We present a case of a 47-year-old woman with a history of right pleural mesothelioma status post partial pleurectomy, decortication, and intraoperative hyperthermic chemotherapy, followed by adjuvant proton radiation therapy. She also has a remote history of Hodgkin lymphoma treated with systemic chemotherapy and radiation therapy to the mediastinum. Three months post proton therapy, she presented with a progressive chronic cough and thick sputum production with spontaneous bronchial casts expectoration in the form of the bronchial tree (Figure). Computed tomography scan of the chest showed extensive consolidation throughout the right hemithorax (Supplemental Figure 1, available online at http://www.mayoclinicproceedings.org). A bronchoscopy was performed and bacterial, mycobacterial, and fungal cultures on bronchoalveolar lavage fluid were negative. A diagnosis of radiation pneumonitis was made. Histopathologic examination of the bronchial cast showed fibrinous exudate (Supplemental Figure 2, available online at http://www.mayoclinicproceedings.org). The patient was treated with corticosteroids, hypertonic saline nebulization, and bronchodilators resulting in clinical improvement.

The presence of bronchial casts is often attributed to plastic bronchitis that is most commonly secondary to congenital heart disease or diffuse bronchial hypersecretory disorders such as asthma, cystic fibrosis, and recurrent infections. Histologically, there are two types of bronchial casts. Bronchial cast type I, also known as an inflammatory or cellular type that usually contains eosinophils, fibrin, and Charcot-Leyden crystals, is similar to that from our patient. In contrast, bronchial cast type II is acellular and frequently seen in patients with underlying cardiac disease.

SUPPLEMENTAL ONLINE MATERIAL
Supplemental material can be found online at http://www.mayoclinicproceedings.org.
Supplemental material attached to journal articles has not been edited, and the authors take responsibility for the accuracy of all data.

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