

# Histoplasmosis with Addisonian Crisis: Call for Bird Control

Alan Shiun Yew Hu\*, Andy Shiun Fong Hu\*\*, Chang Hock Hu, FRCP\*\*\*

\*James Cook University, 14-88 McGregor Road, Smithfield, Cairns, Queensland 4878, Australia, \*\*Monash University Clinical School, Jeffrey Cheah School of Medicine and Health Sciences, No. 8, Jalan Masjid, Johor Bahru 80100, Malaysia, \*\*\*Hu's Specialist Clinic, 1B, Brooke Drive, 96000 Sibul, Sarawak, Malaysia

### SUMMARY

**We report a case of disseminated histoplasmosis, initially diagnosed from gut nodule colonoscopically, along with evidence of lung disease. Subsequently he developed Addisonian crisis due to adrenal involvement. Lessons were learnt from the importance of detailed history-personal and social/family, as well as psychosocial aspects of illness. Public health measures to reduce bird dropping (and thus possibility of histoplasmosis) are discussed.**

### KEY WORDS:

*Histoplasmosis, Addisonian crisis, bird control*

### INTRODUCTION

Histoplasmosis is a disease caused by *Histoplasma capsulatum* fungus. There are two stages of its life cycles, a yeast phase followed by a filament phase. Symptoms vary markedly, affecting most commonly the lungs. In immunocompetent patients, the infection usually is self-limiting. The patients are asymptomatic or suffer mild flu like symptoms, with little sequelae.<sup>2,3</sup> Clinical disease manifests in one of four forms, acute and chronic respiratory disease, acute and chronic disseminated disease, which can be fatal, if left untreated.<sup>2</sup> Histoplasmosis is common among immunosuppressed group which include AIDS patients. In immunocompetent patients, the previous infections would result in partial protection against ill effects, if re-infected.<sup>2</sup>

*Histoplasma capsulatum* is found in soil, often associated with decaying bat guano or bird droppings. Disruption of dropping contaminated soil, which accumulated over time, can release infectious yeast phase spores which are aerosolized and inhaled and cause respiratory disease.<sup>2</sup>

### CASE REPORT

A 51 year old man presented to a clinic in Sibul, Sarawak with fever, nausea, vomiting, diarrhoea and epigastric pain for 4 days. He had cough with yellow sputum and loss of appetite. He had family and personal history of diabetes mellitus – managed by diet and supplements (Chinese traditional medicine, herbs and vitamins) only.

He had been previously investigated and a colonoscopy finding revealed a colonic nodule with the histopathology

reported as histoplasmosis. He also had CT chest showing features suggestive of pulmonary histoplasmosis with diffused lower zones fibro-nodular shadowing.

Previously, itraconazole was started but he defaulted due to despair and financial burden. He became depressed and had hallucinations. He had strong fear and wrong belief that he was punished by God for business dishonesty. Olanzapine was initiated subsequently then. But he was not compliant.

His life was in absolute upheaval. He was avoided by many, including his wife who had wanted to divorce him. In his sadness and loneliness, he chose to live alone on the third floor of his shop for three years. There were many thousands of birds and their droppings. But he refused to believe that they could be the cause of his illness.

On examination at admission, he was dehydrated. His blood pressure was 90/60, with pulse rate 120 per minute and temperature 38 degree Celsius. His epigastrium was tender. The rest of his examination was unremarkable.

Our provisional diagnosis was gastroenteritis and the differentials were dengue, malaria and typhoid. Quick blood tests of the above conditions were negative. Hyponatremia (sodium 112 (135-145) meq/L) and hyperkalemia (potassium 6.4 (3.5-5.1) meq/L) were noted. His renal function was affected with urea 75 (14-51) mg/dl and creatinine 2.21 (0.57-1.31) mg/dl. His liver profile showed no significant changes. His haematology results were: Haemoglobin 128 (140-170) g/L, total white cell 13.6 (4-11) x10<sup>9</sup>/L with Erythrocyte Sedimentation Rate 85 (<21) mm/h. His fasting blood level was 8 (3.9-5.5) mmol/L. Chest radiograph and ultrasound of abdomen were normal.

He required dopamine support for hypotension and rapid correction of electrolytes.

Further CT abdomen revealed bilateral adrenal size reduction. Blood for *histoplasma capsular precipitins* (APA00956) were positive.

Other blood tests including HIV, toxoplasma IgG antibodies, blood and urine cultures, were all negative.

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Corresponding Author: Chang Hock Hu, Hu's Specialist Clinic, 1B, Brooke Drive, Sibul, Sarawak 96000, Malaysia

Email: [chhu@live.com.my](mailto:chhu@live.com.my)

Itraconazole was continued, with hydrocortisone and fludrocortisone added as long term medications.

In conclusion, this patient had, over 5 years, histoplasmosis affecting initially gut, then lungs and finally adrenals as Addisonian crisis.

His disease progressed partly because of poor compliance, poor family and social support and ignorance/ disbelief of illness.

He needed life-long follow up and hormonal treatment as well as psychiatric follow up and support.

## DISCUSSION

Histoplasmosis is endemic in certain areas of North, Central, and South America, Africa and Asia. Its incidence in adults age older than 65 is 3.4 cases per 100,000 population for normal population in U.S.<sup>2</sup> In Latin America, where histoplasmosis is common, 30% of HIV/AIDS patients with histoplasmosis die from it.<sup>4</sup>

There are two distinct subspecies of *Histoplasma capsulatum*, *H. var capsulatum* in Australia and *H. duboisii*, which is unknown outside Africa. The filament form is common in cool, moist soil. Histoplasmosis is common where bat and bird droppings accumulate over time.<sup>2</sup>

The common sites of infection after lungs include skin, liver, adrenal, bone marrow and eyes. Diagnosis involves performing enzyme immunoassay on urine, serum cerebrospinal fluid and bronchoalveolar lavage fluid. Other tests include performing serum antibody tests, immunodiffusion, complement fixation, polymerase chain reaction and microscopy / culture.<sup>2</sup>

Characteristic histopathology of adrenal histoplasmosis includes demonstrating fungal elements in the glands. There may be localized mononuclear cells infiltrating developing granulomata with multinucleated giant cells. Often yeast is detected in areas of caseating necrosis.<sup>5</sup>

Adrenal involvement by histoplasmosis resulting in Addison crisis is uncommon.<sup>1</sup> Noppadol *et al* mentioned one study where adrenal involvement in only 12 out of 58 patients with histoplasmosis. None of them was in Addisonian crisis.<sup>5</sup>

For most histoplasmosis patients, the symptoms will resolve without medications. For those with moderate to severe acute pulmonary, chronic pulmonary, disseminated (including adrenal) and central nervous system histoplasmosis, the treatments include taking amphotericin B and itraconazole for 3 months to a year or longer.<sup>2</sup>

## BIRD CONTROL

There are thousands of birds roosting in tall trees, electric cables and telephone lines. They deposit droppings on the cool, shady soils under the trees and windowsills of shophouses.<sup>3</sup> Many shopkeepers induce the birds with music to roost. They are lured by the high returns of harvesting bird-nests which are a delicacy in China.

There are many discussions /debates of public health bird control by different professions and associations. We have highlighted the morbidities and mortality of fungal infections.<sup>3</sup> We advocate shorter trees with frequent trimming and banning densely populated area bird rearing.<sup>3</sup>

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