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AN INTERESTING CASE OF EMPYEMA THORACIS - EXCLUSION OF LUNG PATHOLOGIES AND ROLE OF TISSUE SAMPLING

Surgery

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ABSTRACT

A 40yr old female came with chief complaints of shortness of breath and left sided chest pain since 25 days. She had similar complaints 6monthsback, where thoracentesis was done with ICD and relieved .History of increase in dyspnoea since 20days and again planned for ICD where there was a DRYTAP. On examination and necessary investigations, it was found to be LEFT LOCULATED PLEURAL EFFUSION/EMPYEMA.Left posterolateral thoracotomy and decortication was planned under general anaesthesia. Pus was sent to culture & sensitivity. Intra pleural contents along with visceral and parietal pleura were sent to HPE, where it was diagnosed as MUCINOUS ADENOCARCINOMA WITH TUBULOPAPILLARY PATTERN .Post operatively patient was stable and referred to oncology department for further management

KEYWORDS

empyema thoracis, pleural effusion, adenocarcinoma lung

INTRODUCTION :

EMPYEMA is presence of gross pus in pleural cavity it consists of effusion containing polymorpho-nuclear leukocytes and fibrin . Pleural empyema or thoracic empyema-purulent pleural effusion or effusion with positive bacteriology.It is not a primary disease ,its secondary to underlying diseases due to complication of other diseases.

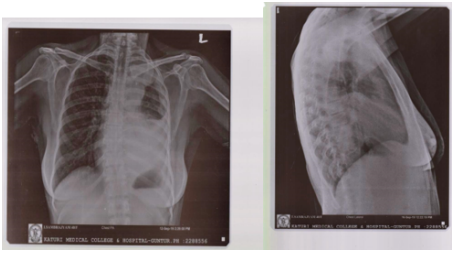
CASE PRESENTATION

A 40yr old female, farmer by occupation presented with chief complaints of shortness of breath since 25days and left sided chest pain since 25days.History of fever episodes(low grade) and dry cough was present. History of similar complaints 6months back ,where thoracentesis done with ICD, serous fluid drained at another hospital and relieved. History of increase in dyspnoea since 20days and planned for ICD placement where there was a DRYTAP. On examination, there was dull note and decreased breath sounds at left mammary ,axillary ,infra scapular and interscapular areas .At our hospital she was evaluated and Left posterolateral thoracotomy and decortication was planned under general anaesthesia, where MUCINOUS ADENOCARCINOMA WITH TUBULOPAPILLARY PATTERN was diagnosed.

INVESTIGATIONS :

In Routine blood investigations there was neutrophilia .Chest X-ray PA view (fig-1)was showing blunting of costophrenic angles with homogenous opacification at middle and lower lobes .HRCT(fig-2)showing Moderate amount of free fluid noted in left pleural cavity predominately in apical and lower basal regions with collapse of underlying lung suggestive of left loculated pleural effusion and Patchy area of consolidation noted in left lower lobe .HRUS found to have MODERATE AMOUNT OF fluid with thick internal septations noted in left pleural cavity.

Chest X-ray Pa View Chest X-ray Left Lateral(Fig-1)



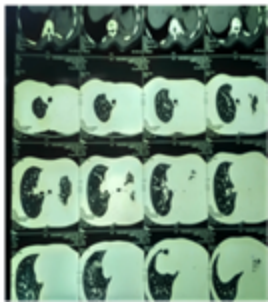


Fig- 2 HRCT Chest

SURGICAL PROCEDURE :

Thoracotomy and decortication under general anaesthesia was planned, approach in lateral position with left side up an incision at 5 intercostal space posterolateral given, serratus anterior divided, pleural cavity breached ,an amount of 400 ml of frank pus suctioned and both parietal and visceral thickened pleural membranes(fig-4) along with intrapleural contents were removed scompletely ,decortication done completely, haemostasis secured ,two intercostal drains kept anterior and posterior, closure done layer wise.(fig-3)

Fig-3

Fig-4

HPE Report :

Parietal & visceral pleura & Intra pleural contents : multiple sections from the above pleura tissue bits show histological picture of mucinous adenocarcinoma with extensive tumour necrosis, and pleomorphic tumour cells in form of tubules and papillae with mucinous pools focal areas show tumour cells in solid form admixed with hyalinised fibrinoid material ,suggestive of mucino Adenocarcinoma with tubulo papillary pattern(fig-5)

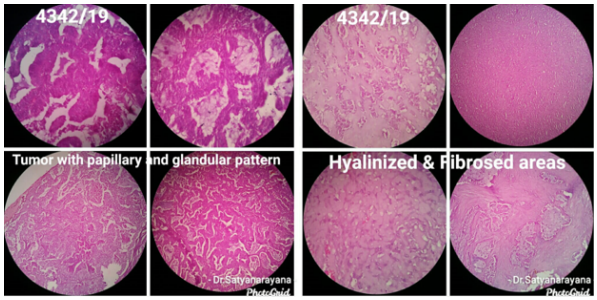


Fig-5

DISCUSSION :

Any pleural effusion associated with bacterial pneumonia, lung abscess, or bronchiectasis is a parapneumonic effusion (30) . Weese et al. (32) defined an empyema as pleural fluid with a specific gravity greater than 1 . 018 , a WBC count greater than 500 cells/mm3, or a protein level greater than 2 . 5 g/dL.

PATHOPHYSIOLOGICAL FEATURES :

The evolution o f a parapneumonic pleural effusion can be divided into three stages(34) . First is the **exudative stage**, characterized by the rapid outpouring of sterile pleural fluid into the pleural space .If appropriate antibiotic therapy is not instituted ,bacteria invade the pleural fluid from the contiguous pneumonic process, and the second, **fibro purulent stage** evolves. This stage is characterized by the accumulation of large amounts of pleural fluid with many polymorphonuclear leukocytes, bacteria, and cellular debris .As this stage progresses, there is a tendency toward **loculation a**nd the formation of limiting membranes .The last stage is the **organization stage,** in which fibroblasts grow into the exudate from both the visceral and parietal pleural surfaces and produce an inelastic membrane called the **pleural peel.**

RADIOLOGICAL FEATURES :

US has a higher sensitivity and specificity for detecting pleural fluid as compared with standard radiographs .Echogenic pleural fluid and septations suggest the presence of a complicated parapneumonic effusion in the fibrinopurulent or organizing stage and thereby increasing the likelihood that drainage will be required .**Contrast-enhanced chest CT** can establish the presence, location, and extent of parapneumonic effusions for patients with complex pleural fluid collections and uncertain radiographic and USG findings. Loculated empyema with interlobar and para mediastinal fluid collections can only be imaged by chest CT. Characteristic CT findings include the "split pleura sign" (enhanced pleurae that surround a loculated effusion), pleural thickening, and increased attenuation of extra pleural subcostal fat

TREATMENT :

ANTIBIOTICS : Administered empirically /according to C/S of pleural fluid.Anti staph antibiotic + cephalosporin + Aminoglycoside .Suspected anaerobic –clindamycin.Parenteral therapy should be continued for 48-72 hr after abatement of fever and then oral therapy used to complete the course.

EMPYEMA DRAINAGE : Indications for drainage-frank pus ,smear positive fluids, loculated fluid.Pleural fluid –PH<7.10 , glucose<40 mg/dl,LDH >1000 IU/L.CT /USG guided drainage if empyema collection is small/ loculated . Chest tube drainage is advised for drainage of TB Empyema .Chest tube must be kept inside till drainage is <30-50 ml per day and cavity size is < 50 ml in size.

Surgical intervention should be considered EARLY after failure of first chest tube drainage in symptomatic patients.

FIBRINOLYTIC THERAPY: Useful in multilocular empyema .it degrades fibrin ,blood clots, and pleural loculi in pleural space leading to hydrolysis of fibrin coagulum.Streptokinase;25000 U in 20-50 ml saline x OD for 3 days=66% efficacy

VATS : Can be done as primary procedure. Thoracoscopic debridement and irrigation ,it is quite effective in cases with multiloculated empyema, Success rate –high 69%-89%,but in experienced hands .Most effective if performed within 48-72 hrs of fibrinolytic therapy.

THORACOTOMY AND DECORTICATION : Indicated in organised stage of empyema with pleural thickening. Treatment of choice in stage III and most commonly done procedure. Mortality reduced. Haemorrhage , prolonged air leak and residual empyema are some complications of decortication.

CONCLUSION :

Empyema thoracis is usually primary and secondary in most of cases, so always ruled out the pathology /malignancy too apart from pleural pathologies, one have to look for lung pathologies too by taking consideration, the adenocarcinoma lung peripherally located and symptoms occur once invasion to chest wall and pleural seeding with malignant pleural effusion.

Histology reveals the final diagnosis, surgery is mainstay of treatment.

REFERENCES

1) FISHMAN'S PULMONARY DISEASES AND DISORDERS.
2) JOHN HOPKINS TEXTBOOK OF CARDIOTHORACIC SURGERY.