A case of pulmonary tuberculosis presenting as diffuse alveolar haemorrhage: is there a role for anticardiolipin antibodies?

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Abstract

Background: Diffuse alveolar haemorrhage (DAH) has been rarely reported in association with pulmonary infections.

Case Presentation: We report the case of a 43 year old immunocompetent man presenting with dyspnoea, fever and haemoptysis. Chest imaging showed bilateral ground glass opacities. Microbiological and molecular tests were positive for Mycobacterium tuberculosis and treatment with isoniazid, rifampicin, ethambutol and pyrazinamide was successful. In this case the diagnosis of DAH relies on clinical, radiological and endoscopic findings. Routine blood tests documented the presence of anticardiolipin antibodies. In the reported case the diagnostic criteria of antiphospholipid syndrome were not fulfilled.

Conclusions: The transient presence of anticardiolipin antibodies in association with an unusual clinical presentation of pulmonary tuberculosis is intriguing although a causal relationship cannot be established.

Background

Diffuse alveolar haemorrhage (DAH) is a clinicopathologic syndrome defined by bleeding from alveolar vessels. It may be encountered in many different settings, especially in autoimmune diseases and systemic small-vessel vasculitides, and may be linked to various histological patterns. Pulmonary infections have been rarely associated to DAH. The diagnosis relies upon clinical manifestations, chest imaging, laboratory findings and bronchoalveolar lavage (BAL) [1].

To our knowledge, pulmonary tuberculosis (TB) has been reported only once as the cause of DAH, following autologous stem cell transplantation for diffuse large B cell lymphoma [2].

We report a case of culture proven pulmonary TB presenting as DAH in an immunocompetent man without other risk factors. Patient’s written consent was obtained for the case report to be published.

Case presentation

A 43 year old non-smoking man was admitted in June 2008 because of rapidly progressive exertional dyspnoea, fever and haemoptysis for one week. He reported three cases of pulmonary TB in his family (his father, a sister and an uncle). Past medical history was remarkable only for arterial hypertension, well controlled with amlodipine. He denied exposure to gases, fumes or toxic chemicals. He had never taken any illicit drug in the past.

At admission the patients was dyspnoeic with 30 breaths/min. Chest examination revealed fine bilateral rales. Physical examination of the heart revealed a regular tachycardia (110 beats/min) with normal heart sounds and no murmurs. Arterial blood pressure was 135/90 mmHg. Abdominal findings were normal. There were no signs of lower extremity deep venous thrombosis. Wells score was -2, rendering the diagnosis of venous thromboembolism very unlikely. Chest CT scan showed bilateral areas of increased attenuation with a prevalent pattern of ground glass opacities; focal areas of consolidation and scattered micronodules could be observed (Figure 1). We did not find upper lobe nodules or cavitities.
Antiphospholipid (aPL) antibodies have been found in association with many infectious diseases: viral (HCV, HBV, HIV, CMV, EBV, parvovirus B19, HTLV-1), bacterial and mycobacterial (leprosy, syphilis, rickettsiosis, leptospirosis), and parasitic (malaria, kala-azar) infections. In particular Elkayam et al. found aCL IgG and IgM in a proportion of TB patients significantly higher than in normal controls [7]. In these circumstances aCL antibodies are usually not associated with anti-β2-GPI antibodies and clinical findings of antiphospholipid syndrome (thrombotic and haematological). On the other hand, DAH has been described in patients with antiphospholipid syndrome (APS) [8]. In this case the diagnostic criteria of APS were not fulfilled. However, the transient presence of aCL antibodies in association with an unusual clinical presentation of TB is intriguing, although a causal relationship cannot be established.

To our knowledge this is the first reported case of pulmonary TB associated with a clinical picture of DAH in an immunocompetent patient without other risk factors. We suggest that an infectious cause should always be searched for in the diagnostic work-up of DAH because of obvious therapeutic implications. Molecular tests for M. tuberculosis may be of value, allowing for a timely diagnosis and prompt therapy. The prevalence and possible pathogenic role of aPL antibodies in patient with TB should be explored in a prospective manner.
Abbreviations
ANA: antinuclear antibodies; ENA: extractable nuclear antigens; AGBM: anti-glomerular basement membrane; ANCA: anti-neutrophil cytoplasmic antibodies; HCV: hepatitis C virus; HBV: hepatitis B virus; HIV: human immunodeficiency virus; CMV: cytomegalovirus; EBV: Epstein-Barr virus; HTLV-1: human T-lymphotropic virus-1.

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Authors’ contributions
AM (pulmonologist) performed FBS and BAL and drafted the manuscript. AC, CT and PN (infectious diseases specialists) were the reference physicians during the in-hospital management of this case. FNL (infectious diseases specialist) was the reference physician during the out-patient phase of management. All authors contributed to the article drafting, read and approved the final manuscript.

Competing interests
The authors declare that they have no competing interests.

Received: 24 June 2009
Accepted: 20 February 2010
Published: 20 February 2010

References
1. Fontenot AP, Schwarz MI: Diffuse alveolar hemorrhage, Interstitial Lung Disease Hamilton, ON: BC DeckerSchwartz MI, King TE Jr 2003, 632-656.
2. Keung Y-K, Nugent K, Jumper C, Cobos E: Mycobacterium tuberculosis infection masquerading as diffuse alveolar hemorrhage after autologous stem cell transplant. Bone Marrow Transplantation 1999, 23:737-738.
3. Kim EA, Lee KS, Primack SL, Yoon HK, Byun HS, Kim TS, Suh GY, Kwon OJ, Han J: Viral pneumonias in adults: radiologic and pathologic findings. Radiographics 2002, 22:S137-49.
4. Kane JR, Shenep JL, Krance RA, Hurwitz CA: Diffuse alveolar hemorrhage associated with Mycoplasma hominis respiratory tract infection in a bone marrow transplant recipient. Chest 1994, 105:1891-2.
5. Marruchella A, Franco C: Severe alveolar hemorrhage in legionella pneumonia. Sarcoidosis Vasc Diffuse Lung Dis 2003, 20:77.
6. Goletti D, Carrara S, Butera O, Amicosante M, Einst M, Sauzullo I, Vullo V, Cinillo D, Bononi E, Markova R, Dienerka R, Dominguez J, Latore I, Angeletti C, Navarra A, Petrovillo N, Laura FN, Ippolito G, Migliori GB, Lange C, Girardi E: Accuracy of immunodiagnostic tests for active tuberculosis using single and combined results: a multicenter TBNET-study. PLoS ONE 2008, 3(10):e3417.
7. Elkayam O, Caspi D, Lidgi M, Segal R: Auto-antibody profiles in patients with active pulmonary tuberculosis. Int J Tuberc Lung Dis 2007, 11(3):306-310.
8. Espinosa G, Cervera R, Font J, Asherson RA: The lung in the antiphospholipid syndrome. Ann Rheum Dis 2002, 61:195-198.

Pre-publication history
The pre-publication history for this paper can be accessed here:http://www.biomedcentral.com/1471-2334/10/33/prepub
doi:10.1186/1471-2334-10-33
Cite this article as: Marruchella et al.: A case of pulmonary tuberculosis presenting as diffuse alveolar haemorrhage: is there a role for antcardiolipin antibodies? BMC Infectious Diseases 2010 10:33.