PULMONARY ASPERGILLOMA OF RIGHT LOWER LOBE : A CLINICAL CASE REPORT

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ABSTRACT

Pulmonary aspergilloma is a non-invasive fungal colonization occurring within pre-existing lung cavities and commonly presents with hemoptysis. It typically presents with hemoptysis, cough, and constitutional symptoms, although some patients may remain asymptomatic. Diagnosis is primarily based on characteristic radiological findings, supported by microbiological and serological evidence. This is a case of 61-year-old male with recurrent hemoptysis and a cavitary lesion in the right lower lobe, suggestive of aspergilloma, who was successfully managed with video-assisted thoracoscopic surgery (VATS) right lower lobectomy, resulting in complete clinical recovery.Surgical resection remains the definitive treatment in symptomatic patients or those not responding to medical therapy.

KEYWORDS : Pulmonary Aspergilloma , Hemoptysis, Video-assisted thoracoscopic surgery

INTRODUCTION

Aspergilloma, also known as a fungal ball, is a non-invasive manifestation of pulmonary aspergillosis caused by colonization of Aspergillus species most commonly Aspergillus fumigatus within a pre-existing lung cavity formed due to conditions such as tuberculosis, bronchiectasis, lung abscess, or chronic lung disease; it typically presents in immunocompetent individuals and remains confined to the cavity without tissue invasion [1]. Clinically, patients may be asymptomatic or present with chronic cough, hemoptysis (the most characteristic and potentially life-threatening symptom), breathlessness, chest pain, fever, and recurrent respiratory infections[2,3]. Radiologically, aspergilloma is classically identified on HRCT thorax as a mobile intracavitary mass with an air crescent sign, sometimes associated with surrounding inflammatory changes, while definitive diagnosis is supported by imaging, serology, microbiology, and histopathology when available[4]. Current evidence suggests that symptomatic aspergilloma, especially when associated with recurrent or massive hemoptysis or failure of medical therapy, is best managed surgically, with video-assisted thoracoscopic surgery (VATS) lobectomy being a preferred approach due to reduced morbidity and improved postoperative

outcomes[5,6]. In the present case, a cavitary lesion in the right lower lobe with clinical hemoptysis, radiological features suggestive of aspergilloma or abscess, and lack of response to conservative management aligns with contemporary recommendations favoring definitive surgical resection for symptom control and prevention of life-threatening complications.

CASE PRESENTATION

A 61-year-old male patient presented with intermittent hemoptysis for one month, associated with cough. Initial evaluation at a local hospital revealed a cavitary lesion in the right lower lobe, suspicious for aspergilloma or lung abscess, and the patient was referred to a tertiary care center for further management. He was a known case of Type II diabetes mellitus and hypertension, on regular treatment, with no prior history of tuberculosis, asthma, or malignancy, and no known drug allergies.

High-resolution CT thorax showed a well-defined peripherally enhancing hypodense cavitary lesion with central fluid density and air pockets in the superior segment of the right lower lobe, abutting the right oblique fissure, suggestive of aspergilloma or abscess. As the patient continued to have symptoms and did not respond to conservative management, he underwent video-assisted thoracoscopic surgery (VATS) right lower lobectomy under general anesthesia with single-lung ventilation. Intraoperatively, a 5 × 5 cm cavitary lesion was identified in the right lower lobe; the pleura was normal, hemostasis was achieved, no active air leak was noted, and an intercostal drain was placed. During hospitalization, the patient received intravenous ceftriaxone 1 g twice daily, intravenous vancomycin 1 g (renal dose adjusted), and intravenous fluconazole 200 mg once daily, along with supportive care including intravenous fluids, tablet clonidine (Arkamin) 0.1 mg once daily, and tablet cilnidipine (Cilacar) 20 mg once daily. Postoperatively, he developed a transient air leak with lung collapse and fever, which were managed conservatively, following which lung expansion was achieved and the intercostal drain was removed.

At discharge, the patient was prescribed tablet Monocef-O CV 1 tablet twice daily for 5 days, tablet Defcort 12 mg once daily for 3 days followed by tapering to 6 mg once daily for 2 days, tablet Pantoprazole 40 mg once daily for 10 days, tablet Fexolite-M once daily for one week, tablet Abday Plus once daily for one week, nebulization with Forapril 0.5 mg twice daily, Glycoquic twice daily, and tablet Levolin 1 tablet twice daily for one week. His long-term medications, tablet Amlodipine 5 mg once daily and tablet Vildagard-M 50/500 mg once daily, were continued. The patient was discharged in a stable condition with advice for review after 10 days along with chest X-ray, blood investigations including CRP, RBS, HbA1c, and HPR, while histopathological examination of the resected specimen was awaited.

DISCUSSION

Pulmonary aspergilloma most commonly develops within pre-existing lung cavities and frequently presents with hemoptysis, which remains the most significant and potentially fatal complication. As reported by Kousha et al., clinical presentation depends on host immunity and underlying pulmonary conditions, with hemoptysis being the most frequent symptom. In the present case, the patient's intermittent hemoptysis and cough were consistent with these typical features, supporting the clinical suspicion of aspergilloma[7]. In the present case, the patient had recurrent hemoptysis with a localized cavitary lesion in the right lower lobe, consistent with classical presentations reported in previously published case reports of aspergilloma. Similarly the case reports done by Sagan and Goździuk, where surgical resection was necessary for symptomatic pulmonary aspergilloma that did not respond to conservative management, similarly in this current case the patient similarly failed to show clinical improvement with medical therapy alone[8]. Persistent symptoms and radiological findings prompted the need for definitive surgical intervention. Timely surgical resection in both cases resulted in effective disease control, highlighting the importance of early consideration of operative management in patients with refractory aspergilloma.

The case report done by Ad Rian Chong, Khai Lip Ng, highlights that antifungal therapy alone has limited efficacy in aspergilloma, serving primarily as adjunctive or perioperative support rather than curative treatment. Similarly the case report done by Parker K.L, Zervos M.D et al demonstrated that video-assisted thoracoscopic surgery (VATS) lobectomy, when feasible, offers outcomes comparable to open thoracotomy with reduced postoperative pain, shorter hospital stay, and lower morbidity[9]. In contrast to earlier studies that reported a high incidence of postoperative complications such as prolonged air leakage and empyema, the present case demonstrated a relatively uncomplicated recovery. The patient experienced only a transient air leak and partial lung collapse, both of which resolved successfully with conservative management, without the need for additional surgical intervention. Although comorbid conditions such as diabetes mellitus and hypertension are known to increase perioperative and postoperative risks, as observed in previously published reports, their presence in this patient did not adversely affect the outcome. This favorable result can be attributed to meticulous preoperative optimization, close perioperative monitoring, and the use of minimally invasive surgical techniques. Furthermore, the application of a video-assisted thoracoscopic surgery (VATS) approach minimized surgical trauma, reduced postoperative pain, and facilitated early recovery. Overall, this case supports existing evidence that early surgical intervention using minimally invasive techniques is both safe and effective in patients with symptomatic and localized pulmonary aspergilloma. It also highlights the importance of individualized patient assessment and comprehensive perioperative care in achieving optimal clinical outcomes.

CONCLUSION

This case highlights that pulmonary aspergilloma should be strongly suspected in patients presenting with hemoptysis and cavitary lung lesions, even in the absence of prior tuberculosis. While medical therapy plays a supportive role, surgical resection remains the definitive treatment for symptomatic and localized disease. Minimally invasive techniques such as VATS lobectomy provide excellent clinical outcomes with acceptable complication rates, even in patients with comorbid conditions like diabetes and hypertension. Early diagnosis, appropriate patient selection, and timely surgical management are crucial in preventing life-threatening hemoptysis and ensuring favorable prognosis in pulmonary aspergilloma[10, 11].

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