Case Report

Haemoptysis after Four Years of Lobectomy for Aspergilloma

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ABSTRACT

We present a case of a 26-year-old male who underwent lobectomy for life-threatening haemoptysis due to aspergilloma in an old tuberculosis left upper lobe cavity who presented with recurrence of haemoptysis four years after the surgery. Fibreoptic bronchoscopy revealed *Aspergillus* colonisation in the ectatic residual bronchus which is an uncommon complication of lobectomy. The patient was successfully managed with antifungal agents.
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Key words: Aspergilloma, Lobectomy, Haemoptysis.

INTRODUCTION

Lobectomy is commonly performed for symptomatic aspergillomas residing in post-tuberculosis residual cavities. Potential complications of this surgical procedure include bleeding, residual pleural space, bronchopleural fistula, respiratory insufficiency and persistent air leakage etc. We report a case with an unusual complication of lobectomy, namely *Aspergillus* colonisation in the ectatic residual bronchus. *To the best of our knowledge, such a complication has seldom been reported in the literature.*

CASE REPORT

A 26-year-old male presented with a two-day history of bouts of haemoptysis. The patient coughed out 50-100 mL of fresh blood, 4-5 times per day interspersed with blood streaking sputum in between episodes. There was no preceding history of cough, fever, chest pain, anorexia or weight loss in the recent past. The patient gave a history of having undergone left upper lobectomy four years back for haemoptysis due to aspergilloma in an old tuberculosis (TB) left upper lobe cavity. Subsequently, he remained asymptomatic till the present episode of illness.

On examination, patient was anxious, manifested tachycardia (heart rate 124 beats per minute); blood pressure was 110/76 mmHg. Rest of the general physical examination was normal. Respiratory system examination revealed a hyperresonant area of percussion in left infraclavicular region with bronchial breathing and diminished breath sounds in the same area. Chest radiograph (Figure 1) revealed a residual cavity with surrounding area of fibrotic changes in the left upper zone. Conservative management was initiated in the form of volume replacement, intravenous haemostatic agents, cough suppressants etc.

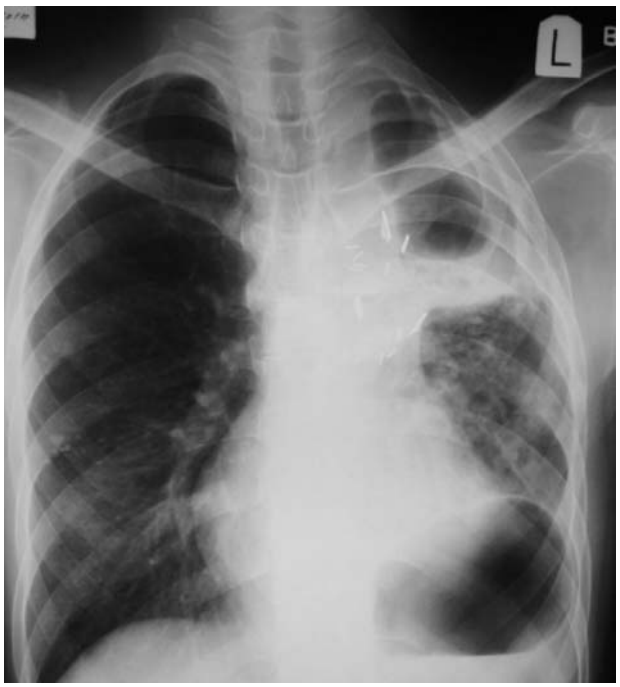

Figure 1. Chest radiograph (postero-anterior view) showing residual pleural space following left upper lobectomy; staples are also visualised. Elevation of left hemidiaphragm probably consequent to lung volume reduction can also be seen.

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Fibreoptic bronchoscopy (FOB) was done to localise site of haemoptysis which showed a dilated left upper lobe bronchus smeared with blackish material and granulation tissue over the bronchial stump (Figure 2A). This clinical scenario did not seem appropriate for endobronchial therapy. A tentative diagnosis of fungal colonisation with invasion of bronchial stump was considered to be the cause of recurrence of haemoptysis. Bronchoalvelolar lavage (BAL) was performed and the BAL fluid was tested for TB and fungal infections by smear and culture examination. Scrapings were obtained from the blackish material present over the bronchial wall and were also submitted for smear and fungal culture examination. Since the haemoptysis was persisting, bronchial artery angiography was attempted; however, a leaking bronchial artery could not be localised. Haemoptysis continued to persist inspite of three days of conservative management.

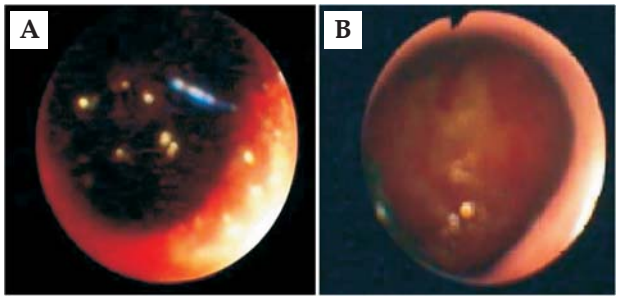

Figure 2. Bronchoscpic image of left upper lobe residual dilated bronchus before (A) and after (B) antifungal treatment.

On clinical suspicion of invasive aspergillosis, the patient was empirically started on intravenous amphoterecin B (1 mg/kg/day) and haemoptysis stopped on the third day after institution of this therapy. Amphoterecin B therapy was continued for 14 days. BAL fluid smear examination was negative for acid-fast bacilli (AFB) and fungal elements. Bronchial scrapings revealed fungal hyphae on smear examination and BAL fluid fungal culture grew *Aspergillus niger* suggesting *Aspergillus* colonisation confirming the diagnosis of *Aspergillus* colonisation with possible angioinvasion. Bronchoscopy was repeated after 14 days of this therapy which revealed a complete clearance of blackish material and the granulation tissue (Figure 2B). Patient was discharged on oral itraconazole (200 mg per day) which he was advised to take for a minimum of six months. Follow-up at 1 and 3 months were uneventful; repeat bronchoscopy at three months did not show any evidence of fungal colonisation.

DISCUSSION

Aspergilloma in post-treatment residual TB cavities is a commonly encountered problem in the Indian subcontinent. A significant proportion of aspergillomas present with haemoptysis and need treatment. However, antifungal treatment has largely been reported to be unsuccessful.[1,2] Bronchial artery embolisation has also been reported to be yielding mixed results.[3] The definitive treatment for symptomatic aspergillomas remains surgery which may be segmentectomy or lobectomy. In a report[4] on surgical management of aspergillomas (n=67), haemoptysis (91%) was the most common indication for surgery and TB (80.6%) was the most frequent pre-existing disease. Bleeding, residual pleural space, bronchopleural fistulas, respiratory insufficiency and air leakage were the most common complications of surgery in their series.[4] Only 3 of the 67 patients suffered from recurrence of haemoptysis after surgery. In all of them haemoptysis was found to be secondary to the development of aspergilloma in the residual cavities present in the contralateral lung. In this series, there was no evidence of recurrence of *Aspergillus* infection in the ipsilateral lung in which resection was done earlier. However, in our case, the recurrence of haemoptysis was due to *Aspergillus* colonisation with possible angioinvasion in the ectatic residual bronchus.

Antifungal agents have consistently been proved to be unhelpful in the treatment of aspergilloma and *Aspergillus* colonisation. There is lack of evidence to show that aspergilloma is responsive to amphoterecin B.[1] Itraconazole also has been found to be ineffective against aspergilloma.[2] In our patient, the *Aspergillus* colonisation responded very well to amphoterecin B followed by itraconazole. The reason for this response to antifungal agents could be explained by the fact that while in case of aspergilloma, there is inadequate penetration of the drug in to a fibrosed space like a cavity. In our case there was no cavity but a dilated bronchus with *Aspergillus* colonisation into which amphoterecin B could perhaps have penetrated.[1] This case highlights the fact that re-growth of *Aspergillus* at the local site after lobectomy can cause recurrence of haemoptysis subsequently and this condition is likely to respond well to antifungal treatment.

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