

# **Treatment of bronchial micro fistula with tissue adhesives after the pulmonary wedge resection for typical carcinoid in patient with long-term chronic obstructive pulmonary disease.**

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Publication Date: 2016

## **Abstract:**

Background: Bronchial fistula is one of the complications that may occur after lung resections. Small fistulas can be treated endoscopically using mechanical abrasion, sclerosing agents and cyanoacrylate glue. We report a case of a patient in whom wedge resection of the left lung, due to typical carcinoid, was complicated by persistent pneumothorax, probably due to development of micro fistula. Autologous tissue adhesive was applied endoscopically for treatment of this complication. Case report: The 77-year-old male patient with long-term chronic obstructive pulmonary disease and history of spontaneous pneumothorax was admitted to the Institute for Oncology and Radiology of Serbia for surgical treatment of a lung tumor. Computed tomography of the chest was previously done, showing a 30 x 25 mm tumor in the top segment of the left lower pulmonary lobe, with signs of pulmonary emphysema. Tumor markers were within normal ranges. Bronchoscopic biopsy was done, with findings of typical carcinoid in the superior segmental bronchus of left lower lung (LB6). After adequate preoperative preparation, wedge resection of the left lower lobe was performed. Definitive histopathological findings confirmed diagnosis of typical carcinoid with invasion of the bronchus wall. Three lymph nodes were without elements of malignancy. Postoperative recovery was compromised by subcutaneous emphysema and reduced re-expansion of the left lung on chest X-ray, and patient was retreated with thoracic drainage three times. On the 33rd postoperative day, patient was discharged from hospital in good general

condition, with complete expansion of the left lung. Three days later, patient was readmitted with partial pneumothorax and atelectasis of the left lower lobe, and he was drained again. Due to multiple unsuccessful attempts of solving pneumothorax, it was decided to treat probable bronchial micro fistula with tissue adhesives. Bronchoscopy was done and LB6 suture was identified. Each segmental bronchus of the left lung was individually occluded with balloon catheter in order to identify the micro fistula. Thoracic drainage system did not register significant decrease in air leakage and the procedure was continued by applying the autologous tissue adhesive on the sutured LB6 through a catheter placed into the working channel of the bronchoscope. After application of fibrin glue, significant decrease in air leakage was immediately confirmed and left lung was re-expanded. After a few days, patient was discharged from our hospital with no signs of pneumothorax on control chest X-ray. Top of Form Conclusion: In elderly patients with associated diseases, this could be the therapy of choice in the management of bronchial micro fistula as a very effective alternative to surgical treatment.