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A Case of Subcutaneous Mucormycosis with Stridor, Case Report and Review Literature

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Introduction

Mucormycosis represent a group of life threatening infection caused by fungi of the order mucorales of the subphylum mucoromycotina. [6, 7] The agents of mucormycosis are ubiquitous in nature. They may be isolated from air, soil, fruits, clinical materials, human orifices. Incidence of mucormycosis has increased in recent years.[4,10] Subcutaneous mucormycosis is the third most common clinical variety of mucormycosis.[12] Subcutaneous mucormycosis result from external implantation of the pathogens or by haematogenous dissemination.[18] External implantation may be from soil or dust exposure from trauma, penetrating injury from plant material, catheter insertion, injections of medication and by contaminated dressings.[20] Cutaneous disease can be highly invasive penetrating into subcutaneous tissue, fascia, and muscle and even up to bone. In mucormycosis necrotizing fasciitis has mortality rate nearly above 85%. [1] However with early diagnosis and proper treatment mortality can be reduced.

Case Report

A 60 years female patient housemaid by occupation residence of Bhopal reported with complaint of nodular swelling over anterior chest wall which was initially noticed to have approximate size of $3\times3\times3cm^3$ and was gradually increasing in nature for last two and half months. Swelling was hard in consistency non movable, fixed to underlying tissue, nonfluctuating, non tender, without any discharge from it and gradually increasing and spread over whole anterior chest wall, right side of neck and right shoulder. Overlying skin was initially red then became dark brown to black. Patient also had complaint of low grade fever with chills since 2 months insidious in onset and relieved on medication/antipyretics. Patient also had complaint of cough with expectoration last 4 to 5 days, expectorant was whitish mucoid and scanty in amount not blood stained. Patient also had complaint of difficulty in breathing and audible stridor in inspiration and choking or compression like sensation in throat since 5 to 6 days. Patient did not complain of headache, nausea, vomiting, nasal discharge, red eyes, and no history of swelling or ulcer at any other site of body. Patient had no history of diabetes, hypertension, and any intake of steroid or iron tablets (to rule out iron overload).

There was no history suggestive of any malignancy, pulmonary tuberculosis, and recurrent infections in past. Patient had undergone

vaginal Hysterectomy for complain of Dysfunctional Uterine Bleeding 10 years back. Patient did not take alcohol or tobacco in form of smoking or chewing.

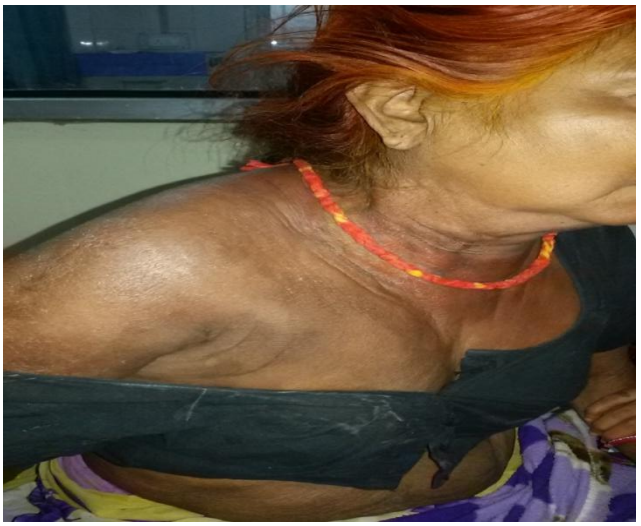
On general examination there was no significant observation made. On local examination there was firm to hard swelling all over anterior chest wall which was extending to right upper arm and right side of neck along sternocleidomastoid muscle up to mandible. On systemic examination, no clinical abnormality detected. There was no abnormality in nose, throat and ear noted on ENT Surgical consultation

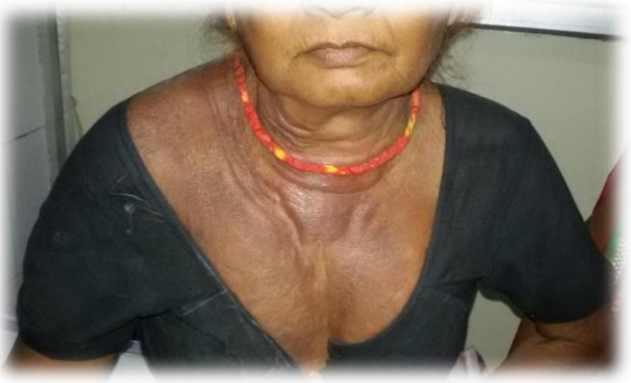
On initial investigation Hemoglobin was 11.6 g/dl total WBCS was 18,100/cumm with neutrophillia toxic granules, RBCS show normocytic hypochromic with mild anisopoikilocytosis, thrombocytosis (platelets count 7 lakh/cumm), and no parasite was seen. Biochemical investigations (RFT, LFT, URIN microscopy, fasting blood sugar, HbA1C) were also within normal limits.

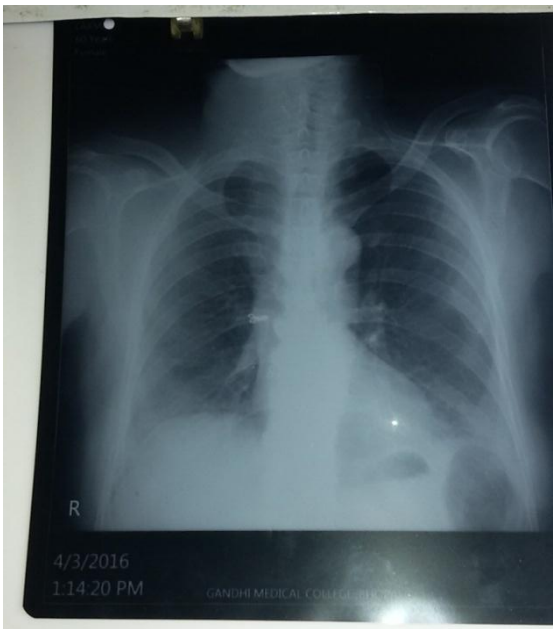
Blood and sputum culture were sterile. HIV, HBsAg, HCV were non reactive.

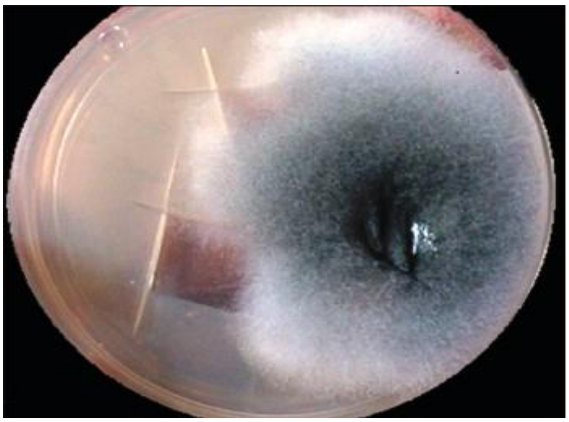
Chest x ray and USG abdomen was normal, CT chest was suggestive of subcutaneous uniform swelling on anterior chest wall without muscle, fascia and bony involment. Lung parenchyma and mediastenum were normal. True cut biopsy of chest wall swelling, on H&E stain showed fibro-cartillagenous and adipose tissue infiltrated by nonspecific inflammatory cells comprising of lymphocytes, several eosinophills, few polymorphs and foreign body giant cell (?fungal granulomatous lesion) was reported. Special staining with Silver Methanamine stain showed, 'Hyphae having irregularly placed branches, thick ribbon like, and have constriction around their septa' suggestive of mucormycosis.

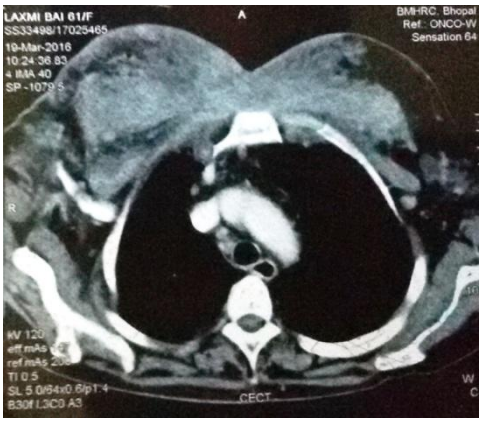
Patient was treated with four weeks i/v Amphotericin B deoxycholate (1mg/kg/day), i/v antibiotics and steroid dexamethasone, with symptomatic treatment was given. Pus aspiration by wide bore needle and compressive bandaging was done for 2 weeks. After four weeks patient was discharged on oral TAB ITRACONAZOLE 200mg BD and continued for next four weeks.

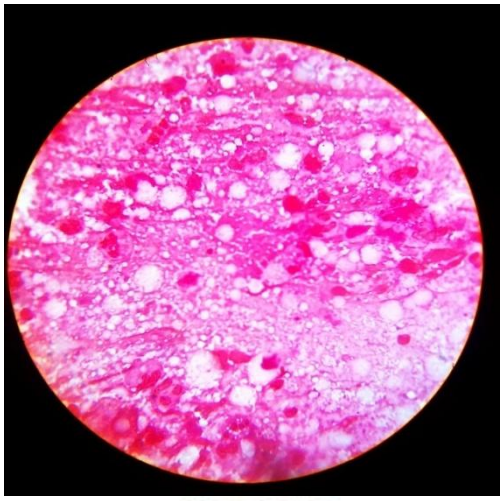


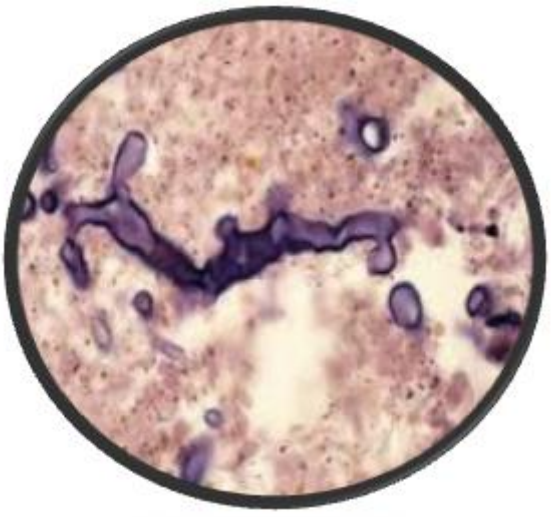












Discussion

Mucormycosis, a fungal infection is rare infection although mucorales are ubiquitous organisms.[5] Fungi of order mucorales have seven medically important families of which Mucoraceae species genus Rhizopus oryzae is most common cause of infection.[8] Other families' fungi as Lichtei-miacae, Cunninghamellacae, Thamnidiacae, Mortierellacae, Saksenacae and Syncephalastracae are also found.[7] They may have some geographical prevalence. First case of mucormycosis according to RIPPON was reported by PALTAUF in 1885.[3] Mucormycosis is seen in at least six clinical form as 1) Rhino-orbital-cerebral Disease (39%), 2) pulmonary disease (24%), 3) coetaneous disease (19%) 4) gastrointestinal disease, 5) disseminated, 6) miscellaneous form.[8] High risk persons are diabetic patient with decreased phagocytic function, patient with neutropenia, patient on steroid therapy or any immunosuppressive therapy, patient with solid organ transplantation or stem cell transplantation or having any malignancy.[2,9,16] It is seen that iron overloaded persons as in CKD patient or patient on deferoxamine are at risk of rapidly progressive and fatal disseminated mucormycosis.[15] DKA patient has greater risk of development of rhinoorbital cebral mucormycosis.[2] Traumatic infiltration or nasocomial invasion is most commonly observed route of subcutaneous mucormycosis. Main theme of management in this infection is correct diagnosis of mucormycosis which is possible by prompt clinical suspicion and confirm by histopathological and microbiological examination, second is stopping or managing all risk factor present for mucormycosis , third is, immediate start antifungal antibiotics (i/v AMPB) and forth is surgical intervention if needed.[22] In this case close differential diagnosis are other fungal in infection as Aspergillosis, Scedosporiosis, Fusariosis, Dematiaceaous, Entomophthoromyceses.[21] All these fungi cab have similar clinical manifestation but differentiated by culture method. Other bacterial

infection such as Staphacoccus areus, Streptococcus, Klebsiella rhinoscleromatis should also be ruled out by blood culture method and antibiotic response. [20] In our case patient has no history any risk factor for mucormycosis as mention above. Her investigations such as blood culture, sputum culture were negative for bacterial infection. By clinical feature there was strong susceptibility for fungal infection and malignancy. This was confirmed by biopsy of lesion and microbiological culture and was come to be a fungal infection mucorales. [14]

Conclusion

In our case patient did not have any risk factor for fungal infection but strong clinical suspicion and appropriate diagnostic methods lead to correct diagnosis of disease and proper treatment was given.

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