

Piggyback Aspergillosis: Pulmonary Hydatid Cyst with *Aspergillus* Co-infection

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ABSTRACT

Aspergilloma is a saprophytic infection that colonizes pre-existing cavities in the lung. These cavities are caused by tuberculosis, bronchiectasis, lung cancer and other pulmonary diseases. Development of aspergilloma in the residual cavities after pulmonary hydatid cyst surgery is rarely described in terms of co-existence of the two conditions. Here we report co-infection of pulmonary hydatid cyst and aspergilloma in a 43-year-old male who had history of minor thalassemia and suffered from chest pain, dyspnea, non-productive cough for at least 5 months and hemoptysis for 20 days.

Keywords: Aspergillosis, hydatid cyst, pulmonary hydatid cyst

Aspergilloma infection consists of a mass of fungal hyphae, inflammatory cells, fibrin, mucus and tissue debris and can colonize lung cavities due to underlying diseases such as tuberculosis, sarcoidosis, bronchiectasis, cavitary lung cancer, neoplasms and bronchial cysts.^{1,2} Active invasion and proliferation of fungi in the laminated ectocyst or sometimes the pericyst of the hydatid is very unusual.

CASE REPORT

A 43-year-old male presented to the Pulmonary Medicine OPD with nonspecific complaints of mild weakness, cough, dyspnea, hemoptysis and chest pain for last 5 months. There was no history of fever or night sweats. He had visited local doctors. He got no relief even after a course of antibiotics. On radiological examination, X-ray chest showed a large cavitary lesion involving left lung. Sputum examination for acid-fast bacilli did not reveal any

bacilli and GeneXpert evaluation for tuberculosis too was negative. Computed tomography (CT) chest showed a large cavitary lesion (5 × 6 × 6 cm) involving left lower lobe of lung (Fig. 1). A diagnosis of hydatid cyst was suggested on radiology.

The patient underwent surgical excision of the cyst after a course of antihelminthic treatment. Grossly, a grey-white already punctured cyst was received. When cut open, there was a foci of dirty black soft tissue and few daughter cysts (Fig. 2).

On histopathological examination, the section revealed lamellated hyaline acellular ectocyst of hydatid cyst (Fig. 3). There were collections of acute angle branching septate hyphae along with inflammatory cells, fibrin, mucus and tissue debris, conforming to morphology of *Aspergillus* (Fig. 4). Thus, a final diagnosis of Piggyback aspergillosis on pulmonary hydatid cyst was made. Itraconazole 100 mg/day was given for 3 months. The patient



Figure 1. CT chest showing a large cavitary lesion (white arrow) in left lower lobe of lung.

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Figure 2. Grey-white already punctured cyst with foci of dirty black soft tissue (*gray arrows*) and few daughter cysts (*black arrows*).

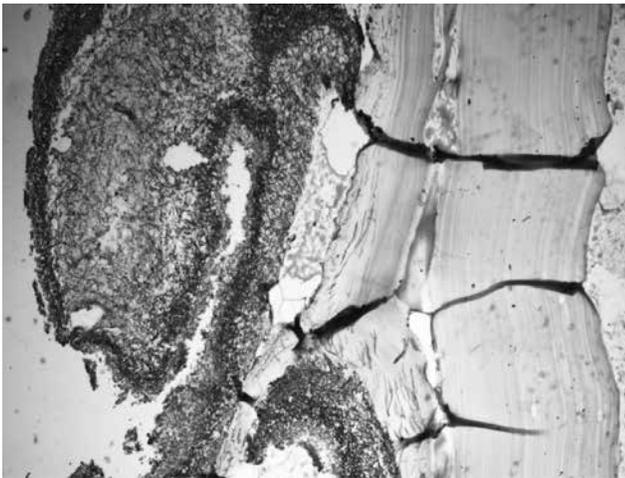


Figure 3. Lamellated hyaline acellular ectocyst of hydatid cyst with ball of *Aspergillus* attached (scanner view).

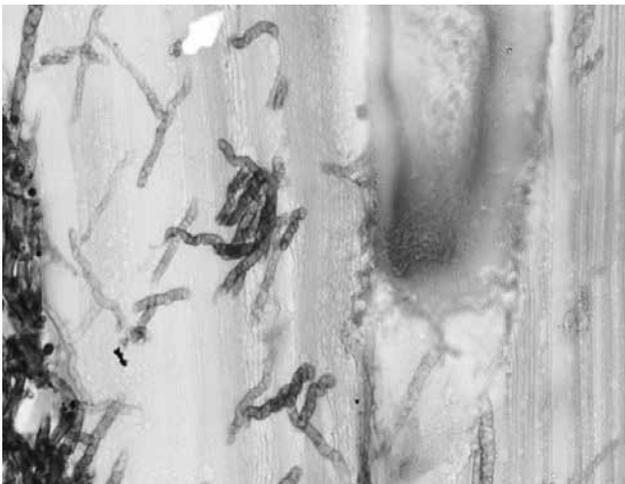


Figure 4. Acute angle branching septate hyphae along with fibrin, mucus and tissue debris (100x).

remained asymptomatic with normal radiological control after more than 9 months.

DISCUSSION

Pulmonary aspergilloma is a saprophytic infection which occurs as a colonizer of pre-existing pulmonary cavity lesions of any etiology such as sequelae tuberculosis, sarcoidosis, bronchiectasis, cavitary neoplasia and lung abscess, producing a fungus ball or a mycetoma.¹⁻³

Radiological diagnosis is made upon visualizing a well-defined heterogeneous density within a pre-formed cyst cavity, separated from the cyst wall by an air crescent. Aspergillosis and echinococcosis share the same symptoms and crescent signs on chest CT, making it difficult to distinguish.⁴ CT usually reveals globules of gas within the hyphal ball, which may be loose or attached to the cavity wall by granulation tissue.⁵

Hydatid cysts containing fungi resembling *Aspergillus* are extremely rare. At present, such cases have been uncommonly reported. From 100 archival cases of hydatid disease, Koçer et al found two cases of simultaneous *Aspergillus* infection, and such infections were seen only in the lung.⁶ The reason for such association still remains unclear.

The surgical treatment of lung hydatid cyst aims to avoid lung parenchyma resection. This surgery is based on the removal of the cyst membrane (cystectomy or pericystectomy), the closure of bronchial fistulas and eventually obliteration of the residual cavity with sutures (the capitonnage).⁷

Finally, aggressive surgical treatment with lung resection and antifungal therapy for pulmonary aspergilloma in residual hydatid cavities are safe and effective treatment options, and can achieve favorable outcomes.

CONCLUSION

As this co-infection is an incidental finding, a high-degree of suspicion is needed to predict the superimposed mycosis. Early diagnosis and treatment is important to prevent potential complications stemming from infection by these two pathogens.

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