An uncommon cause of miliary disease: intravesical BCG immunotherapy

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A 71-year-old man was admitted with a one-week history of nocturnal fever, cough, chills, and malaise. He had previously been diagnosed with superficial bladder cancer (low-grade papillary urothelial carcinoma). During post-surgical follow-up, his physicians decided to start treatment with intravesical instillation of BCG for six weeks, followed by monthly maintenance treatment for 1 year. The current symptoms of the patient appeared 1 year after treatment initiation. Chest CT demonstrated diffuse pulmonary micronodules with a random pattern (Figure 1). The patient was diagnosed with granulomatous lung disease caused by *Mycobacterium bovis*, and treatment with oral prednisolone, rifampin, isoniazid, and ethambutol was initiated, resulting in symptom improvement.

BCG immunotherapy for the treatment of *in-situ* carcinoma of the urinary bladder is the adjuvant treatment of choice. It is generally well tolerated and has no serious side effects; however, BCG may cause multisystem disease. BCG-induced pneumonitis, the pathogenesis of which may be related to *M. bovis* infection or a hypersensitivity reaction, occurs in less than 1% of patients. The lungs are the most commonly affected extra-urinary organs, presenting with diffuse interstitial disease; the most common finding is the presence of diffuse micronodules with a random pattern simulating miliary tuberculosis. This condition is treated with antitubercular medications and corticosteroids.[1-3]

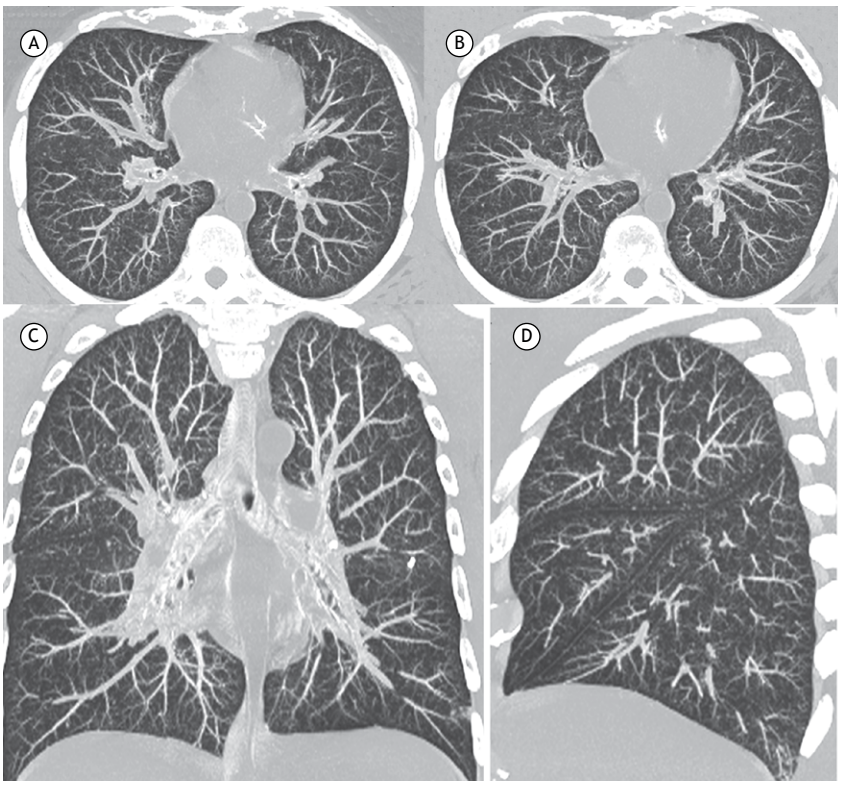

Figure 1. Axial (in A and B), coronal (in C), and sagittal (in D) reformatted CT images in maximum intensity projection show small, randomly distributed nodules. Also, note small nodules along the pulmonary fissures in C and D.

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