



A 14-Year-Old Female with Fixed Airflow Obstruction

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Figure 1. (A) Spirometry and computed FEV₁/peak expiratory flow rate (PEFR) [ml/(L·min⁻¹)]/60 suggesting fixed large airway obstruction (2). (B, C) Coronal view of computed tomography (B) with three-dimensional reconstruction (C). The arrow indicates the most narrowed region of the trachea.

A 14-year-old previously healthy female presented with exertional dyspnea for 6 months. Physical examination was unremarkable except for intermittent noisy breathing. Spirometry (Figure 1A) demonstrated flattened inspiratory and expiratory loops, suggesting fixed large airway obstruction (1–3). Computed tomography with three-dimensional reconstruction demonstrated a 2- to 3-cm-long concentric stenotic tracheal segment without external compression (Figures 1B and 1C). Flexible bronchoscopy revealed proximal tracheal stenosis, and endobronchial biopsies demonstrated fibrosis with acute and chronic inflammation. No vasculitis or granulomas were seen. Erythrocyte sedimentation rate, C-reactive protein, and cytoplasmic antineutrophil cytoplasmic antibodies were normal. Causes of tracheal stenosis include trauma (postintubation, surgery, and radiation), autoimmune disorders (granulomatosis with polyangiitis, relapsing polychondritis, systemic lupus erythematosus, and sarcoidosis), infection, gastroesophageal reflux, and congenital abnormalities (4, 5). In this case, none of these etiologies were evident, and a diagnosis of idiopathic tracheal stenosis was made. Idiopathic tracheal stenosis is a rare condition occurring almost exclusively in females (5, 6). Airway dilation, local corticosteroid injection, and laser ablation are therapeutic options, but in refractory cases, segmental laryngotracheal resection should be considered (6).

Author disclosures are available with the text of this article at www.atsjournals.org.

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