We present a case of a 42-year-old man with chest pain, purulent sputum and dyspnoea that persisted for several days. The patient reported a substantial weight loss. HIV test was positive and CD4 T-cell count was 30 cells/μL. A chest CT was performed.

Imaging Findings:

Non-enhanced chest CT showed two mass-like consolidations with internal cavitations and air-bronchograms in the right upper and lower lobes, respectively (Fig. 1, 2). Apart from multiple variable-sized cavitary lesions, confluent consolidations were also evident bilaterally (Fig. 1). Both consolidations and cavitary lesions presented irregular contours.

Other findings included focal or coarse ground glass opacities, predominantly surrounding the cavitated consolidations, and also in apical and basal regions of both lungs (Fig. 1). Neither pleural nor pericardial effusion was evident. Some enlarged mediastinal lymph nodes were detected with short axis from few millimetres to 20 mm, the largest subcarinal (Fig. 1).

Sputum cultures yielded pleomorphic, gram-positive coccobacilli that were identified as Rhodococcus equi.

Discussion:

Rhodococci are aerobic, Gram-positive, nonmotile, catalase-positive actinomycetes that infect primarily immunocompromised patients [1]. R. equi was identified as the cause of an enzootic pneumonia in foals in 1923 and the first R. equi infection in a human was not reported until 1967 [2, 3]. To date, about 300 cases have been reported in the English literature. Increases in prevalence of human R. equi disease during the past 30 years seem to coincide with the HIV epidemic, advances in transplant medicine and cancer chemotherapy. No specific risk factors have been associated with infection in immunocompetent people. R. equi is thought to be acquired by either inhalation from the soil, inoculation into a wound or mucous membrane, or ingestion and passage through the alimentary tract. However, only one-third of all patients with R. equi infection have a history of exposure to horses or pigs [4, 5, 6]. Patients may present with infection at a single site or at multiple sites, the most frequent extrapulmonary manifestations include gastrointestinal infections, pericarditis, meningitis, and abscesses in the liver, kidney, psoas muscles, and contaminated cutaneous wounds [5]. Donisi et al. described 12 HIV-infected patients with R. equi infection with a mean CD4 count of 47 cells/μL [7]. In our patient, no previous history of contact with farm animals was certain, no sites of extrapulmonary involvement were detected and his CD4 T-cell count was 30 cells/μL. Only few reports are dedicated to CT findings of Rhodococcus equi pneumonia. The most common CT...
findings of R. equi infection consist of multiple and large consolidations with or without cavitations, ground-glass opacities, nodules and a tree-in-bud pattern, and there seems to be a preference towards the superior lobes of both lungs. Pleural effusion, empyema and mediastinal lymphadenopathy may also be present [8, 9, 10]. Infrequently Rhodococcus equi causes pericarditis and pericardial effusion [11]. In our case, the principal findings of Rhodococcus equi pulmonary involvement are represented by bilateral large and small consolidations, predominantly with cavitations, and ground glass opacities.

CT plays a crucial role in achieving a prompt diagnosis and helping reducing significant morbidity and mortality by avoiding under-diagnosis of this lung infection.

**Differential Diagnosis List:** Rhodococcus equi pneumonia, Pulmonary tuberculosis, Lung carcinoma

**Final Diagnosis:** Rhodococcus equi pneumonia

**References:**


Description: Lung window: bilateral focal areas of ground glass opacity in both upper lobes and a subsegmental area of air-space consolidation in the right upper lobe. Origin: P. Sergio, Department of Radiology, Istituti Ospitalieri di Cremona, Cremona, Italy
Description: Lung window: multiple cavities, sometimes confluent, with irregular walls are shown bilaterally. A large necrotic consolidation with fluid level is noted in the right lower lobe. Origin: P. Sergio, Department of Radiology, Istituti Ospitalieri di Cremona, Cremona, Italy
Description: Lung window: bilateral small nodular lesions and ground glass opacities. Several small cavities in right basal segments. Subsegmental atelectasis of the middle lobe is evident. Origin: P. Sergio, Department of Radiology, Istituti Ospitalieri di Cremona, Cremona, Italy
Description: Mediastinal window: mildly enlarged mediastinal lymph nodes are noted.

Origin:
P. Sergio, Department of Radiology, Istituti Ospitalieri di Cremona, Cremona, Italy
**Figure 2**

Description: Lung window: a large consolidation with small areas of cavitation in the right upper lobe (*), a large cavitated consolidation occupying the right superior lower and posterior upper lobes (**), bandlike collapse of the middle lobe (**). **Origin:** P. Sergio, Department of Radiology, Istituti Ospitalieri di Cremona, Cremona, Italy