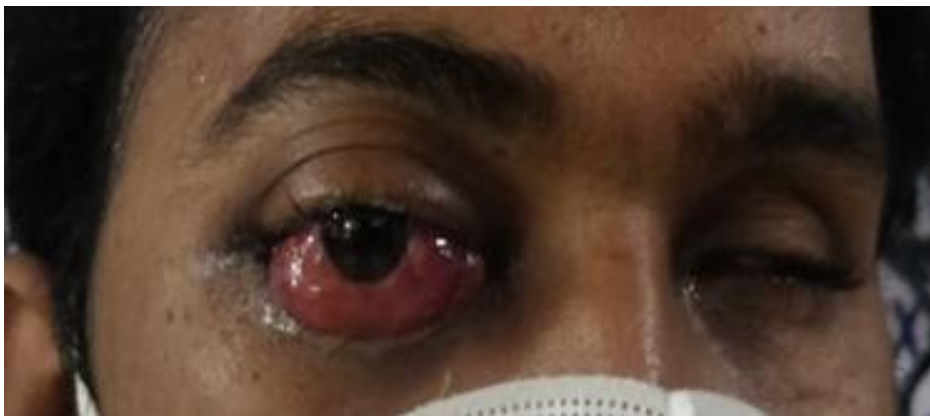
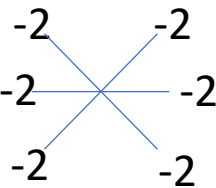
Surgical management

- Right endoscopic sinus surgery with medial wall orbitotomy and orbital decompression done under general anaesthesia.
- **Postoperative day 1**
 - Amount of proptosis reduced (23mm)
 - Periorbital edema reduced
 - Upper lid edema reduced
 - Conjunctival congestion reduced
 - Chemosis reduced
 - Extraocular movements improved



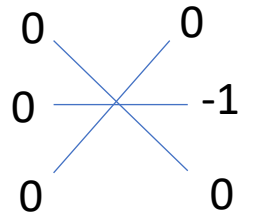
Pre operative

- Visual acuity – 6/24 ph 6/12p
- Extraocular movements – all ocular movements restricted.
- Axial proptosis (26mm), upper lid edema and incomplete lid closure.
- Conjunctival congestion and chemosis with mild periorbital oedema.



Post operative day 15

- Visual acuity – RE – 6/6
- Extraocular movements – mild restriction of adduction
- Amount of proptosis (20mm), periorbital edema and lid edema reduced
- Mild congestion of conjunctiva
- Chemosis reduced.



Discussion

- Orbital mucormycosis is an aggressive angio-invasive fungal disease of the orbit.
- Most common fungal genera - Mucor and Rhizopus.
- Main route of infection - inhalation of sporangiospores- begins in the sinuses and erodes into the orbital cavity.
- Organisms have a tendency to invade vessels and cause ischemic necrosis causing black eschar.
- Necrotizing reaction destroys muscles, bone and soft tissues, and orbital involvement.
- Initiation of full-dose liposomal Amphotericin B
- Early Identification of indications for paranasal sinus surgery and orbital exenteration.
- Meticulous post-surgical management, may help optimize the outcome of ROCM in the setting of COVID-19.



Conclusion:

- **Awareness** and attention to warning symptoms and signs and high index of clinical suspicion.
- **Early** diagnosis and treatment.
- Inculcating a protocol-based strategy by a multidisciplinary team and a **prioritized Code-Mucor approach** is the key to success.

