A 54-year-old male patient was admitted with a cough and dyspnea present for 2 months. He had undergone surgical graft interposition repair of the ascending aorta for acute DeBakey type I aortic dissection 7 years earlier. A chest X-ray showed a large area of radiopacity located at the mid to upper mediastinum and extending to the left lung (Figure A). Contrast-enhanced computed tomography (CT) revealed an aortic dissection with the flap beginning at the minor curvature of the arcus aorta at the level of the left subclavian artery take-off and ending at the abdominal aorta at the level of the third lumbar vertebra (Figure B, C). A large thoracic aortic aneurysm measuring 160x124x262 mm in size was compressing the trachea, left main bronchus, and left lung (Figure 1B, C). The aneurysm formation was also evident on aortography (Figure D). The patient underwent a hybrid procedure of surgical arch debranching followed by thoracic endovascular aortic repair (Figure E-H). He was discharged uneventfully and was doing well at 2 months follow-up. Aneurysmal dilation of the thoracic aorta remains a major complication in the long term following repair of the ascending aorta with isolated interposition grafting for type I acute aortic dissection. Residual chronic distal aortic dissection is the primary cause of aneurysm formation. All patients with chronic aortic dissection should be regularly followed up with CT or magnetic resonance imaging.

**Figures**—(A) A chest X-ray showed a large area of radiopacity located at the mid to upper mediastinum and extending to the left lung. (B, C) A large thoracic aortic aneurysm can be seen compressing the trachea, left main bronchus, and left lung. (D) Aortography image of the aortic aneurysm. (E-H) Intraoperative photograph of the surgical arch debranching and thoracic endovascular aortic repair.