

# A Case Report On Pulmonary Aspergilloma

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## Abstract

Pulmonary aspergilloma is the most common form of aspergillous pulmonary involvement, which has been found in preexisting cavities especially secondary to tuberculosis. Usual presentation is hemoptysis, with or without chronic cough, but may remain asymptomatic. In cases of massive hemoptysis, lobectomy may be required if the patients general condition is fit, as in our case. Intracavitary mobile mass is variable, but an important sign. CT scan is the choice of examination in defining the fungus ball particularly in fibrotic and distorted lung fields.

## INTRODUCTION

Presence of aspergilloma is the most common and recognized form of non-invasive aspergillous pulmonary involvement <sup>1</sup>. The aspergilloma (fungus ball) consists of masses of fungal mycelia, inflammatory cells, fibrin, mucus and tissue debris, usually developing in a preformed lung cavity. Although other fungi may cause the formation of fungus ball (eg. zygomycetes and fusarium), aspergillous spp (Esp. a. fumigatus) are by far the most common etiologic agents <sup>2</sup>.

The true incidence of aspergilloma is not yet known. Aspergilloma have been found in preexisting cavities formed secondary to tuberculosis, sarcoidosis, bronchiectasis, bronchial cysts and bullae, ankylosing spondylitis, neoplasm or pulmonary infarction <sup>3</sup>. Of these tuberculosis is the most frequently associated condition <sup>4</sup>.

## CASE REPORT

A 40 years-old-male smoker with the history of active pulmonary tuberculosis, treated by ATT, presented in out patient department in Tribhuvan University, Teaching Hospital with the complaints of chest pain and cough for 6 months. He had hemoptysis, which was recurrent and quite large in amount, twice in a month. He had no history of fever, breathlessness, and anorexia.

The general physical status of the patient was satisfactory. There was no tracheal shifting. There was increased resonance in the right supra and infraclavicular areas on percussion. On auscultation there was bronchial breath sounds in the same area with few crepitations. Patient was

mildly anaemic. The clinical examination of the rest of the system revealed no abnormality.

Biochemical tests showed the Hb level of 8 mg % rest of the parameters were within normal limits.

Sputum smear examination by gram and Ziel Neelson staining for AFB were negative. Sputum culture for pyogenic bacteria showed no growth.

Chest X-ray (Fig-1) showed a large thin walled cavity with a mobile intracavitary body in the right upper lobe. The right hilum was pulled up with few fibrotic bands adjacent to the lesion with tenting of the dome of the diaphragm. Rest of the lung fields was normal. Incidentally, deformity of the left shoulder girdle and upper left thoracic cage was seen.

These findings were further verified on CT (Fig. 2, 3, 4), which in addition better defined the segmental involvement.

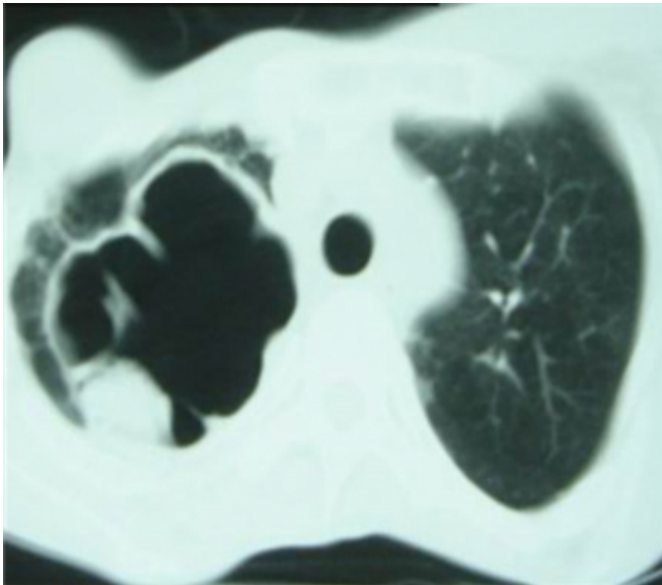
**Figure 1**

Figure 1: Plain radiograph of chest P/A view showing a cavity in the Rt. upper lobe containing an intracavitary body.



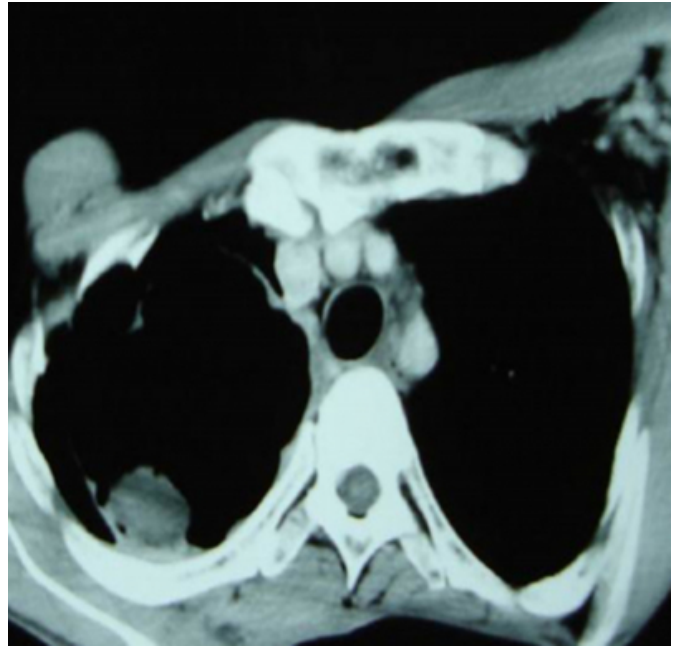
**Figure 2**

Figure 2: CT Scan of the chest ( lung window) showing a well defined cavity with an intracavitary body



**Figure 3**

Figure 3: CT scan chest (mediastinal window) showing mass in the Rt. upper lobe



**Figure 4**

Figure 4: CT scan chest (mediastinal window) showing no significant contrast enhancement after administration of the I.V contrast.



The patient subsequently underwent lobectomy (RUL) and the imaging findings were confirmed peroperatively. The specimen was sent for histopathological examination, which suggested it to be aspergilloma (sp. a. fumigatus). Hence the

diagnosis of healed intrapulmonary tuberculosis with intracavitary aspergilloma was confirmed.

### DISCUSSION

Aspergilloma represents a saprophytic growth of aspergillous that colonizes in the preformed cavities (commonly pulmonary tuberculosis)<sup>2, 5</sup>. They are usually located in the upper lobes of the lungs<sup>6</sup> and are mobile intracavitary masses as seen in our case.

The true incidence of the aspergilloma is not known yet. In a study of 544 patients with pulmonary cavities, secondary to tuberculosis, 11% had radiological evidence of aspergilloma<sup>7</sup>, but no estimate is available for Nepal till date.

Natural history of aspergilloma is variable. An aspergilloma may be asymptomatic<sup>8</sup>. The most common presenting symptom is haemoptysis, which is reported to be seen in 50-80% of patients<sup>7</sup>. Most patients will experience mild haemoptysis but massive and life threatening haemoptysis may occur particularly in patients with underlying PTB<sup>9</sup>. In a study done with 9 patients<sup>5</sup> all had complaints of haemoptysis and 5 presented with cough.

The characteristic radiographic picture of a pulmonary aspergilloma is of one or more round or ovoid intracavitary mass. A change of position of aspergilloma within the cavity with change in position of the patient is an interesting and a variable sign<sup>7, 10</sup>. This sign was also seen in our case. However this sign is nonspecific because other entities like haematoma, neoplasm, abscesses, hydatid cyst and wegeners granulomatosis also demonstrates this feature<sup>11, 12, 13</sup>.

CT scan is considered to be more accurate technique than conventional chest radiograph in defining fungus balls, particularly in fibrotic and distorted lung fields<sup>8, 10, 14</sup>.

In our case, Rt. upper lobectomy was done since the patient was having recurrent massive haemoptysis, which is the definitive treatment for aspergilloma in such cases<sup>15, 16</sup>. Other serological investigations to confirm the diagnosis of aspergilloma was not performed in this case as the patient

was a better candidate for surgery than for the conservative management.

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