• Titolo: Post-Radiotherapy Bronchial Obstruction in an ALK-Rearranged NSCLC Patient Treated with Lorlatinib: Diagnostic Challenges and Response to Corticosteroids

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Background:
Bronchial stenosis is a recognized complication of thoracic radiotherapy, although severe endobronchial obstruction may mimic disease progression and pose significant diagnostic and therapeutic challenges. We report a case of post-radiotherapy bronchial stenosis in a patient with ALK-positive metastatic lung adenocarcinoma successfully managed with systemic corticosteroids.

Case Presentation:
A 51-year-old former smoker was diagnosed in 2021 with stage IV lung adenocarcinoma after presenting with dyspnea and pulmonary embolism. Initial molecular testing showed PD-L1 expression of 20%, with negative ALK and ROS1 rearrangements. Following first-line chemo-immunotherapy with carboplatin, pemetrexed, and pembrolizumab, disease progression occurred in August 2022. Repeat biopsy and molecular analysis identified an ALK rearrangement, confirmed by next-generation sequencing, and treatment with alectinib was initiated, achieving durable disease control for more than two years. In March 2025, lorlatinib was started, and the patient underwent stereotactic radiotherapy to a left lower lobe lesion and mediastinal lymph nodes.

Five months later, she developed progressive dry cough and worsening dyspnea. Computed tomography revealed tissue involvement of the bronchus intermedius with progressive endoluminal obstruction. Multiple bronchoscopies, biopsies, bronchial lavages, mechanical debulking procedures, and repeated recanalizations with stent placement were performed. Histological and cytological examinations consistently showed no evidence of malignancy. Given the absence of tumor recurrence and stable disease elsewhere, radiation-induced inflammatory bronchial stenosis was suspected.

Discussion and Conclusion:
Systemic corticosteroid therapy with prednisone (50 mg/day for 3 months followed by gradual tapering) was initiated, resulting in marked clinical improvement, resolution of dyspnea, and enhanced quality of life. This case highlights the importance of considering post-radiotherapy inflammatory stenosis in the differential diagnosis of airway obstruction in patients receiving targeted therapies. Corticosteroids may represent a valuable therapeutic option in selected cases, potentially reducing recurrent obstruction and the need for repeated interventional bronchoscopic procedures.