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AFRS IN A TERTIARY CARE HOSPITAL: OUR EXPERIENCE

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ABSTRACT

Introduction: The incidence of acute fungal rhinosinusitis has dramatically increased after Covid pandemic. Extensive use of steroids in Covid-19 management, associated diabetes mallitus or comorbidities can also suppress immunity of the patient thus allowing opportunistic fungal infections to colonise. Mucor, Rhizopus and Absidia are the main types of fungal infection affecting nose, paranasal sinuses, orbits or brain leading to life threatening outcomes or morbidities. **Materials and methods:** A Retrospective study of 53 patients with suspected invasive fungal infection who presented to the ENT department, were included and evaluated clinically, radiologically, and endoscopically. Tissue samples from suspected sites were taken for KOH mounting and microscopy for confirmation of fungus. **Result:** A total of 53 patients were included. Out of 53 patients 75.47% were male with average of 50 Years. Total 34 patients were in covid positive status. Major symptoms were Facial, orbital, nasal and Intracranial. Main risk factors for disease were DM, oxygen and steroid therapy and comorbidities. Total 79.25% were found positive for fungus on direct microscopy after KOH mounting. **Conclusion:** In our study maximum patients presented with combined ENT, Orbital & Neurological manifestations. Diabetes was most common co-morbidity found in almost all patients. Uncontrolled diabetes and over-zealous use of steroids are the main factors found to be aggravating the illness. Early and proper diagnosis, required surgical interventions and anti-fungal treatment should be sought for management.

KEYWORDS

Covid 19, Acute invasive fungal sinusitis, Steroid.

INTRODUCTION:

Fungal rhinosinusitis has become a common entity after COVID pandemic which is more frequently seen in diabetes.Members of aspergillus and mucorales are most frequently causative agents. Diagnosis is based on clinical features, endoscopic and radiological findings.Isolation of fungal hyphae and identification of fungus microscopically is supposed to be the goal standard for confirmation. Complete evaluation by clinical, radiological, endoscopic and pathological assessmentis necessary for the management and treatment of the patients.

MATERIAL AND METHOD:

The study was done retrospectively for a period of 6 month which included 53 patients, who attendedENT department with ARFS symptoms in tertiary care centre in Central India.All patients included in the study were thoroughly examined clinically,radiologically (MRI/CECT) and by nasal endoscopy. Confirmation was done by KOH(20%) mounting and microscopy after taking tissue samples from suspected sites by endoscopy.

RESULTS:

The mean age of presentation was 50 years with male preponderance (75.47%).At the time of presentation total 34 patients were in COVID positive state. Total 40 patients were not vaccinated while 12 patients took only first dose of vaccinationfor Covid. Major Ophthalmic symptoms were blurred vision(52.3%), proptosis+ptosis (43.9%)anddiplopia (3.7%). Total 86.79% patients had facial pain and 73.58% had facial swelling. Main nasal symptoms were nasal blockade (60.38%) and discharge (18.87%).Few patients (9.43%) had palatal discoloration and tooth loosening (7.5%).Major risk factor for disease was found to be diabetes which was present in 83.01% of cases, 30.1% had history of oxygen +/-steroid therapy for covid treatment.

Radiologically 43.3% had nasal cavity+ sinuses + orbital involvement while 37.7% had only nasal cavity +sinuses involvement and 18.8% had extensive fungal involvement. KOH mounting for fungal hyphae was positive in 42 (79.25%) cases.

DISCUSSION:

Age and sex distribution:

In our study we found the mean affected age was 50 years with male preponderance 75.47%. Elmorsy Set al (2017) also found same results in 22 patients having mean age of 14 - 45 years with male:female2:1. Ravindra P et al (2019) studied 12 cases, in which they found average age of 14 - 45 years.

Symptomatology:

In our study major symptoms were facial (86.7%) followed by nasal (60.38%) and orbital (43.39%). Pratik Set al (2013) found nasal symptomsas main complaint (100%) in all casesfollowed by headache (17.43%) and facial pain (57.14%).

Risk factors:

In present study the main responsible factor for disease occurrencewas diabetes (83.1%) followed by steroid and oxygen therapy (30.1%) majorly.RodriguesLCBet al (2022) reported diabetes in 27.1%, hypertension in 25.17% and DM withhypertension in 19.8% cases.Piromchai P et al(2013) found 80% diabetes and 17.14% hypertension associated with AFRS.

KOH microscopy:

In present study 42% patients found to be positive for KOH and microscopy. Singh AK et al (2019) found 22% positivity by KOH mounting.

CONCLUSION:

AFRS being very common nowadays after COVID pandemic, especially with comorbid conditions, it is of utmost importance to identify and diagnose the disease in early stage.Early and accurate diagnosis helps in better management and prevents lethal outcomes and morbidities.Clinical, radiological, endoscopic and microscopic evaluation not only confirms the diagnosis but also helps in management of the disease more accurately.

Fig-1 Clinical features of acute invasive fungal rhinosinusitis

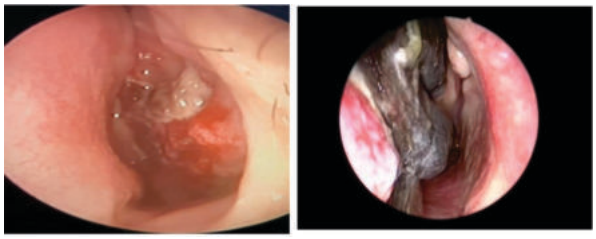

Fig.-2 Endoscopic pictures of acute invasive fungal rhinosinusitis

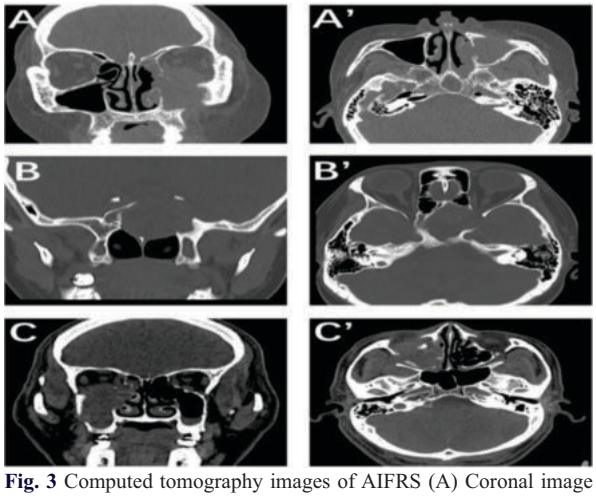

Fig. 3 Computed tomography images of AIFRS (A) Coronal image showed significant swelling of the left cheek, bone absorption and destruction involving the left orbital inferior wall with intraorbital invasion (A') Axial image depicted maxillary and sphenoid opacification with bone erosion of anterior and medial wall of maxillary sinus (B) Coronal image revealed sphenoid sinus swelling and destruction of sinus bone wall (B') Axial view showed optical left nerve canal wall erosion and temporal lobe involvement (C) Coronal scanning exhibited bone destruction around the wall of right maxillary sinus with intraorbital invasion (C') Axial image showed right pterygopalatine and infratemporal fossae fat pad obliteration.

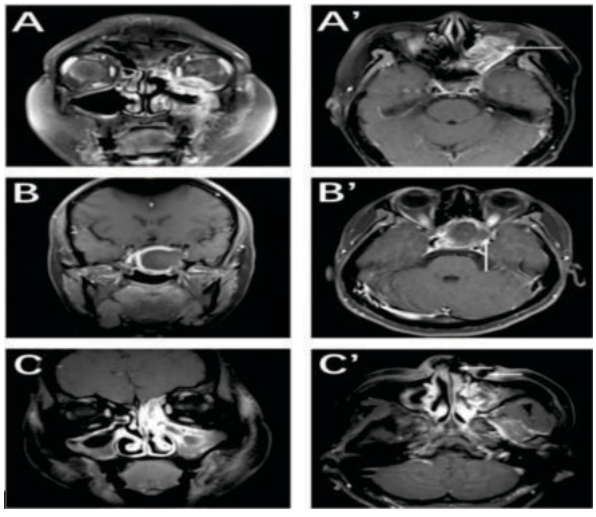

Fig. 4. Magnetic resonance imaging of AIFRS (A) Coronal T1-weighted contrast enhanced image showed orbital extension, and preseptal cellulitis, thickened mucosa of the left frontal, ethmoid and maxillary sinus. The left maxillary sinus ostium was enlarged (A') Axial image demonstrated area of loss of contrast enhancement (LoCE) involving the left orbit(white arrow), as well as swelling and diffuse enhancement of inferior rectus muscle enhancement and optic nerve sheath (B) The sphenoid sinus expansion and invasion of the left temporal lobe of the brain were displayed in the coronal image (B') A lesion of LoCE was closely related to the left optic canal from axial view (white arrow) (C) Coronal image showed mucosal thickening of left ethmoid and maxillary sinuses (C') Axial view showed swelling of left nose and face, areas of LoCE were observed in left anterior nasal septum and subcutaneous tissue of facial skin (white arrows).

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