**P182**

**Mucormycosis in Northwest Iranian cases with a history of delta COVID-19, a brief report**

Kambiz Diba[1], Reza Samarei[2], Rahim Nejadrahim[3], Atefeh Namaki[4]

[1]School of Medicine, Urmia University of Medical Sciences, Urmia, Iran
[2]Khomeini Training Hospital, Urmia University of Medical sciences, Urmia, Iran
[3]Taleqani Training Hospital, Urmia University of Medical sciences, Urmia, Iran
[4]Arefian General Hospital, Urmia, Iran

Poster session 2, September 22, 2022, 12:30 PM - 1:30 PM

Objectives: *Mucoral* fungi are the opportunistic organisms causing invasive or localized infections in persons with conditions such as diabetes mellitus, immune suppression, and corticosteroid therapy. During the recent surge of delta-type Coronavirus disease 2019 (COVID-19) in Iran, the rate of invasive mucormycosis considerably increased as a cluster in society. COVID-19-associated mucormycosis (CAM) immerged as a severe and life-threatening infection. The present report includes demographic, clinical and laboratory diagnostic information about newly emerged CAM in Northwest of Iran.

Methods: During three months, from August to October 2021, about 65 cases with clinical manifests suspected of mucormycosis and a history of recent severe COVID-19 and corticosteroid therapy with dexamethasone were studied. Clinical specimens obtained from sinuses and upper respiratory tract, transported to Clinical Mycology Center, UMS University, Urmia, Iran for the detection of and molecular identifications of *mucoral* and other agents. Our subjects were the clinical specimens including 31 nasal biopsies, 24 paranasal sinus biopsies, 2 facial and palate biopsies, skin and sutures, one each. Also, two samples of bronco-alveolar lavage were used for investigating fungi in the respiratory tract.

Results: More than 52% of the patients were men and the most frequent age range was 50-60 years. Most frequent clinical specimens were sent from ENT wards and ICUs, 22 (33.8%) and 12 (18.5%) respectively. Among all confirmed cases of CAM, 18 (27.7%) suffered from a background of diabetes but 46 (70.8%) had no underlying diseases. Our findings of direct examination showed 55 (84.6%) *mucoral* elements. The suspected cases of CAM showed clinical manifests including acute sinusitis, rhino-sino-cerebral 25 (38.5%), rhino-sino-orbital 7 (10.8%), and sino-facial 3 (4.6%), involvements. The culture and identification resulted in *Rhizopus oryzae* as the most frequent isolate (44.6%) and *Candida* yeasts (albicans and non-albicans *Candida* species) 6.2%-7.7% respectively. *Aspergillus* species were detected 5 (7.7%) as well. A considerable number of cultures, 20 (30.8%) could result no growth for any fungi.

Conclusion: As a conclusion, delta-type Coronavirus causing a considerable increased invasive Mucormycosis in the recorded COVID-19 cases in the north west of Iran. Although, opportunistic *candida* and *aspergillus* were identified in lower frequencies as well.

| Code | Clinical Specimen | Reference | Predisposing Factor | Clinical Manifest | Direct Examination | Culture Identification |
|---|---|---|---|---|---|---|
| 2441 | Nasal | ICU | Diabetes Melitus | Sinusitis | Mucoral | *R. oryzae* |
| 2152 | Nasal | ICU | None | Sinusitis | Mucoral | *R. oryzae* |
| 2152 | Nasal | ENT | None | Necrosis | Filamentous | *A. flavus* |
| 2162 | BAL | Pulmonology | TB | Infiltration | Yeast | *C. albicans* |
| 2163 | Sinus | Nephrology | Kidney Graft | Sinusitis | Mucoral | *R. oryzae* |
| 2166 | Nasal | Nephrology | Diabetes Mellitus | RSCerebral* | Mucoral | *R. oryzae* |
| 2167 | Nasal | Neurology | None | RSCerebral | Mucoral | *R. oryzae* |
| 2172 | Nasal | Neurology | None | RSCerebral | Mucoral-Yst | *C. albicans* |
| 2175 | Nasal | Neurology | None | RSCerebral | Mucoral | *R. oryzae* |
| 2176 | Nasal | ENT | Diabetes Mellitus | RSOrbital** | Mucoral | *R. oryzae* |
| 2177 | Nasal | Neurology | None | RSCerebral | Mucoral | *R. oryzae* |
| 2178 | Nasal | Pulmonology | None | RSOrbital | Mucoral | *R. oryzae* |
| 2183 | Nasal | Pulmonology | None | RSCerebral | Mucoral-Yst | *Non alb Candida* |
| 2184 | Nasal | Neurosurgery | None | RSCerebral | Mucoral | *R. oryzae* |
| 2185 | Nasal | Neurosurgery | None | RSCerebral | Mucoral | *R. oryzae* |
| 2189 | Nasal | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2193 | Nasal | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2198 | Nasal | Neurosurgery | None | RSCerebral | Mucoral | *R. oryzae* |
| 2203 | Nasal | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2209 | Nasal | ENT | None | Sinusitis | Filamentous | *A. flavus* |
| 2213 | Palate | Surgery | None | NOral | Yeast | *Non alb Candida* |
| 2215 | Sinus | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2228 | Sinus | Neurosurgery | None | RSCerebral | Mucoral | *R. oryzae* |
| 2229 | Facial | ENT | Diabetes Mellitus | SFacial | Mucoral | *R. oryzae* |
| 2242 | Sinus | ICU | None | Sinusitis | Mucoral | *R. oryzae* |
| 2243 | BAL | Pulmonology | None | Dyspnea | Yeast | *C. albicans* |
| 2244 | Sinus | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2247 | Sinus | Neurosurgery | Diabetes Mellitus | RSCerebral | Mucoral | *R. oryzae* |
| 2251 | Sinus | ICU | None | Sinusitis | Mucoral | *R. oryzae* |
| 2253 | Sinus | ENT | Diabetes | Sino-Orbit | Mucoral | *R. oryzae* |
| 2264 | Nasal | Pulmonology | None | Sinusitis | Mucoral | *R. oryzae* |
| 2266 | Sputum | ICU | None | Dyspnea | Yeast | *C. albicans* |
| 2267 | Sinus | Pulmonology | None | Sinusitis | Filamentous | *A. flavus* |
| 2274 | Nasal | Neurosurgery | None | Sinusitis | Mucoral | *A. niger* |
| 2277 | Nasal | ICU | Diabetes Mellitus | Sinusitis | Mucoral | *R. oryzae* |
| 2283 | Sinus | ENT | None | Sinusitis | Mucoral | *Non alb Candida* |
| 2292 | Sinusitis | Neurosurgery | None | SFacial | Mucoral | *R. oryzae* |
| 2294 | Sinus | ENT | None | Sinusitis | Yeast | *Non alb Candida* |
| 2304 | Nasal | Neurosurgery | None | RFacial*** | Mucoral | *R. oryzae* |
| 2306 | Sinus | ICU | None | Sinusitis | Yeast | *Non alb Cand* |
| 2319 | Nasal | ENT | None | Sinusitis | Mucoral | *R. oryzae* |
| 2320 | Sinus | ENT | None | Sinusitis | Mucoral | *No groth* |
| 2322 | Skin | Infectious | None | Ulcer | Mucoral | *R. oryzae* |