

# Peniophora Bicornis in Human Lung Found on Bronchoalveolar Lavage Laboratory Sequencing: A Case Report

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## Abstract

Peniophora Bicornis is a rare finding in human lung, We present a 62 year old female who had 2 small non calcified nodules on her left with calcified lymph nodes in the right hilar region and right paratracheal region found on CT scan which lead us to do bronchoscopy which revealed a white mold in the right middle lobe of the lung and *Peniophora bicornis* on lab sequencing.

**Keywords:** *Peniophora Bicornis*; Coronary Artery Disease; *Peniophora* Genus; Hypertension

## Introduction

*Peniophora bicornis* is a fungus belonging to the *Peniophora* genus [5]. *Peniophora* is one of the oldest corticioid fungi that cause white rot on trees and plants. More specifically, it typically grows on dead branches [6]. Despite being one of the oldest fungi, there is limited information about how the *Peniophora* genus can affect human health. This is the second known case of *Peniophora* infection in the human lung. In contrast to the first case, the patient denied environmental exposures. Despite having an infection from *Peniophora bicornis*, the patient's lung function test with spirometry was normal, and she denied fever and other respiratory symptoms.

## Case Presentation

A 62-year-old female with a history of non-obstructive coronary artery disease, primary hypertension, chronic obstructive pulmonary disease, pulmonary candidiasis, and a 26-pack-year smoking history reported to the cardiology clinic for a follow-up for chest pain and a pre-operative cardiovascular examination for an upcoming left hip surgery. At the time of the visit, she had no shortness of breath, dizziness, or fatigue. A CTA coronary scan was performed which revealed 2 small non-calcified nodules in the left lung at which point she was referred to us.

Upon examination, the patient denied shortness of breath, fatigue, chills, or fever. The patient was hemodynamically stable (Table 1) and pulmonary function tests were normal (Table 2). Her family history is notable for malignant neoplastic disease in her mother and unspecified lung diseases in her father and sister. The laboratory workup is shown below (Table 3).

Table 1

Vital Sign	Patient Findings
Temperature	97.1 F
Heart Rate	71 bpm
Blood Pressure	112/71
Respiratory Rate	18 breaths/min
Oxygen Saturation	100%

Table 2

Pulmonary Function Test	Patient Findings
FEV1	113% predicted
FVC	111%
FEV1/FVC	100%

Table 3

Laboratory Tests	Lab Results	Normal Range
WBC	7.10	4.00 - 11.00 $\times 10^3/\mu\text{L}$
RBC	4.44	4.00- 6.32 $\times 10^6/\mu\text{L}$
Hemoglobin	12.7	12.0-16.0 g/dL
Hematocrit	38.5	37.0-47.0%
Neutrophils Relative	51.7	40.0- 74.0%

Neutrophils Absolute	3.7	1.6 - 8.1 x 10 <sup>3</sup> /uL
Lymphocytes Relative	35.2	19.0- 48.0%
Lymphocytes Absolute	2.5	0.8-5.3 x 10 <sup>3</sup> /uL
Monocytes Relative	8.0	0.8-5.3 x 10 <sup>3</sup> /uL
Monocytes Absolute	0.6	0.1- 1.0 x 10 <sup>3</sup> /uL
Eosinophils Relative	4.1	0.0- 7.0%
Eosinophils Absolute	0.29	0.00- 0.80 x 10 <sup>3</sup> /uL
Basophils Relative	0.70	0.00- 1.50%
Basophils Absolute	0.05	0.00- 0.20 x 10 <sup>3</sup> /uL

A CT scan was performed which revealed calcified lymph nodes in the right hilar region and right paratracheal region with the largest measuring 13mm on short axis diameter. A bronchoalveolar lavage revealed a white mold in the right middle lobe of the lung. Lab sequencing was performed and the mold was identified as *Peniophora bicornis*.

## Discussion

*Peniophora bicornis* is a plant fungus that causes white rot on trees [3]. Members of the *Peniophora* genus are located all over the world with high concentrations on the east coast of the United States of America and in Europe [3]. Some members of *Peniophora* have been known to produce astaxanthin, a xanthophyll carotenoid that has antioxidant properties [2]. Astaxanthin has been seen to have positive effects against inflammation, diabetes, cardiovascular disease, and anti-cancer properties but it is not clear if astaxanthin is produced by *P. bicornis* [2]. *Peniophora* is not com-

monly associated with infection in humans [4]. The first recorded case of a *Peniophora* lung infection was discovered in a farmer who had possible exposure to fungi and multiple comorbidities [4]. Our patient, though absent of any known exposure to fungi, was known to have pulmonary candidiasis, an infection commonly associated with a weakened immune system [1]. This along with her history of coronary artery disease, hypertension, COPD and a long-standing smoking history could have made her more susceptible to what could be an opportunistic fungal infection.

## Conclusion

The Identification of *Peniophora bicornis* in human lung on bronchoalveolar lavage strengthens the need for dedicated fungal study including laboratory sequencing when the etiology is unclear. The literature regarding pathogenesis of *Peniophora bicornis* and its implication is scarce and we recommend further study into the diagnostic, clinical implication and treatment of *Peniophora bicornis*.

## References

1. Benson JC, Parakininkas D, Rice TB (2011) Pneumonitis and Interstitial Disease. *Pediatric Critical Care (Fourth Edition)*, 609-31.
2. Demirel, Pinar Buket, Bilge Guvenc Tuna (2021) "Anti-cancer properties of astaxanthin: A molecule of great promise." *Global Perspectives on Astaxanthin*, 427-45.
3. "Genus Peniophora." iNaturalist, [www.inaturalist.org/taxa/55879-Peniophora](http://www.inaturalist.org/taxa/55879-Peniophora).
4. Miranda L, et al. (2018) "Moldy Hay and the Cirrhotic Farmer: The First Case of Peniophora Lung Infection." *American Thoracic Society Journals*, A5467.
5. Araujo J, et al. (2021) "Diversity and Evolution of Entomocorticium (Russulales, Peniophoraceae), a Genus of Bark Beetle Mutualists Derived from Free-Living, Wood Rotting Peniophora" *Journal of Fungi*, 7: 1043.
6. Xu YL, Tian Y, He Sh H. (2023) "Taxonomy and Phylogeny of Peniophora Sensu Lato (Russulales, Basidiomycota)" *Journal of Fungi*, 9: 93.

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