IMAGES IN HEMATOLOGY

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A Rare Cause of Dyspnea in a Patient with Multiple Myeloma: Tracheobronchial Amyloidosis

Ufuk F. and Ocak İ.: A Rare Cause of Dyspnea in a Patient with Multiple Myeloma: Tracheobronchial Amyloidosis

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A 39-year-old woman with a two-year history of multiple myeloma (IgG kappa isotype), currently in remission, presented with progressive dyspnea over a few months. At the time of multiple myeloma diagnosis, a bone marrow biopsy confirmed the presence of amyloid deposits with Congo red staining. Her treatment regimen included chemotherapy and ongoing therapy with lenalidomide and dexamethasone, resulting in a very good partial response (VGPR), with dosage adjustments based on disease activity and symptomatology. Physical exam revealed upper airway wheezing and tracheal tugging, and chest CT revealed irregular, circumferential thickening of the tracheal and bronchial walls with accompanying submucosal calcifications (Figure 1, 2, and Movie). The patient exhibited no systemic amyloidosis signs such as elevated pro-BNP levels or albuminuria. A bronchoscopic biopsy and histopathological examination of the biopsy specimens confirmed the diagnosis of AL amyloidosis. Although AA amyloidosis rarely involves the tracheobronchial tree, it was ruled out in this case.
Tracheobronchial amyloidosis (TBA) is characterized by amyloid proteins depositing in the trachea and bronchi, leading to thickening and narrowing (1). Clinical findings of TBA are nonspecific, and TBA usually does not accompany systemic amyloidosis or affect the lung tissue. Chest CT is vital in diagnosing and assessing the extent of TBA. The CT findings of TBA include the thickening of the tracheal and bronchial walls, which can often include calcification. Additionally, nodular lesions may occasionally be visible along the airways, representing localized amyloid deposits, as in the present case (2). This detailed visualization helps accurately diagnose the condition and guide therapeutic interventions (1, 2). Despite multiple bronchoscopic interventions, managing airway problems remains a significant challenge, often with recurrent issues.

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References

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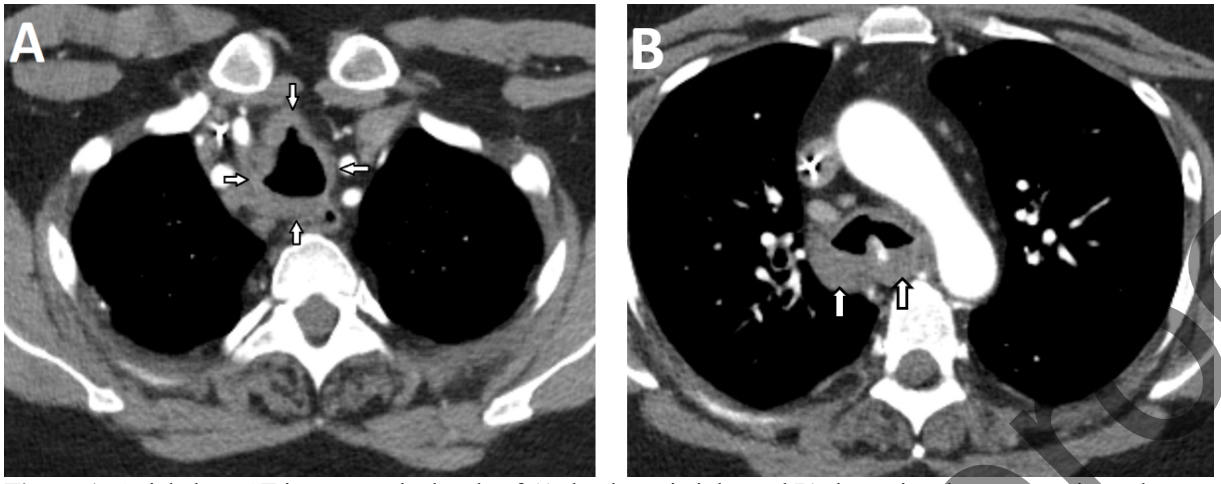

Figure 1: Axial chest CT images at the levels of **A)** the thoracic inlet and **B)** the carina demonstrate irregular, circumferential thickening of the tracheal wall, including the membranous portion (arrows).

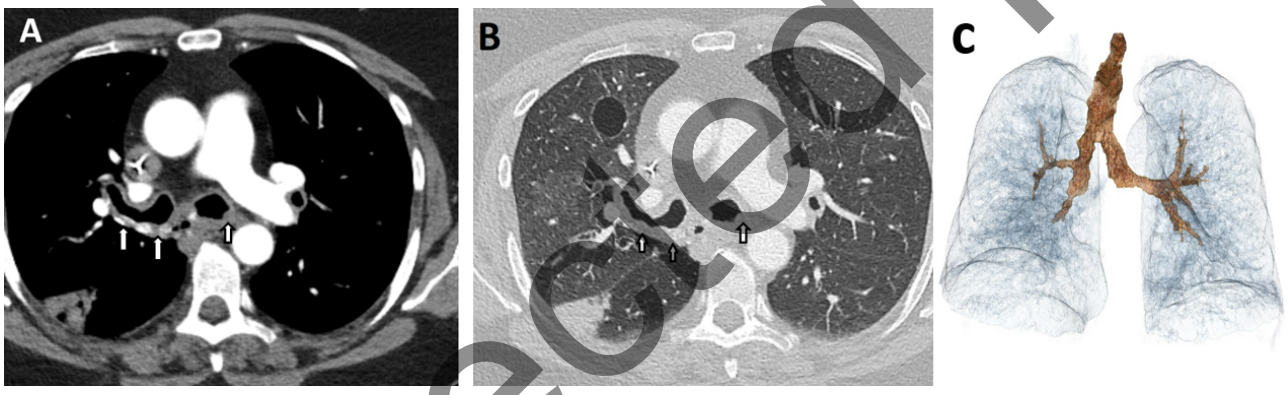

Figure 2: Axial chest CT images at the main bronchi level using **A)** mediastinum and **B)** lung window settings reveal irregular, nodular thickening of the bronchial walls along with submucosal calcifications (arrows). **C)** Three dimensional volume rendering chest CT image demonstrates luminal irregularities along the large airways (arrows).

Movie: Movie of volume-rendered three-dimensional reconstruction chest CT image demonstrates circumferential luminal irregularities along the large airways.