



Case Study

AYURVEDIC MANAGEMENT OF RHINO-ORBITO-CEREBRAL MUCORMYCOSIS IN POST COVID-19 PATIENT: A SINGLE CASE STUDY

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Article info

Article History:

Received: 29-01-2022

Revised: 11-02-2022

Accepted: 25-02-2022

KEYWORDS:

Rhino-Orbito-Cerebral Mucormycosis, Black fungus, *Raktaja Pratishyaya* and *Krimija Shiroroga*.

ABSTRACT

A severe and rare fungal illness, Mucormycosis also known as black fungus affecting some corona virus patient. It occurs in people with diabetes, hypertension, reduced immunity and immune-compromised state. Various pharmacological interventions are used for this treatment but little efficacy and its prognosis is also poor. Certain *Panchakarma* procedures and internal Ayurvedic medicines have been proved to be beneficial in the management of fungal sinusitis. A 79 year old male patient with complaints of sinusitis, facial and eye pain, generalized muscular pain especially over the nape of neck, right arm, and right leg, discoloration of skin, nasal congestion came to *Panchakarma* OPD in university college of Ayurveda, Rajasthan Ayurveda University Campus Jodhpur for treatment. The present report deals with a case of Rhino Orbito cerebral Mucormycosis managed by *Panchakarma* treatment along with internal medicines. The Ayurvedic diagnoses of *Raktaja Pratishyaya* and *Krimija Shiroroga* were made, and *Panchakarma* treatments such as *Kavala/Gandusha* (gargling), *Nasya* (nasal medication), *Dhumapana* and *Karnapurana* were performed, followed by internal medicines for 30 days. *Nasyakarma* is especially desired for diseases of the parts above the base of the neck (above the clavicle). This treatment method was found effective in controlling the progressive symptoms and improving the functional ability of the patient.

INTRODUCTION

Mucormycosis also known as black fungus is systemic fungal infection caused by members of the class zygomycetes order mucorales. It is more severe in people with diabetes, hypertension, immune-compromised state etc. Depending on the part of the body affected it is classified mainly into five types. Rhino-Orbito-Cerebral Mucormycosis are similar to *Raktaja Pratishyaya*^[1,2,3] and *Krimija Shiroroga*^[4,5] (unilateral facial swelling, headaches, nasal congestion, nasal discharge, fever etc). Second one is pulmonary mucormycosis, it is very much similar to *Kshayaja Kasa*, (cough with pericardial chest pain, foul smelling, greenish, purulent, mucoid and blood stained/hemoptysis sputum and cough associated

with fever (*Jvaro-mishrakriti*) or chest pain (*Parshvaruka*) or recurrent coryza (*Pinasa*) are the clinical features found in Pulmonary Mucormycosis. Third one is gastrointestinal mucormycosis can be included under the spectrum of *Udara roga* especially *Sannipatika udara roga* and pathogenesis of last one Disseminated mucormycosis in later phase can be compared with *Dushtavrana* whereas Cutaneous mucormycosis can be correlated with *Kushtha* and *Visarpa*.^[6] In modern system of medicines antifungal therapy are the first choices of treatment. Breaking the cycle of infection, boosting an individual's immune system, detecting the infection early, and providing proper medical care are the best ways to avoid Mucormycosis. The Ayurvedic principle of management includes *Kledahara*, *Pramehahara*, *Agnivardhaka*, *Aampachaka*, *Krimihara*, *Ojovardhaka*, *Rasayan* and *Balya chikitsa*. On the basis of the factors involved in the *Samprapti* dominated with severe facial pain. *Kavala/Gandusha*, *Nasya*, Steam inhalation and *Dhumapana* are effective in relieving the pain and other associated symptoms.

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Quick Response Code



<https://doi.org/10.47070/ijapr.v10i2.2286>

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Case Study

Center of study: Center of Excellence in Panchakarma & OPD of Panchakarma Department, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurveda University, Jodhpur, Rajasthan, India.

Case report: A 79-year-old male patient resident of Jodhpur (Rajasthan) visited the department of Panchakarma Dr. S R Rajasthan Ayurveda University Jodhpur on 17/06/2021. OPD number 32846 with complaint of

1. Sinusitis
2. Pain in face and eyes
3. Muscular pain (Generalized)
4. Discoloration of skin (necrosis)

Personal History: Personal history of patient is mentioned in table number 1.

Table 1: Personal history of Patient

Diet	Vegetarian
Micturition	7-8 times in a day, 2-4 times in night
Bowel	Regular
Appetite	Moderate
Sleep	Disturbed
Addiction	Nil

Ashtavidha Pareeksha: Ashtavidha Pariksha (eight fold classifications) has been mentioned in Table No.2

Table 2: Ashtavidha Pariksha of Patient

1. <i>Nadi</i> (Pulse)	70 /Min	5. <i>Shabda</i> (Speech)	<i>Spashta</i> (Normal)
2. <i>Mutra</i> (Urine)	7-8 times in a day, 2-4 times in night	6. <i>Sparsha</i> (Touch)	<i>Rukshata</i>
3. <i>Mala</i> (Stool)	1-2 times per day	7. <i>Drik</i> (Eyes)	<i>Samanya</i> (Normal)
4. <i>Jihva</i> (Tongue)	<i>Sama</i> (Coated)	8. <i>Akriti</i> (Built)	<i>Madhyama</i>

Laboratory Investigation**Urine Examination**

- Appearance- Pale Yellow Turbid
- PH: 8.5
- Specific Gravity: 1.019
- Protein: +++

Microscopy

- Epithelial Cells- Occasional
- Pus Cells- 4-5/hpf
- RBCs:- 22-24/hpf
- Numerous bacterial colonies

Blood Investigation

- HGB- 10.9 Gm/dl
- RBC- 3.75[10⁶/ul]
- WBC- 9.31[10³/ul]

Microbiology

[Biopsy/ Tissue Specimen KOH Mount For Fungal Element]

1. Sample site: Left inferior turbinate
 - a) Occasional broad aseptate, hyalineribbon like right angled branching fungal hyphae seen. S/o Mucormycosis.
2. Sample site: Left Middle turbinatemucosa
 - Few broad, hyaline aseptate hyphae with right angled branching seen. S/o Mucormycosis

5. Nasal congestion

History of Present Illness: The patient was Covid positive on 17/06/2021 and after 27 days he performed test and found negative, after some days gradually developed all these problems for which he was taking allopathic treatment and admitted in ventilator AIIMS Jodhpur. On examination of patient, vital parameters were within normal limits. He was a non-smoker, non-alcoholic, and not having an allergy to any drug or food item.

History of Previous Illness: There was nothing specific in past history.

Family History: No one in the family has ever had such a disease.

3. Sample site: Left middle meatus

- a) Occasional broad pauciseptate, hyalineribbon like right angled branching fungal hyphae seen.
S/o Mucormycosis.

CT Brain with Contrast

CT findings suggestive of Left maxillary, ethmoid and frontal sinusitis with extension into left orbit, minimal extension into left retro-antral space and pterygopalatine fossae s/o acute invasive fungal sinusitis.

Treatment is given to the patient

S. No.	Name of the medicine	Dose	Anupana	Time
1	<i>Sitopaladi Churna</i> 1gm + <i>Godanthi Bhasma</i> 250mg + <i>Mukta Shukthi</i> 250mg+ <i>Akikapishti</i> 250mg + <i>Muktapanchamruta</i> 250mg+ <i>Shubhra bhasma</i> 150mg <i>Laksmi vilas rasa</i> ¼	5-10 gm	Lukewarm water	6AM & 6 PM
2	<i>Kaisora guggulu</i>	1	Lukewarm water	6AM & 6 PM
	<i>Giloyghanavati</i>	1	Lukewarm water	6AM & 6 PM
	<i>Triphala Guggulu</i>	1	Lukewarm water	6AM & 6 PM
	Syrup Septillin	½ teaspoon	Lukewarm water	6AM & 6 PM
3	<i>Avipathikara churna</i> 2gm+ <i>Bala churna</i> ½gm + <i>Shatavri churna</i> 1gm+ <i>Gokshuradi churna</i> 1gm	5-10gm	Lukewarm water	7AM & 7PM (30 Minutes before food)
	<i>Aroghyavardhini vati</i>	1	Lukewarm water	7AM & 7PM (30 Minutes before food)
	<i>Chandraprabhavati</i>	1	Lukewarm water	7AM & 7PM (30 Minutes before food)
	Tab Liv 52	1	Lukewarm water	8.AM & 8PM (30 Minutes after food)
	Tab Shuktin	1	Lukewarm water	8.AM & 8PM (30 Minutes after food)
	<i>Narayana churna</i>	1 teaspoon	Lukewarm water	Sleeping time
	<i>Sudarshana Ghana vati</i>	1	Lukewarm milk	Sleeping time

Panchakarma therapy

S.No	Procedure	Drugs	Duration	Any Complication
1	<i>Nasyam</i>	<i>Anutailam</i>	7 Days	Nil
2	<i>Dhupanam</i>	<i>Haridradi Varti</i>	7 Days	Nil
3	<i>Karnapooranam</i>	<i>Vilwadi Tailam</i>	7 Days	Nil
4	<i>Aschotanam</i>	<i>Netrasudarshana arka</i>	7 Days	Nil

RESULTS

After the 15th and 30th days of assessments, variations in results were found on each symptom associated with mucormycosis. The patient got relief in signs and symptoms with gradual improvements. Assessment of each considering symptom of mucormycosis have been presented in Table No.3.

Table 3: Symptoms of Mucormycosis

Signs and Symptoms	1 st Day (BT)	15 th Day(A.T)	30 th Day(A.T)
Sinusitis	+++	++	-
Pain in face and eyes	+++	++	-
Muscular pain (Generalized)	+++	++	-
Discolouration of skin (necrosis)	+++	+++	+
Nasal congestion	+++	++	-

DISCUSSION

Aim of the treatment protocol is to control the progressive symptoms and improve the functional ability of the patient. Here we selected *Shamana aushadies* along with *Panchakarma* therapy which help to eliminate the vitiated *Dosha* from the body. *Nasya*, *Dhupana*, *Karnapoorana*, *Aschotana* with suitable medicine are found very effective in this condition, Remarkable improvement was noticed in patient condition.

CONCLUSION

Rhino-Orbito-Cerebral Mucormycosis are similar to *Raktaja Pratishyaya* and *Krimija Shiroroga* have better result in *Shamana aushadies* along with *Panchakarma* therapy over period of 30 days. There is no adverse reaction, complication or side effects recorded during the entire treatment period and it improve patient quality of life.

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Cite this article as:

Arun NK, Sarita Devi, Mahesh Kumar Sharma, Gyan Prakash Sharma. Ayurvedic Management of Rhino-Orbito-Cerebral Mucormycosis in Post Covid-19 Patient: A Single Case Study. International Journal of Ayurveda and Pharma Research. 2022;10(2):33-36.

<https://doi.org/10.47070/ijapr.v10i2.2286>

Source of support: Nil, Conflict of interest: None Declared

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