

CASE REPORT

Legionella micdadei Aquaticum Infection: a Case Report and Literature Review

Quwen Li^{1, 2, 3, #}, Qingquan Chen^{3, #}, Xiao Ting Lv⁴, Chengfei Zhao⁵, Yue-li Guo⁶, Xiangqun Fan⁷

[#] These authors contributed equally to this manuscript

¹ Fujian Provincial Key Laboratory of Zoonosis Research, Fujian Center for Disease Control and Prevention, Fuzhou, China

² The Public Health Professional Teaching Practice Base of Fujian Medical University, Fuzhou, China

³ Department of Laboratory Medicine, Fujian Medical University, Fuzhou, Fujian, Fuzhou China

⁴ Respiratory Disease Research Laboratory; Departments of Respiration, The First Affiliated Hospital, Fujian Medical University, Fuzhou, China

⁵ Department of Pharmacy, Pharmacy and Medical Technology School, Putian University, Putian, China

⁶ Department of Medical Technology Zhangzhou Health Vocational College, Collaborative Innovation Center for Translation Medical Testing and Application Technology, Zhangzhou, China

⁷ Prenatal Diagnosis Center of Fujian Provincial Maternity and Children Hospital, Affiliated Hospital of Fujian Medical University, Fuzhou, Fujian, China

SUMMARY

Background: The goal of the study was to analyze the clinical characteristics of *Legionella* cases caused by *Legionella micdadei* and explore the diagnosis and treatment.

Methods: The pathogen was identified by routine isolation and culture, biochemical identification, serum agglutination test, mass spectrometry identification, and routine PCR. Combined with the related literature review, the clinical diagnosis and treatment of *Legionella micdadei* were analyzed.

Results: The patient suffered from pulmonary infection caused by *Legionella micdadei*. After treatment with moxifloxacin for 2 weeks, the body temperature dropped and the shadow of the lung was completely absorbed after 2 months. Combined with literature analysis, 8 cases of *Legionella micetidis*, including 7 males and 1 female, aged from 27 to 57 years old, 6 cases with basic diseases, which were treated with azithromycin, erythromycin or levofloxacin, and all of them achieved good therapeutic effect.

Conclusions: The detection of *Legionella* should be strengthened in patients with pneumonia whose symptoms have no obvious improvement after antibiotic treatment. Azithromycin, erythromycin or levofloxacin are effective in the treatment of *Legionella* spp. infection.

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Correspondence:

Yue-li Guo

Department of Medical Technology

Zhangzhou Health Vocational College

Collaborative Innovation Center for

Translation Medical Testing and Application Technology

Zhangzhou

China

Email: 89637655@qq.com

Xiangqun Fan

Prenatal Diagnosis Center of Fujian Provincial

Maternity and Children Hospital

Fujian Medical University

Fuzhou, Fujian, 350004

China

Email: 249116180@qq.com

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Supplementary Tables and Figures

Table S1. Literature review of cases of *L. micdadei*.

Reference	Gender	Age	Basic diseases	Clinical manifestation	Imaging features	Diagnostic method	Treatment and prognosis
This study	male	47	nephrotic syndrome	cough, fever	bilateral lung texture increased significantly, patchy, ground glass like and banded density increased shadows were seen in both lungs, and a small amount of fluid was accumulated in bilateral pleural cavity	culture	Treated with Moxifloxacin for 2 weeks. The body temperature was normal after 2 weeks, and the lung shadow was completely absorbed after 2 months.
[6]	male	51	myeloma	fever, cough, shortness of breath, night sweats	Chest CT showed a cavity in the left upper lobe	culture	Azithromycin for 6-7 days. The symptoms began to improve and eventually recovered.
[7]	male	27	non-basic diseases	fever, cough, bloody sputum, chest pain	Chest X-ray showed patchy shadow in the right middle and upper lung and dorsal segment of the left lower lobe	ELISA for <i>L. micdadei</i> antibody	Intravenous drip 1.2 g/d Erythromycin and 0.4 g/d Ciprofloxacin after 4 weeks, orally Roxithromycin 0.3 g/d. The body temperature was normal in 2 weeks, chest X-ray showed cavity closed in 1 month, and lung shadow absorbed in 2 months.
[7]	male	48	non-basic diseases	fever, cough and sputum	Chest X-ray showed a dense patchy shadow in the left upper lung and a cavity in the posterior segment	ELISA for <i>L. micdadei</i> antibody	Intravenous drip 1.5 g/d Erythromycin after 4 weeks, orally Roxithromycin 0.3 g/d. After 4 days, the body temperature was normal, chest X-ray examination showed that the cavity was closed at 1 month, and the shadow was absorbed at 2 months.
[8]	male	48	HIV related nephropathy	fever, chills, cough and chest pain	Chest CT showed a large shadow in the right lower lung and a central necrotic low-density area	culture	Ceftriaxone and erythromycin were given intravenously, and levofloxacin was given intravenously on the 10th day after diagnosis. After 5 days, the fever subsided and the tube was placed for drainage. Levofloxacin was used for 6 weeks. The chest X-ray showed that the right lung abscess completely subsided.
[9]	male	28	liver transplantation	dry cough, chest pain, night sweats	Chest CT scan showed dense shadow in the left upper lung field, cavity and abscess formation in the dense shadow of the left upper lung	culture	Ciprofloxacin was given for 3 weeks after diagnosis. The symptoms were relieved and there was no recurrence after 3 months of follow-up
[10]	male	34	HIV infection	fatigue, cough, fever, left chest pain	Chest X-ray showed infiltration in the left lung	culture	After the diagnosis, erythromycin, rifampicin and ciprofloxacin were given, and the pus was drained by CT guided puncture. After 10 days of drainage, the patient was discharged from the hospital. 8 weeks later, the lesion was reexamined as cord streak shadow.
[11]	female	57	Chronic inflammation and fibrosis of liver	fever, dry cough, backache	Chest X-ray examination showed left pleural effusion and left upper lobe abscess	culture	After intravenous injection of erythromycin, it improved. Patient discharged after 3 weeks, and recovered well after a year of follow-up.