

CHRONIC INVASIVE FUNGAL RHINOSINUSITIS PRESENTING SOLELY WITH LEFT SIDED FACIAL NUMBNESS

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Introduction

➤ With the increase in number of immunocompromised patients, there has been an increase in unusual manifestations of aggressive fungal infections like invasive rhinosinusitis. Patients are often older, only mildly immunocompromised, and have a history of recent nasal/sinus interventions or intranasal cocaine use.

Presentation

- ❖ Chronic rhinosinusitis for months
- ❖ Visual changes from orbital involvement
- ❖ Neurological complaints due to brain and CN involvement
- ❖ Physical examination may reveal tenderness over the maxillary sinuses, erythema overlying the malar areas, proptosis or fixation of the globe

Microbiology: Aspergillus spp and brown-black molds are more common causes, not the Mucorales

Case

A 61-year-old construction worker with past medical history of type 2 Diabetes Mellitus, Essential hypertension presented initially in the ENT clinic with five-months of left-sided facial numbness (left alar to the infraorbital region to the left side of his lip) and tingling inside his left nasal cavity. Symptoms started two weeks after septoplasty for correction of deviated nasal septum. Patient did not have any features of chronic rhinosinusitis. Of note, his HBA1C five months before and one month after the procedure was 9.9 and 13.6, respectively. Lab work did not show evidence of hematological disorders.

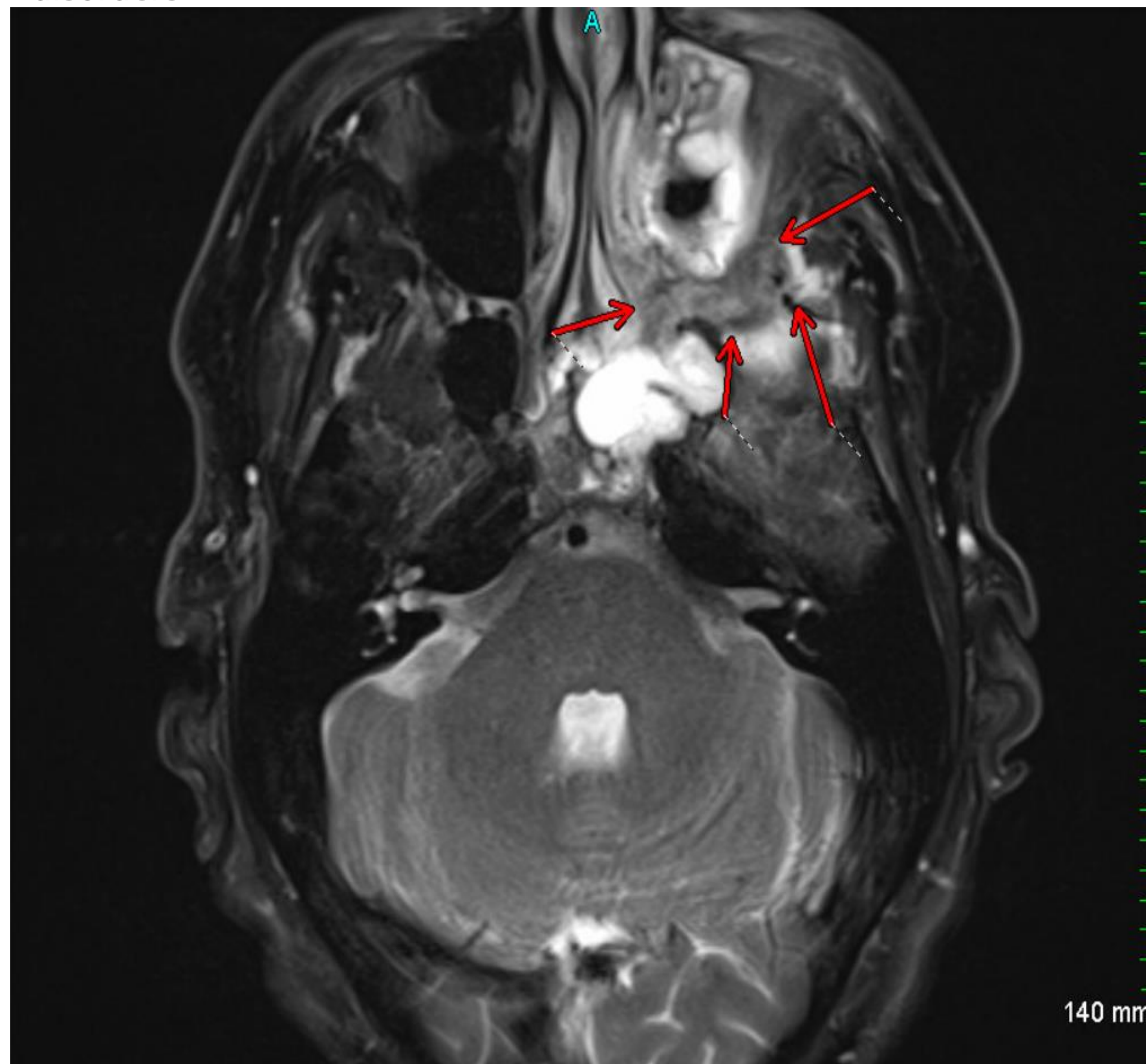


Fig 1. MRI brain and face before treatment

Imaging & Surgical pathology

MRI brain and face (Fig 1.)

- Expansile mass at the left pterygopalatine fossa with extension into the pterygoid muscle/masticator space
- Thickening of V2 and V3, concerning for malignancy.

CT angiogram of head and neck

- polypoidal mucosal thickening of the left maxillary and sphenoid sinus without hyper vascularity to suggest malignancy.

Imaging may show

- ❖ Involvement of a single paranasal sinus with a mass lesion and thickening of the mucosa.
- ❖ Bony erosions in invasive disease are most likely to be seen by CT

Endonasal resection and surgical biopsy

- Granulomatous inflammation with fungal elements consistent with Mucorales.

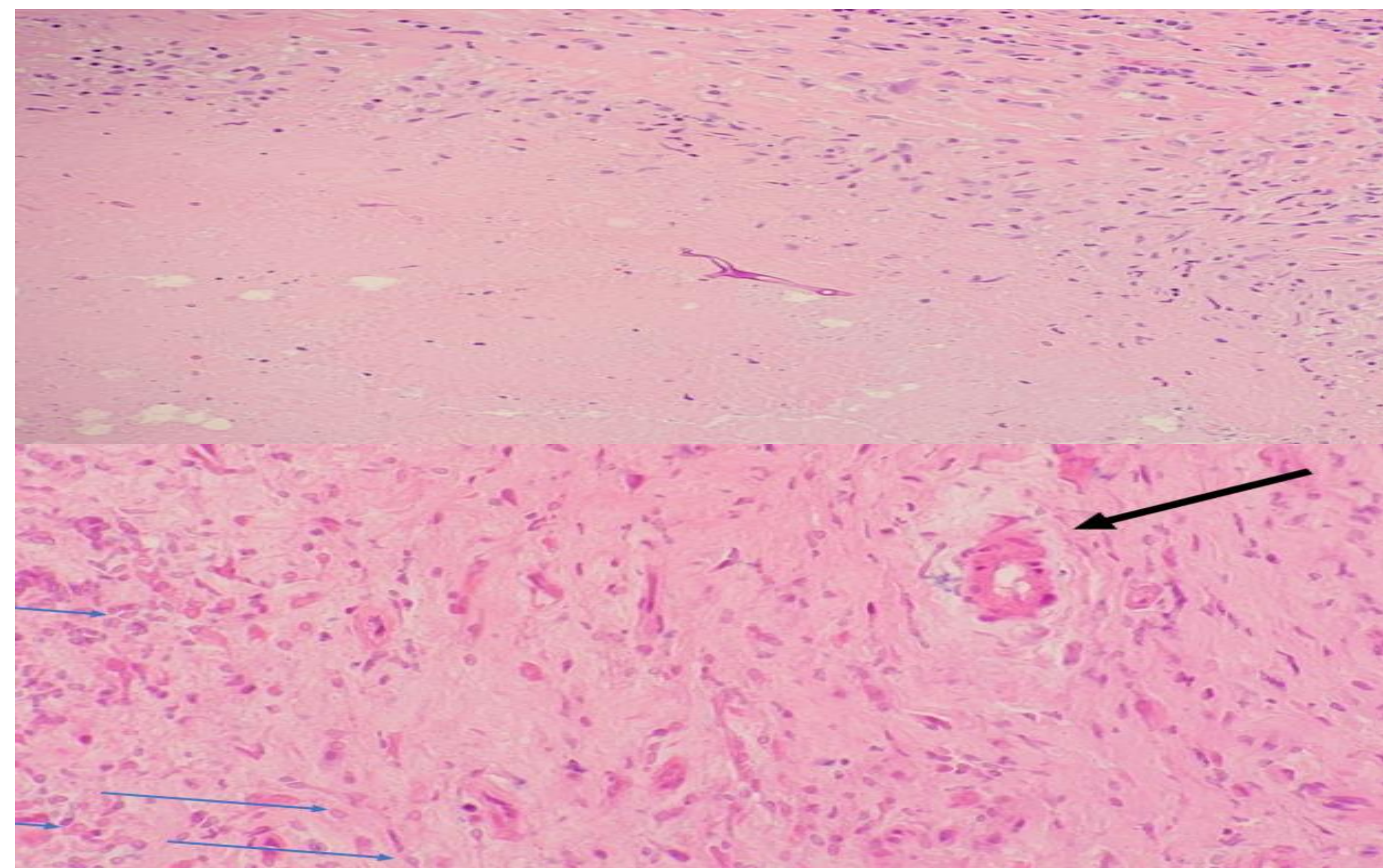


Fig 2. Histopathologic demonstration of septate hyphae of Mucorales

Treatment and hospital course

Patient was admitted to the hospital for IV antifungals. He was treated with Lipid formulation of Amphotericin B (5 mg/kg per day) for 4 weeks followed Posaconazole.

Hospital stay complicated by development of acute kidney injury. Sensation of the left side of the face began to improve with initiation of antifungals.

Initial therapy

- Liposomal Amphotericin B: Duration depends on underlying immune status of the host, extent of surgical debridement and the response to therapy
- Then suppressive therapy with oral antifungal: Posaconazole or Isavuconazole

- ❖ Invasive rhinosinusitis is a very difficult infection to cure as most affected patients are immunocompromised.
- ❖ Role of hyperbaric therapy or iron chelation is uncertain

Discussion

Recently, diabetes mellitus/hyperglycemia has become a common risk factor for acute/chronic invasive fungal sinus infections. Patients with suspected fungal sinusitis should get

- ❖ Early nasal endoscopy with biopsies of the affected tissue. Ample tissue should be obtained, including tissues from viable areas to detect vascular invasion and morphology of the fungus.
- ❖ Biopsy specimens should be evaluated intraoperatively to assure sufficient diagnostic tissue is obtained.
- ❖ Histopathologic findings from the surgical specimen can guide initial treatment until culture results return.
- ❖ Cultures are usually positive but can have false negative result due to fastidious nature of Mucorales.

Follow up and prognosis

- Patient was treated with oral Posaconazole for 6 months, symptoms improved
- Follow MRI of the brain and face (Fig 3)
 - Extent of enhancing tissue is similar but nodular components have slight decreased in size with improvement of hard palate/maxillary alveolus enhancement.
 - Marked polypoid mucosal thickening of the left maxillary sinus and ethmoid air cells, progressed from before

Overall survival is poor, and long-term survivors may have significant sinonasal complications, especially when there is intracranial involvement and cranial neuropathies at presentation.

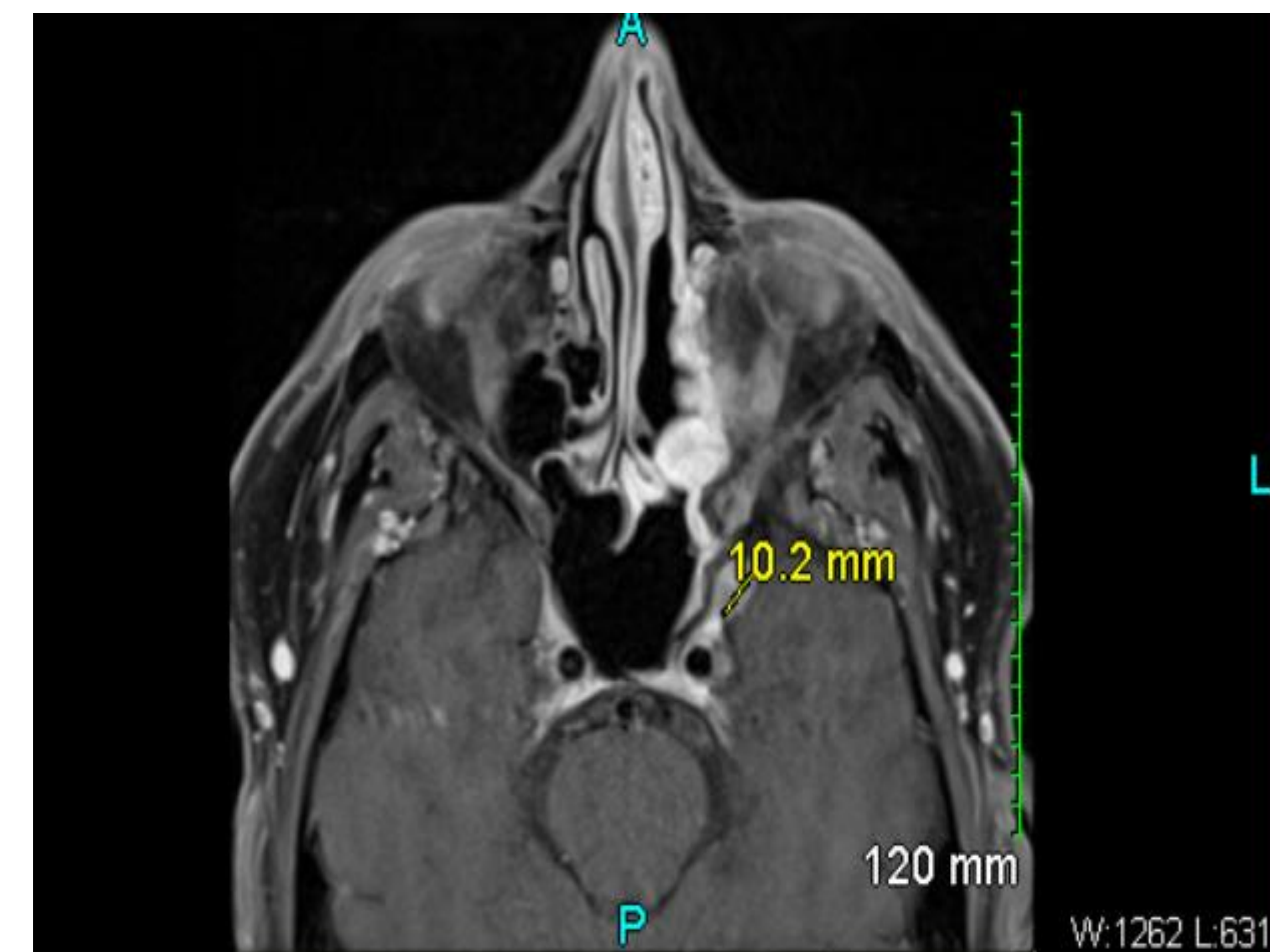


Fig 3. MRI of brain and face after treatment

References

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