RHODOCOCCAL PNEUMONIA IN IMMUNOCOMPROMISED PATIENTS:

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ABSTRACT:

Rhodococcus equi is a recognised pulmonary pathogen in foals,swine,and calves. Most human infection have been associated with immune system dysfunction. We reported four patients with chest involvement from this organism.

INTRODUCTION:

Rhodococcus equi (formerly Corynebacterium equi) is an aerobic, gram positive, weakly acid fast non-motile, non-spore forming, pleomorphic coccobacillus. Rhodococcus equi is a recognised pulmonary pathogen in foals,swine and calves and is an unusual cause of human pulmonary infection. Most human infections have been associated with immune system dysfunction especially in patients with acquired immunodeficiency syndrome.[1,2,3,4,5,6,7,8] We reported four patients,three with AIDS and the other with lupus nephritis whom pulmonary infections were caused by Rhodococcus equi.

CASE REPORTS:

Case 1:

A 22-year-old male with AIDS was seen for complaints of fever, non-productive cough for 1 month. Cervical adenopathy with crepitation and decreased breath sounds over the left upper chest area were detected on physical examination. Chest roentgenogram showed multiple thin-walled cystic lesion in LUL without pleural effusion. (Fig 1) Cultures of the sputum yielded Rhodococcus equi.

Case 2:

A 27-year-old male with AIDS was admitted with a 10-days history of fever, non-productive cough and chest pain. On physical examintion,decreased breath sounds and dullness on percussion at left lower lung area were detected. Chest roentgenogram showed pulmonary consolidation with subsequent cavitation in the lingular segment of the LUL. No pleural effusion was seen. (Fig.2) Cultures of the sputum and blood yielded Rhodococcus equi.

Case 3:

A 37-year-old male with AIDS presented with fever, nonproductive cough and weight loss for 3 months. On physical examination, decreased breath sounds and dullness on percussion at right upper lung area were detected. Chest roentgenogram revealed lung mass in RUL and subsequent CT scan one week later demonstrated irregular thick-walled cavity formation. Neither adenopathy nor pleural fluid were observed. (Fig.3a,3b) Culture of the aspirated pus yielded Rhodococcus equi.

Case 4:

A 25-year-old female with lupus nephritis and history of receiving prednisolone and cyclophosphamide presented with fever,dyspnea and productive cough for 1 month. On physical examination, only slightly decreased breath sound at the left upper lung area was detected. Chest roentgenogram demonstrated cavitary mass in LUL

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with no pleural fluid. (Fig.5) Rhodococcus equi was islolated from sputum culture.

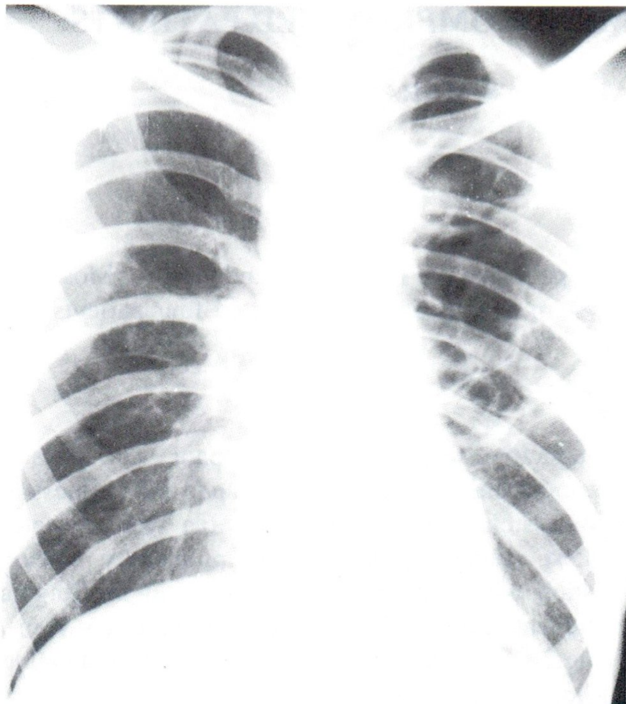

Fig.1 Multiple thin-walled cystic lesions LUL

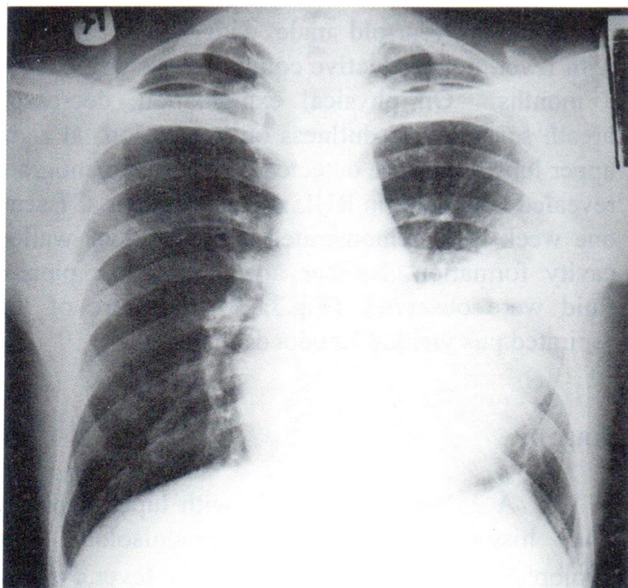

Fig.2 A big cavitary mass lingular segment of LUL

DISCUSSION:

Rhodococcus equi has been a rare cause of disease in humans. Most human infection have been associated with immune system dysfunction, particularly in HIV infection. To date at least 80 cases have been reported.[2] Pulmonary infections are the most common form of human disease caused by this organism. Most published cases of pneumonia have occured in immunocompromised hosts. The typical presentations are subacute onset of high fever, productive or non-productive cough and prominent fatique. Chest pain and weight loss are also common. Pulmonary infection is almost universal ,mass like consolidation progress to cavity formation and is infrequently associated with pleural effusion. Pulmonary infection is diagnosed by cultures of sputum, bronchial lavage fluid, pleural fluid or surgical biopsy specimens. Positive blood cultures are found in about half of the patients. The pathological findings include a necrotizing granulomatous reaction dominated by macrophages containing gram positive pleomorphic coccobacilli. Management requires a prolong course of at least 2 antibiotics. Clinical and radiographic progression often occurs and surgical resection has been performed in some cases. Our patients were immunocompromised hosts due to HIV infection and lupus nephritis. They had typical features of subacute onset of fever, cough and chest pain. Two patients developed pulmonary consolidation with subsequent cavity formation. One case presented with cavitary mass and the last one had multiple thin-walled cystic lesions. In immunocompromised patients who present with cavitary pneumonia,besides the possibility of tuberculous infection, other common causes include gram negative bacteria. The uncommon cause include MAI, nocardia, fungi and Rhodococcus equi. We suggested that Rhodococcus equi infection should always be considered in the differentail diagnosis in HIV infected patients who present with cavitary pneumonia of subacute onset.

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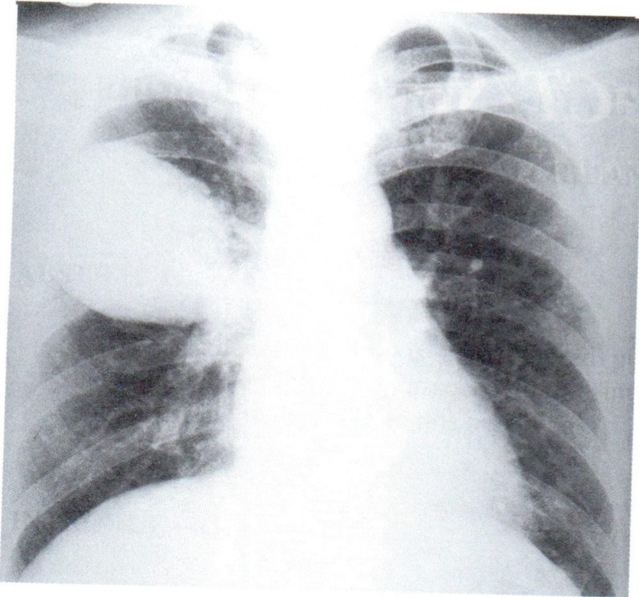

Fig 3a. Mass like consolidation RUL

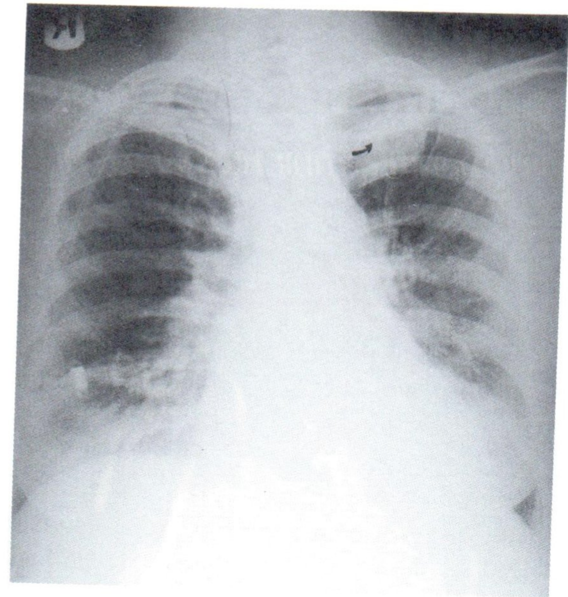

Fig.4 Cavitary mass lesion LUL

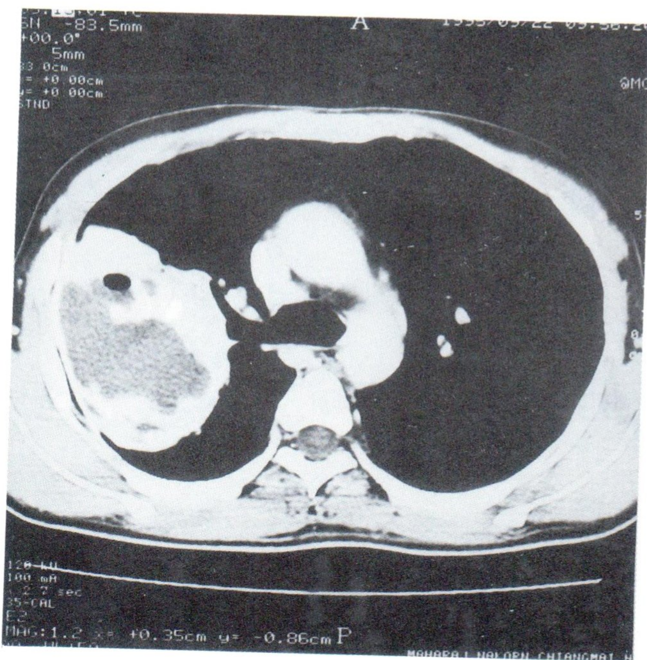

Fig.3b Large irregular thick-walled cavity RUL

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