

Robotic Sleeve Right Middle Lobectomy for a Carcinoid Tumor Misdiagnosed as Asthma: A Surgical Video Case

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Background

Endobronchial tumors may present with nonspecific respiratory symptoms and be misdiagnosed as benign airway diseases such as asthma, resulting in delayed diagnosis. Centrally located bronchial tumors require meticulous preoperative evaluation and intraoperative adaptability to achieve parenchyma-sparing resection while preserving oncologic principles. We present a surgical video demonstrating robotic sleeve middle lobectomy for an obstructing endobronchial carcinoid tumor.

Case

A 48-year-old male presented with chronic cough and dyspnea persisting for nearly one year and had been treated for asthma without clinical improvement. Chest radiography was unremarkable, whereas thoracic computed tomography revealed an obstructing lesion of the right middle lobe bronchus. (68)Ga-DOTA-TATE PET/CT demonstrated intense radiotracer uptake without evidence of nodal or distant metastasis. Flexible bronchoscopy identified a tumor protruding from the middle lobe bronchus; however, the extent of involvement of the intermediate and lower lobe bronchi remained uncertain. A robotic surgical approach was planned with the intention of performing bronchial sleeve resection if technically feasible, or sleeve middle lobectomy if required intraoperatively.

Intraoperative exploration demonstrated an endobronchial tumor arising from the middle lobe bronchus with extension toward the intermediate bronchus. Following systematic hilar and mediastinal lymph node dissection, frozen-section examination of station 11 lymph nodes revealed no malignancy. Bronchotomy of the intermediate bronchus confirmed tumor extension into the middle lobe bronchus, necessitating robotic sleeve middle lobectomy. Reconstruction was achieved by end-to-end anastomosis between the intermediate bronchus and lower lobe bronchus using a continuous V-Loc suture technique. Air leak testing was negative, and the anastomosis was reinforced by approximation of adjacent lung parenchyma. Systematic mediastinal lymphadenectomy was completed successfully.

Conclusions

Robotic sleeve middle lobectomy represents a safe and effective parenchyma-sparing approach for selected centrally located endobronchial tumors. This video highlights the value of robotic precision and intraoperative flexibility in the management of bronchial carcinoid tumors, particularly in patients with delayed diagnosis due to misleading asthma-like symptoms.

Case Video

