Pulmonary Tuberculosis Presenting as Diffuse Alveolar Hemorrhage

Sir,

Hemoptysis is a common presentation of pulmonary tuberculosis; however, diffuse alveolar hemorrhage (DAH) is a rare association. DAH is a life-threatening medical condition which presents with hemoptysis, anemia, diffuse radiographic pulmonary infiltrates, and acute respiratory distress.[1] It is usually associated with autoimmune diseases such as systemic vasculitides, systemic lupus erythematosus, anti-glomerular basement membrane (GBM) disease, certain malignancies, and infections.[2,3] Cytomegalovirus, adenovirus, invasive aspergillosis, mycoplasma, influenza, and even staphylococcus infection have been associated with DAH.[3] However, pulmonary tuberculosis causing DAH has rarely been reported in the literature.

An elderly woman presented with cough for 2 weeks which was associated with blood-stained sputum. She had one episode of frank hemoptysis (20–25 mL), following which she developed exertional dyspnea. There was no history of orthopnea, paroxysmal nocturnal dyspnea, palpitations, fever, joint pains, hematuria, lower limb swelling, and skin or face rash. She had a weight loss of approximately 6 kg over the last 2 months.

At presentation, she was tachypneic and required oxygen support. Chest auscultation revealed coarse inspiratory crackles over both the lung areas. A chest radiograph was obtained, which showed diffuse infiltrates in both the lung fields. With a presentation of rapidly falling hematocrit and diffuse infiltrates on chest X-ray, differentials were pulmonary tuberculosis, fungal infection, carcinoma of the lung, bleeding disorder, and DAH. A high-resolution computed tomography was performed, which showed diffuse bilateral ground-glass opacities, suggesting the possibility of DAH [Figure 1]. She was taken up for bronchoscopy which revealed hemorrhagic aliquots confirming DAH. Further evaluation revealed a negative antinuclear antibody test, and complement levels were normal. Antibody panels, including antineutrophil cytoplasmic antibodies and anti-GBM antibodies, were also negative. Evaluation of bronchoalveolar lavage (BAL) fluid revealed hemosiderin-laden macrophages, stain for *Pneumocystis jirovecii* was negative, and no fungal elements were demonstrated. BAL fluid nucleic acid amplification test detected *Mycobacterium tuberculosis*. The patient was initially managed supportively by oxygen supplementation, and packed red blood cells were transfused for hemodynamic stabilization. After establishing the diagnosis of tuberculosis as the cause of her presentation, she was started on standard weight-based antitubercular therapy with isoniazid, rifampicin, pyrazinamide, and ethambutol as per the National Tuberculosis Elimination Program strategy.[4] The patient was followed up regularly, and she responded well to antitubercular treatment.

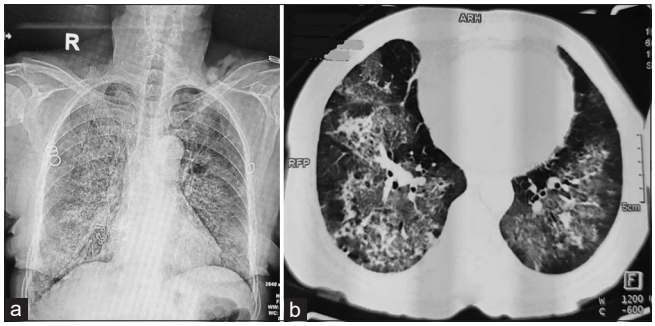

Figure 1: (a) Chest X-ray showing diffuse infiltrates in the bilateral lung. (b) HRCT chest showing diffuse bilateral ground-glass opacities (arrows) with few nodular opacities and tree-in-bud appearance. HRCT: High-resolution computed tomography

Treatment of DAH aims at hemodynamic stabilization, ventilatory support, and treatment of the underlying etiology. For autoimmune diseases complicating with DAH, standard treatment options include high-dose corticosteroids, immunosuppressants, or plasmapheresis.[5] However, for infections causing DAH, immunosuppression is harmful, hence management is supportive care and specific antimicrobial agents when available.[3] Therefore, etiological diagnosis of DAH is important for correct treatment. Our patient responded well to antitubercular therapy, which was the mainstay of the treatment.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Research quality and ethics statement

Authors followed applicable EQUATOR Network (https://www.equator-network.org/) guidelines, notably the CARE guideline, during the conduct of this report.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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