



A CASE OF BRONCHIAL PERFORATION WITH ACUTE MEDIASTITIS : POST RENAL TRANSPLANT PATIENT

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ABSTRACT Acute mediastinitis (AM) is a rare but life-threatening disease. Here, we report a case of AM secondary to endobronchial tuberculosis (EBTB) which was confirmed by histopathological and GeneXpert MTB/RIF (Cepheid, Sunnyvale, CA, USA) reports. Even with antibiotic treatment and systemic support treatment, the patient died of septic shock on day 7 after admission. When immunocompromised hosts have AM, especially with central airway involvement, EBTB should be considered potential causes. Bronchoscopy is helpful for rapid diagnosis and administering precise treatment.

KEYWORDS : Flexible Bronchoscopy , Acute Mediastinitis , Endobronchial TB

INTRODUCTION

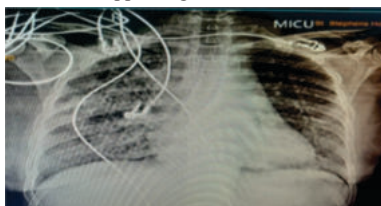
Acute mediastinitis (AM) is a rare but life-threatening disease with a mortality rate of up to 80%.(1).Solid Organ transplant patients are more prone to pulmonary complications. Bronchoscopy is frequently required to establish a definitive diagnosis in these patients.

Case Report

We report a case of 39 year old female , homemaker ; with no co morbidities ; post renal transplant patient secondary to bilateral renal vein thrombosis done in 2014 for which she is currently on immunosuppression with Tab Tacrolimus , Tab wysolone , Tab MMF . She presented to the casualty with chief complaints of high grade fever since 10 days which was acute in onset , maximum recorded as 103.4 f , ass with chills but no rigor or evening rise . She also had non productive cough since 4 days and 2 episodes of vomiting since 1 day which was non bloody and non projectile . Patient was conscious , cooperative , oriented to time place and person with vitals BP= 90/60 mm Hg , PR= 112/min,Spo2 = 95 % on o2 support via nasal prongs @ 2l/min , Temp= 98.6 f . Systemic examination including CVS , CNS , P/A was essentially normal and Bilateral vesicular breath sounds with Right infraaxillary crepts on chest examination.

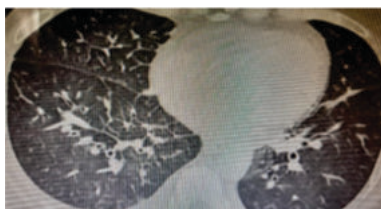
APPROACH :

Patient was admitted with the above complaints to the ward . Routine investigations including cultures were sent . Patient was initiated on empirical antibiotic Piperacillin – Tazobactam . Her initial Chest X ray showed inhomogeneous opacities in the Right Middle and lower lobe with almost normal appearing left side .



Her CBC reports were within normal limits including TLC , LFT with mild drop in Hb .

Her serial KFT monitoring shows rising Serum creatine and serum potassium for which haemodialysis was done for the patient on 09/07/23 .



CT Chest was done to confirm the findings of chest Xray which showed smooth interlobular septal thickening suggestive of pulmonary edema and parahilar consolidatory changes with surrounding ground glass opacities



Until then , other routine investigation reports came which were as follows :

Inflammatory Markers

LDH	407
D Dimer	6125
Procalcitonin	5.57
CRP	17.36
ESR	70

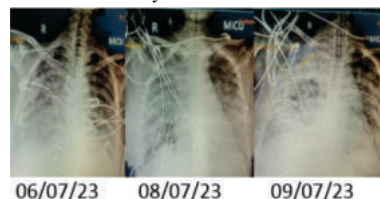
Sepsis Screen

Urine R/M , Malaria card , WIDAL , serum Typhi IgM , HHH were within normal limits .

Anaemia Profile

S.FERRITIN	332
RETICULOCYTE COUNT	0.6%
VITAMIN B12	540
SERUM FOLATE	24
STOOL OCCULT BLOOD	negative

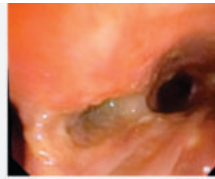
Since the patient inflammatory markers were so high , we were eagerly waiting for the culture reports but all of them (sputum , Blood , Urine) were sterile and failed to yield any organism . However the patient was showing clinical worsening with non resolving high grade fever and persistent hypotension .Also the patient was showing radiological worsening in terms of increase in opacities over bilateral lung fields as shown by her serial Chest Xray .



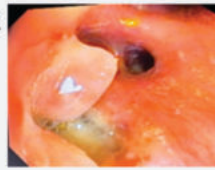
We also did a bedside 2D Echo for ruling out any cardiac cause of these opacities however it was within normal limits .

Therefore we decided to do Flexible Bronchoscopy after informed consent and 1 unit PRBC transfusion which revealed surprising findings of:

- Perforation in right main bronchus 1 cm away from carina filled with thick pus sealing the perforation : BAL taken .

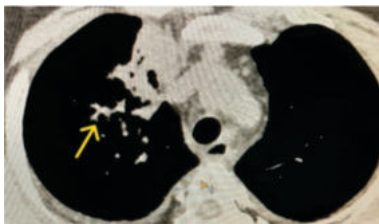


- RUL anterior segment showed pseudotumour like growth : Biopsy sample taken .



- Left bronchus showed similar though smaller perforation.

In view of clinical worsening and surprising bronchoscopic findings , Ct films were reconstructed after discussing with the radiologist . The findings finally gave us a clue to the diagnosis which showed Air in the mediastinum , Loss of fat tissue planes and fat stranding .

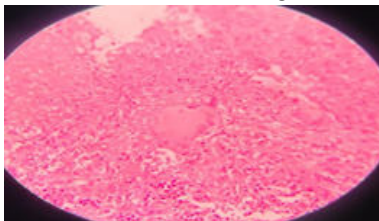


And a diagnosis of ACUTE MEDIASTITIS secondary to bronchial perforation was made but still the cause of Bronchial perforation was unknown .

The cause of tracheobronchial perforation could be traumatic or spontaneous . Traumatic is more common and can be iatrogenic , esophageal rupture , foreign body , intubation which was ruled out in our case . Since the acute mediastinitis has a very fatal course and poor prognosis , we decided to upgrade the antibiotic to Meropenem and Polymixin B after discussing with the nephrologist. Also the fungal cover was added (Liposomal Amphotericin B and Voriconazole) empirically since cases of spontaneous tracheobronchial perforations are reported of aspergillus species . But still the patient clinical and radiological condition was not improving . Then the reports of Biopsy and Bal came which showed

BAL : Streptococcus pneumonia (Multidrug sensitive) and MTB , Rif sensitive on Gene Xpert .

BIOPSY : Necrotising granulomatous inflammation bordered by epithelioid cells and occasional multinucleate giant cells



Since both BAL and Biopsy findings were suggestive of TB , ATT (HRZE) was initiated and the antifungals were stopped . Patient was planned for tracheobronchial stenting and CTVS consultation was also done for surgical repair however patient condition deteriorated and she succumbed to her illness.

DISCUSSION

AM is rare and associated with a high mortality if not treated in a timely manner(3). CT findings are very important for recognizing AM, including increased attenuation of mediastinal fat, localized mediastinal fluid, free gas bubbles in the mediastinum, mediastinal lymph node enlargement, pleural and/or pericardial effusion and lung infiltrate.(4) Tracheal or Bronchial perforation is a rare event and usually secondary to other causes such as intubation , blunt trauma, foreign body inhalation or local tumour invasion.

Spontaneous perforation is more rarer event and is found in immunosuppressed patients generally caused by Aspergillus and mucor species. The management of Bronchial perforation remains primarily surgical repair ; a stent is used either in the palliative setting or as a bridge to definitive surgical procedure.(2)

CONCLUSION

Routine Bronchoscopy should be performed in Solid organ transplant patients with non resolving/ recurrent pneumonia to effectively diagnose tracheobronchial perforations which can be missed radiologically. Rapid confirmation of pathogen is crucial in AM. BAL and Biopsy remains the mainstay of diagnostic confirmation . Apart from surgical methods , methods like tracheobronchial stenting or patch placement which can be done in resource limited settings should be explored and encouraged so as to limit the spread of infection . When Acute mediastinitis occurs in immunocompromised host , especially with central airway involvement endobronchial TB should be considered.

Conflict Of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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