A Patient Referred for Steroid-Resistant Asthma*

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A 31-year-old white woman was referred for evaluation of steroid-resistant asthma. She was well until 16 months earlier when respiratory wheezing and dyspnea on exertion developed. A diagnosis of asthma was made by a family physician.

Medical therapy with oral theophylline, ipratropium bromide and albuterol metered dose inhalers was begun for progressive shortness of breath. Prednisone at a dose of 40 mg daily was given for two months prior to our evaluation, without clinical benefit. Severe disabling dyspnea at rest developed and the patient was referred to our institution.

The chest films from one month earlier were reviewed (Fig 1 and 2). Spirometry demonstrated an FEV₁ of .52 liters (3.26 liters predicted) and an FVC of 1.06 liters (3.83 liters predicted) with an FEV₁ to FVC ratio of 49 percent.

Diagnostic and therapeutic procedures were performed.

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**Diagnosis: Bronchial carcinoid tumor originating from the carina with alternating complete right and left mainstem bronchial obstruction**

Tomograms of the trachea revealed a round 3.5 cm mass with a short stalk originating from the carina (Fig 3). Fiberoptic bronchoscopy demonstrated the mass at the carina with slit-like orifices to both mainstem bronchi distal to the mass. The mainstem bronchi alternatively became completely obstructed with tidal breathing due to the pendulum-like swinging movement of the mass with respiration. Biopsy specimens of the mass showed a well-differentiated carcinoid tumor. The patient underwent emergent rigid bronchoscopy and had the tumor “cored out,” as described by Mathisen and Grillo. Immediate symptomatic relief of the airway obstruction occurred postoperatively.

Bronchial carcinoids most commonly present with recurrent pneumonia, hemoptyis, chest pain, persistent cough and dyspnea.2,3 Wheezing is an uncommon presenting sign occurring in less than 3 percent of patients.2,4 From a review of 1,014 cases of bronchial carcinoid tumors in the medical literature, only one previous case has been reported to arise directly from the carina.1-10

Bronchial carcinoids are malignant tumors, with 5 to 10 percent having distant metastases at presentation.2,7 Treatment of bronchial carcinoids requires definitive surgical resection for localized disease. “Coring out” of the endobronchial tumor with rigid bronchoscopy is the preferred method of relieving malignant airway obstruction until more definitive therapy can be initiated.1 This approach was utilized in this patient where carinal resection was performed after the patient's airway obstruction was relieved with the “coring out” procedure.

In summary, we describe a rare anatomic location for a bronchial carcinoid tumor as determined by a survey of the medical literature with a MEDLINE computer search. In addition, our patient highlights the importance of considering fixed structural airway lesions as a cause of “asthma” in patients resistant to bronchodilator therapy.

**References**

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