

Letter to the Editor

Asthma-like syndrome in a teenager

Editor,

When a diagnosis of asthma-like syndrome is suspected (1), it may be that gastroesophageal reflux (GER) might be considered an etiologic factor (2), as in this case.

A 15-year-old boy (B.M.) presented with wheezing not responding to prior treatment. His clinical history was negative for allergic diseases, and his growth was normal. He had suffered two episodes of pneumonia in the right lower lobe when he was 50 days old and 8 years old. From the age of 13 years, he developed a chronic cough and recurrent wheezing associated on three occasions with pneumonia, always in the right lower lobe. Total immunoglobulin E were 12 kU/l and radioallergosorbent test (RAST) for inhaled allergens, sweat test and the purified protein derivative (PPD)-tuberculin test were all negative; spirometry demonstrated forced vital capacity (FVC) 96%, forced expiratory volume in one second (FEV₁) 98%, and FEF_{25–75%} (forced expiratory flow rate) 104% of predicted value, and the treadmill test gave a bronchoconstriction index of 8%; high-resolution computed tomography (HRCT) and fiberoptic bronchoscopy were negative. Wheezing persisted despite daily treatment with salbutamol and fluticasone delivered by metered-dose inhaler (MDI). Esophageal pH-monitoring (24 h) revealed total reflux time at pH < 4 = 20% and the child tested positive for *Helicobacter pylori*. The diagnosis was asthma with GER and the child was treated with pantoprazole, amoxicillin and metronidazole (followed by maintenance therapy with pantoprazole alone), and salbutamol and fluticasone MDI. Respiratory symptoms improved, but did not disappear. After 3 months of therapy, the child underwent a barium swallow which disclosed a moderate GER, while gastric scintigraphy for reflux was negative. pH-monitoring showed improvements (total reflux time at pH < 4 = 5.5%), and so acid suppressant therapy was discontinued.

On hospitalization at 15 years of age the boy underwent routine tests (all normal), spirometry

(FVC 76%, FEV₁ 78%, FEF FEF_{25–75%} 131% of normal value) and bronchoscopy, which disclosed a rounded, hyperemic mass almost completely occluding the main right lower bronchus (Fig. 1). Echocardiography was normal. HRCT confirmed the presence of a solid neoplasm with irregular margins 2.5 × 2 × 3 cm occluding the right lower lobar bronchus (Fig. 2). Endoscopic biopsy confirmed the neoplasm as a pulmonary carcinoid.

The patient underwent surgical excision of the tumor and histology confirmed the diagnosis of carcinoid with areas revealing a high mitotic index (atypical carcinoid). The parahilar neoplasm involved the bronchial wall and the pulmonary parenchyma of the right lower lobe, with metastases to the hilar and peribronchial lymph nodes, so the right lower and middle lobes

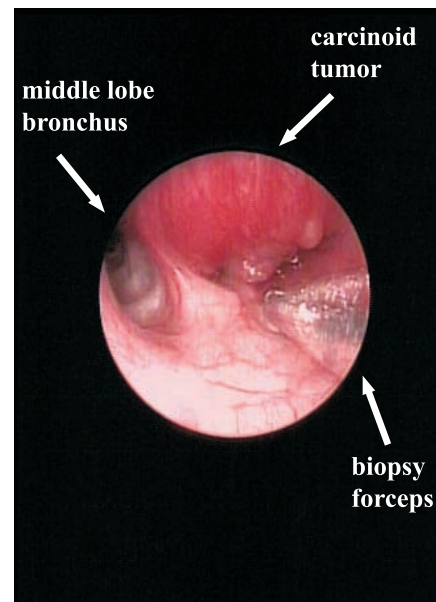


Fig. 1. Endoscopic image obtained at the rigid bronchoscopy disclosing a rounded, hyperemic mass (to top right arrow) almost entirely occluding the right lower lobar bronchus (the biopsy forceps are indicated by bottom right arrow and the middle lobar bronchus by top left arrow).

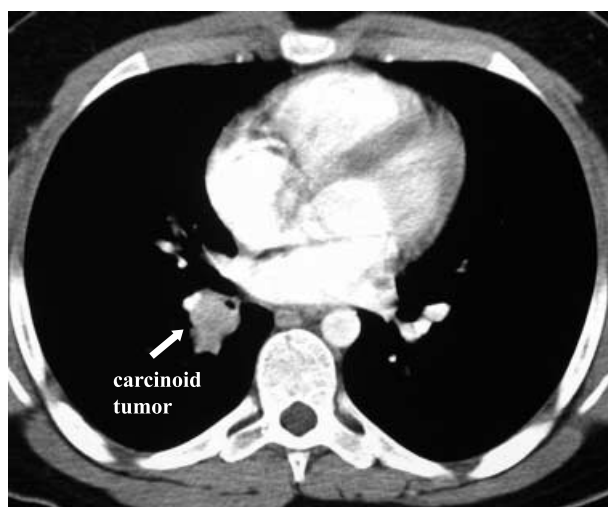


Fig. 2. High-resolution CT scan of the chest which confirms a solid mass with irregular margins $2.5 \times 2 \times 3$ cm occluding the main right lower bronchus (arrow).

were removed. After surgery, the chromogranin-A values dropped from $105 \mu\text{g/l}$ to $27 \mu\text{g/l}$ (normal range $19\text{--}98 \mu\text{g/l}$). Twelve months later, the ^{111}In -Octreoscan scintigraphy (Octreoscan[®], Mallinckrodt Medical b.v., Petten, Holland) was negative, and the boy enjoys a normal lifestyle.

In this case, esophageal pH-monitoring initially supported the suspicion that the asthma-like syndrome was caused by GER, but treatment for GER and wheezing failed to control the symptoms completely, as the wheezing was due to the mechanical obstruction of a major bronchus by an endobronchial carcinoid. Carcinoid is a rare neuroendocrine tumor located mainly in the bowel, stomach, and lung (3–5) sometimes accompanied by carcinoid syndrome, that is more frequent in the intestinal form of the disease (6), but the absence of flushing, diarrhea and heart-valve disease excluded carcinoid

syndrome in our case. The time from onset of symptoms to clinical diagnosis and initiation of treatment is usually several months – but was 2 years in our case. When cough, wheezing, and lung parenchymal inflammation are persistent, a lung tumor should always be considered in differential diagnosis. Radiologic changes are usually non-specific in cases of bronchial carcinoma, whereas bronchoscopy with biopsy and CT are decisive. Given the relatively low malignancy of carcinoid, the outcome of surgical treatment is good even in the event of metastases to the regional lymph nodes (7).

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