



RHEUMATOID PLEURAL EFFUSION WITH TRAPPED LUNG: A CASE REPORT

Rheumatology

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ABSTRACT

Pleural disease is common in patients with long standing RA and it is more common in men and coexist with Rheumatoid nodules and ILD in unto 30% of patients. Very rarely RPE has a feature of exudative pleural effusion with high lipids, high LDH and very low glucose and very rarely present with circumferential effusion leading on to trapped lung, here we report a 36 yr obese man with 5 yr h/o RA, chronic smoker, non diabetic, non hypertensive, occasional drinker who present with left sided chest pain and exertional shortness of breath. Search for the cause of chest pain and exertional dyspnea revealed him to be having circumferential exudative pleural effusion with high lipids, high LDH and very low glucose content. HE was treated with chest tube insertion and drainage of fluid.

KEYWORDS

Rheumatoid arthritis, Rheumatoid pleural effusion, trapped lung, thoracostomy, Alteplase

CASE REPORT

A 36-year-old man presented to the emergency department with a 1-day history of left sided chest pain and shortness of breath. Past history includes RA diagnosed 5 yr ago on MTx and adalimumab which he left taking 3 yrs ago. patient was chronic smoker, non diabetic, non hypertensive, occasional drinker.

On examination, patient was afebrile, diaphoretic, in mild respiratory distress, BP 126/72 mm of Hg, PR 113/min, RR 20/min. He had multiple rheumatoid nodules distributed along elbows, knee and foot. Abdominal and CVS examination did not revealed anything and nervous system examination was normal.

Investigation revealed Hb 17 mg/dl, HCT 49.8, quantiferon gold test negative, CRP 32.3, CCP > 340, RA factor 672.3, blood culture negative. CXR show Loculated left pleural effusion and left lung airspace opacities (FIG1). CT ANGIOGRAM CHEST WITHOUT AND WITH CONTRAST shows No definite thrombus embolus, multiple bilateral lung nodules, Large circumferential left-sided pleural effusion, atelectasis and possible consolidation at the left base and Mediastinal and bilateral axillary lymphadenopathy. Pleural fluid analysis shows WBC 15972 (G 89%, L 4%), RBC 3696, GLUCOSE < 20, PROTEIN 5.4, LDH 2849, AMYLASE < 30, CHOLESTROL 94, PH 6.96 and Cytology showed neutrophils, lymphocytes and RBC and It was negative for any evidence of malignancy.

In view of clinical examination and laboratory findings, diagnosis of RA with circumferential pleural effusion is made. The patient was treated with chest tube insertion with alteplase, antibiotics and steroids.

FIG1: CXR showing loculated pleural effusion



DISCUSSION

Rheumatoid arthritis is a systemic inflammatory disorder that most commonly affects the joints, causing progressive, symmetric, erosive destruction of cartilage and bone, which is usually associated with

autoantibody production. Although joint disease is the main presentation, there are a number of extra-articular manifestations including subcutaneous nodule formation, vasculitis, inflammatory eye disease and lung disease. Of these manifestations, lung disease is a major contributor to morbidity and mortality. There are a variety of pulmonary manifestations of rheumatoid arthritis, including pulmonary parenchymal disease (interstitial lung disease (ILD)) and inflammation of the pleura (pleural thickening and effusions), airways and pulmonary vasculature (vasculitis and pulmonary hypertension) 1.

AN association between rheumatoid arthritis and pleural effusion has been recognized for many years, but only in 1960 were the extremely low glucose values of the effusions pointed out as characteristic of rheumatoid pleurisy. 1 Glucose levels below 20 mg. per 100 ml. in rheumatic pleural fluids are common and, in pleural fluids free of bacteria and acid-fast bacilli, are almost diagnostic of rheumatoid disease 2.

Rarely, RPE has features of a sterile empyematous exudate with high lipids and lactate dehydrogenase, and very low glucose and pH levels. This type of effusion eventually leads to fibrothorax and lung restriction 3.

Progressive nodular and pleural lung disease associated with RA represents a particular clinical challenge. The nodules are often multiple and involve both lungs, varying in size from a few millimeters to several centimeters. A propensity for the lung peripheries and fissures with an ability to become necrotic and rupture results in complications such as recurrent secondary pneumothorax, bronchopleural fistula formation with sizeable air leak, hemorrhage, pulmonary abscess formation, and empyema. The inflammation, fibrous visceral peel formation (with trapped lung) and noncompliant parenchyma associated with rheumatoid lung mean achieving key clinical objectives such as closure of the air leak, obliteration of the pleural space, eradication of infection, and effective pleurodesis may prove impossible 4.

Surgical thoracostomy tube placement and radiologically guided catheter drainage are standard therapy for loculated pleural fluid collections. Treatment may fail if the catheter is not placed optimally within the loculation or if the fluid is hemorrhagic or fibrinous 5.

Thoracic empyema (TE) and loculated parapneumonic effusions (CPE) cause considerable morbidity and mortality. Intrapleural Tenecteplase (TNKase) has been recently employed to lyse the fibrinous structures of multiloculated pleural space with reduction of surgical intervention 6.

CONCLUSION

RPE can present as chest pain, shortness of breath with very low glucose content in pleural fluid. Very rarely, RPE has features of high lipids and lactate dehydrogenase, and very low glucose and pH levels. This type of effusion eventually leads to fibrothorax and lung restriction. It seems useful to sensitize all clinicians to this

complications of RPE by reporting a case observed in our institution.

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