**Objectives**:

This article reports a case of pulmonary *Exophiala oligosperma* infection in an immunocompromised patient who was successfully treated with amphotericin B liposome combined with bronchoscopic intervention followed by sequential surgery, providing new insights into the diagnosis and comprehensive intervention of dark fungal lung infections.

**Materials & Methods:**

The patient was a 49-year-old male with acute B-lymphoblastic leukemia who worked in the waste recycling industry. He presented with an 18-day history of cough and expectoration. Physical examination revealed tachypnea and wet rales in the upper lobe of the right lung. Chest computed tomography (CT) showed high-density consolidation surrounding a central ground-glass opacity in the upper lobe of the right lung, with an air bronchogram within the consolidation (Figure A). Blood gas analysis indicated an oxygen partial pressure of 55.6 mmHg on inhaled air. Routine blood tests revealed leucopenia, neutropenia, and thrombocytopenia. Bronchoscopy revealed a large amount of white striped secretions in the upper lobe bronchus of the right lung (Figure B). Pathological examination with HE staining showed septate hyphae. mNGS confirmed the pathogen as *Exophiala oligosperma*. Due to the patient's thrombocytopenia, surgical intervention was not feasible. The patient was initiated on local infusion therapy with amphotericin B via bronchoscopy (total of 5 times, approximately once a week), amphotericin B nebulization, amphotericin B liposome intravenous infusion, posaconazole oral therapy, platelet transfusion to correct thrombocytopenia, and subcutaneous injection of granulocyte colony-stimulating factor. Repeat CT scans showed a reduction in lesion size to a resectable state. Two months later, the patient underwent thoracoscopic right upper lobectomy.

**Results:**

The patient's imaging findings were typical of the reversed halo sign, which can be confused with bacterial pneumonia/tuberculosis, and pathology can be misdiagnosed as pulmonary aspergillosis (requiring special staining for differentiation). CT comparison before and after bronchoscopic intervention showed a reduction in nodule size, and pleural invasion lesions had recovered. This narrowed the scope of surgical resection. During the 6-month and 1-year follow-ups, he recovered well.

**Conclusions:**

*Exophiala oligosperma* belongs to the family of dematiaceous fungi. Pulmonary *Exophiala oligosperma* infections are extremely rare in lung infection with few reports in the literature, emphasizing its clinical significance. Dematiaceous fungi have low sensitivity to conventional antifungal drugs, making treatment challenging. Early pathological diagnosis combined with molecular techniques, antifungal drugs, and bronchoscopic intervention with sequential surgery can improve the prognosis of pulmonary *Exophiala oligosperma* infection.