

## Mucor Mycosis Induced Anterior Mediastinal Abscess With Chest Wall Invasion- A Case Report.

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**Abstract:** Mediastinal abscesses are mostly seen following thoracic surgical procedures. Isolated and primary spontaneous abscess in the mediastinum by fungal organisms is an extremely rare condition. We report an interesting case of mucormycosis causing anterior mediastinal abscess with invasion of adjacent rib, sternum and anterior chest wall

**Key Words;** mediastinum- abscess- mucormycosis

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### I. Introduction

Mediastinal infection usually occur following surgery or trauma to thoracic structures and rarely seen as extension of oropharyngeal or neck surgery. The symptoms are mostly non specific. Spontaneous mediastinitis is extremely rare. In descending necrotizing mediastinitis the infection extends into the pre tracheal space, pre vascular space into thorax from retropharyngeal abscess, pharyngitis, deep cervical infection. Rarely pancreatitis and invasion by lung tumors can result in mediastinitis.

### II. Case Report

A 59 year old male presented with chest pain , dry cough, fever of 15 days duration. The pain was localized to retro and left parasternal region. The cough was dry and there was no haemoptysis. There was no history of tuberculosis ,chest trauma, no breathlessness , palpitation . Appetite was normal. No pat history of hypertension, COPD , bronchial asthma .He was recently diagnosed with diabetes mellitus since 15 days with very blood sugar levels and high HbA1C level. On clinical examination there was localized swelling over the upper part of sternum and left parasternal area with associated tenderness Respiratory system was normal. He was a smoker and alcoholic since 25 years. His fasting blood sugar was 207mg/dL, and post prandial 259mg/dL. WBC, RBC, platelets, ESR were within normal limits. Serum creatinine was 0.7 mg . Glycosylated Hb HbA1C was 12.7 % . Hb 10.8 gms. Chest radiograph showed non homogenous left hilar opacity. MDCT chest revealed the presence of a well defined area of fluid collection containing small air pockets in the left prevascular space causing minimal effacement of mediastinal fat. The lesion extended anteriorly into the parasternal space. There was significant osseous erosion of adjacent anterior end of left third rib and partial erosion of sternum. Rest of the lung parenchyma normal. There was no mediastinal lymphadenopathy, plural effusion. A provisional diagnosis of mediastinal abscess extending into chest wall and invading sternum and third rib on left side was made. ultrasound guided aspiration from the 3- 4th intercostal space was done. H& E stained smears showed plenty of neutrophils with degenerative changes, a few discrete and small clusters of epithelioid cells and macrophages. Focal smear also showed acidophilic broad fungal hyphae with 90 degree branching.PAS stain showed highly stained fungal hyphae , features consistent with mucormycosis. Fungal culture was positive for mucormycosis with heavy growth. Patient was started on intravenous amphotericin deoxycholate for 2 weeks and was advised to continue IV amphotericin for another 4 weeks. The patient showed clinical improvement on follow up.

### III. Discussion

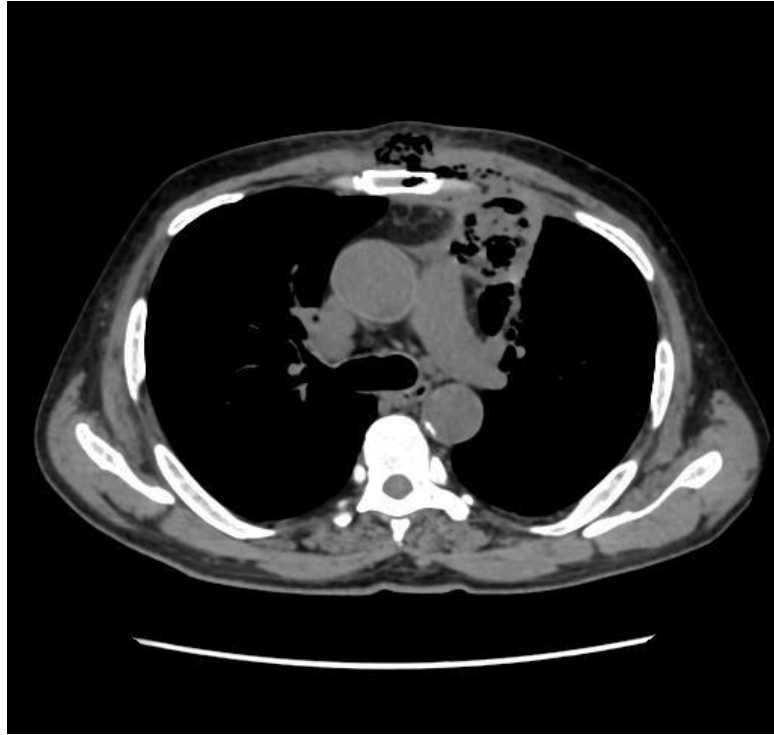
The clinical presentation of mediastinal abscess is mostly non specific. However it is a rare and life threatening condition if not treated in time. Acute mediastinitis usually develops following cardiothoracic surgery or rupture of esophagus, extension of infection from lungs, neck or plural space 1 . CT scan is the most important investigation in the diagnosis of this condition. The diagnostic criteria for a mediastinal abscess on CT include well defined fluid collection, soft tissue infiltration of mediastinal fat, presence of air bubbles within the collection. There are sporadic cases of isolated mediastinal abscess being reported in literature. Sandeep Kumar and others 2 reported a case of mediastinal abscess in a 5 year old child developed following disseminated staphylococcal infection in left axilla and right thigh. A case of isolated antero superior mediastinal abscess without any primary location of infection was reported by Vasileios and others 3 in a 32 year old male patient. Some times mediastinal abscess can present as mediastinal mass on clinico radiological evaluation 4. Maya Abu- Gazala 5 case of mediastinal mass due to Nocardia infection in an immunocompetent patient which is commonly seen as an opportunistic infection in a immuno compromised host. A case of invasive mucormycosis presented as a mediastinal mass with superior vena cava obstruction syndrome was also reported in a 30 year old immunocompetent male 6. Mucormycosis is a rare and serious fungal infection caused by mucormycetes. They occur most frequently in patients with immunocompromised status, diabetes mellitus, hematological malignancies, solid organ transplantation, AIDS etc. Rhino-orbital-cerebral mucormycosis is the most common clinical presentation of mucormycosis. Lung involvement is in the form of pneumonia , pulmonary infarction and can spread to adjacent mediastinal structures or show hematogenous dissemination. In the present case the disease started as isolated mediastinal abscess that had invaded the chest wall. There was no preceding pulmonary disease which is very unusual. The patient also showed no evidence of disseminated infection anywhere in the body. On histopathological confirmation , specific treatment for mucormycosis was given and the patient showed significant improvement. The main method of confirmation of the diagnosis is by identifying the organism by histopathology. The treatment of mucormycosis is by surgical debriment of the tissues involved and antifungal therapy. Amphotericin B followed by Posaconazole, isovuconazole are the most important drugs of choice in this condition. Conclusion: Intrathoracic infection with chest wall invasion is a very serious condition and mucormycosis should be considered as a causative organism so that early diagnosis and specific treatment can be initiated .

### References

- [1]. *Alvaro Huete-Garin, Stuart S.Sagel* in Mediastinum : computed body tomography with MRI correlation ,4<sup>th</sup> edition Lippincott Williams & Wilkins New York 2006 p 311-417.
- [2]. Sandeep kumar ,Virendra Kumar, Amit Bishnoi,Rajiv Chadha Non –traumatic anterior mediastinal abscess in childhood *J Indian Assoc Pediatr Surg* . 2011 apr-jun ; 16(2): 75-77
- [3]. Vasileios K .Kouritas,Charalambos Zissis and Ion Bellenis Staphalococcal isolated anterosuperior mediastinal abscess of unknown origin *Interactive Cardiovascular and Thoracic Surgery* 14 ( 2012 ) 650-651
- [4]. Lokesh Kumar Saini, Nishant Kumar Chauhan , Ravi Panwar , Naveen Dutt, Sonal Saran, Surya Kant and Pramod Kumar Sharma Primary isolated mediastinal abscess masquerading as mediastinal mass: a needle did the trick *Betham science* vol 13 issue 2 p 119-122( 4)
- [5]. Maya Abu- Gazala , Ahuva Engel , Anat Stern and Ludmila Guralnik An unusal case of Nocardiosis presented as a mediastinal mass in an immunocompetent patient *American J of Respiratory and Critical care medicine* vol 189 no 4 feb 2014.
- [6]. Pradeep kumar vyas ,Gaurav Ghatavat, Rajiv S.Mathur and Bharatshivdasani Mediastinal Zygomycosis (Mucormycosis): an unusual manifestation of invasive Zygomycosis(Mucormycosis) , presenting as a mediastinal mass in an immunocompetent adult male *J Pulm Respir Med* 2014 vol4 issue 4 p 1-4



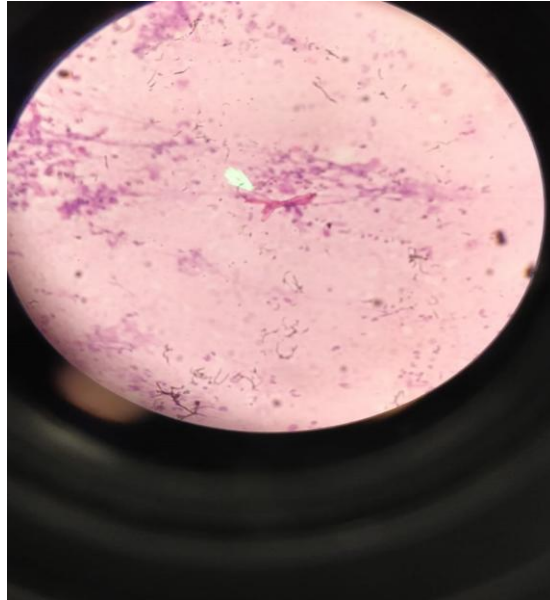
**Fig 1)**



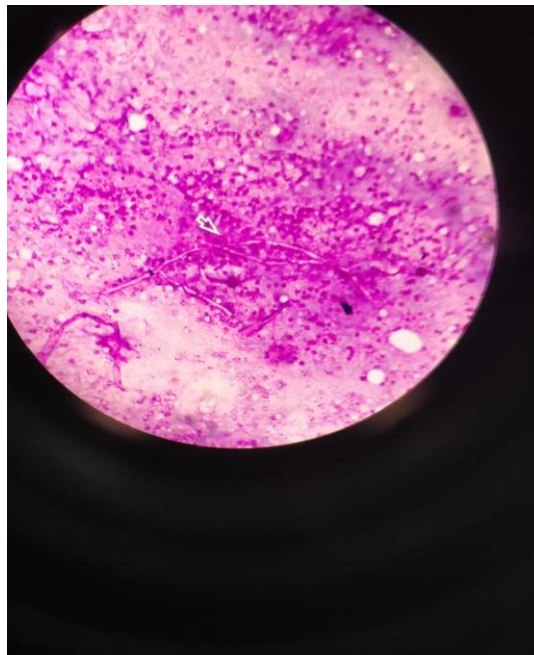
**Fig 2 A)**



**Fig 2 B)**



**Fig 3 A)**



**Fig 3 B)**

**LEGENDS:**

Fig 1) chest radiograph showing left hilar opacity

Fig 2 A& B) MDCT chest show anterior mediastinal abscess with infiltrating into sternum and rib and invasion of chest wall.

Fig 3 .A) H & E smear showing branching hyphae of mucormycosis

B) PAS stain smear showing negatively stained hyphae of mucormycosis with branching

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