

Clinical Features of 19 Cases of Psittacosis Pneumonia in Hangzhou, Southern China

Ge Li

Affiliated Hospital of Hangzhou Normal University

Wanting Huang

Hangzhou Normal University

Jing Liu

Affiliated Hospital of Hangzhou Normal University

Yanting Bao

Affiliated Hospital of Hangzhou Normal University

Xiang Zhou

Affiliated Hospital of Hangzhou Normal University

Binbin Zhang

Affiliated Hospital of Hangzhou Normal University

Gongying Chen

liuxingli0329@163.com

Affiliated Hospital of Hangzhou Normal University

Research Article

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Abstract

Background

Chlamydia psittaci (*C. psittaci*) pneumonia remains underrecognized in clinical practice because of its nonspecific clinical manifestations and the limitations of conventional microbiological tests. Its clinical phenotypes, metagenomic next-generation sequencing (mNGS)-based diagnostic features, antimicrobial treatment patterns, and clinical outcomes have not been fully characterized in southern China. This retrospective study aimed to describe the clinical features, mNGS findings, antimicrobial regimens, and outcomes of patients with *C. psittaci* pneumonia.

Methods

We retrospectively reviewed 19 patients with mNGS-confirmed *C. psittaci* pneumonia admitted to the Affiliated Hospital of Hangzhou Normal University between June 2021 and February 2024.

Results

The study included 19 patients with *C. psittaci* pneumonia. The main clinical manifestations were high-grade fever (89.5%), dry cough with fatigue (57.9%), myalgia (42.1%), and chills (31.6%). Five patients developed severe pneumonia with acute respiratory distress syndrome (ARDS), altered mental status, or both. Avian or poultry exposure was reported in 13 patients, whereas six had no clear exposure history. Laboratory tests showed markedly elevated C-reactive protein (CRP) levels in all patients, with normal or increased leukocyte counts, neutrophil percentages, and procalcitonin (PCT) levels. Chest thin-section computed tomography (CT) showed unilateral lobar consolidation in 14 patients and bilateral consolidation in five. mNGS detected *C. psittaci* in bronchoalveolar lavage fluid (BALF) from 16 patients and peripheral blood from three patients. Antimicrobial therapy included doxycycline monotherapy in four patients, omadacycline monotherapy in six, and moxifloxacin-based therapy in nine. All patients achieved defervescence, clinical recovery, and hospital discharge without complications.

Conclusion

C. psittaci pneumonia is clinically characterized by fever, dry cough, and myalgia, and a history of avian or poultry contact serves as a critical diagnostic clue, particularly given the non-specificity of its clinical, laboratory, and radiological features. mNGS of BALF or peripheral blood may facilitate rapid pathogen identification. Doxycycline and omadacycline were associated with favorable outcomes in this case series, although larger studies are needed to assess comparative efficacy.

Introduction

Chlamydia psittaci is an obligate intracellular Gram-negative bacterium that induces human pulmonary infections via inhalation or ingestion of aerosols, fecal matter, or secretions from infected avian species and poultry. Its incubation period ranges from 1 to 2 weeks, and may extend up to 45 days in rare cases. Previous studies have reported that approximately 27% of infected patients have no history of direct avian or poultry contact [1], thus posing a major challenge to clinical diagnosis. In clinical practice, *C. psittaci* pneumonia is frequently overlooked due to inadequate clinical awareness and atypical clinical manifestations [2–4]. Furthermore, the low sensitivity and technical complexity of *C. psittaci* culture, combined with the limitations of traditional diagnostic methods, make routine laboratory diagnosis extremely challenging in most medical institutions worldwide.

Metagenomic next-generation sequencing (mNGS) has emerged as a powerful tool for the diagnosis of infectious diseases [5], enabling rapid detection of rare or difficult-to-culture pathogens such as *C. psittaci* and thus reducing the time to definitive diagnosis. However, clinical evidence regarding mNGS-based diagnosis and the efficacy of different antimicrobial agents for *C. psittaci* pneumonia in southern China remains scarce, and the clinical characteristics of this disease in this region have not been fully elucidated.

This retrospective study analyzed the clinical data, diagnostic approaches, and therapeutic outcomes of 19 patients with *C. psittaci* pneumonia admitted to the Affiliated Hospital of Hangzhou Normal University between June 2021 and February 2024. The primary aim was to elucidate the clinical characteristics and risk factors of *C. psittaci* pneumonia, and to evaluate the diagnostic value of mNGS and the efficacy of different antimicrobial agents. Our findings are expected to fill the existing research gap and provide clinical evidence for the early identification and standardized management of this disease in southern China.

Methodology

Study Subjects

Nineteen patients admitted to the Affiliated Hospital of Hangzhou Normal University and diagnosed with *C. psittaci* pneumonia via mNGS between June 2021 and February 2024 were recruited for this retrospective study. The inclusion criteria were: (1) meeting the diagnostic criteria for community-acquired pneumonia (CAP) proposed by the Infectious Diseases Society of America/American Thoracic Society (IDSA/ATS) [6]; (2) positive detection of *Chlamydia psittaci* nucleic acid sequences by mNGS in BALF or peripheral blood; (3) no other pathogenic microorganisms identified by routine microbiological tests (blood culture, sputum culture, and BALF culture).

Study Procedures

A retrospective review of medical records was performed to collect the following data from enrolled patients: demographic characteristics, clinical manifestations, avian/poultry exposure history, laboratory and imaging findings, length of hospital stay, antimicrobial therapy regimens, and clinical outcomes. The study protocol was approved by the Ethics Committee of the Affiliated Hospital of Hangzhou Normal University (Approval No. 2023(E2)-KS-029). All clinical data were anonymized before analysis to protect patient privacy, and the study was conducted in accordance with the Declaration of Helsinki (2013 revision).

mNGS Detection Procedures

Bronchoscopy was performed in clinically eligible patients in accordance with the Chinese Expert Consensus on Pathogen Detection in Bronchoalveolar Lavage Fluid for Pulmonary Infectious Diseases (2017 Edition) [7]. Bronchoalveolar lavage was conducted in the diseased lung segments identified by chest CT. A 5-mL aliquot of BALF was collected and immediately transported to the clinical microbiology laboratory for mNGS testing using a high-throughput sequencing platform. For patients who could not undergo bronchoscopy because of clinical conditions or personal reasons, 5 mL of peripheral venous blood was collected for mNGS analysis. The mNGS detection process included nucleic acid extraction, library construction, high-throughput sequencing, and bioinformatic analysis. Only samples with detectable *C. psittaci* nucleic acid sequences (≥ 10 reads) were defined as positive.

Clinical Outcome Definition

Clinical resolution was defined as resolution of clinical symptoms (fever, cough, dyspnea, etc.), normalization of inflammatory markers (CRP, PCT, etc.), and radiological improvement of pulmonary lesions on chest CT. Severe **C. psittaci** pneumonia was defined based on the severe community-acquired pneumonia (CAP) criteria proposed by the IDSA/ATS [6], including respiratory failure, altered mental status, or multiple organ dysfunction syndrome (MODS).

Results

Basic Information and Clinical Manifestations

Among the 19 patients with *C. psittaci* pneumonia, 12 were male and seven were female, with a median age of 62 years (range, 36–78 years). Seventeen patients presented with high-grade fever, with peak body temperature ranging from 39.0 to 40.3°C, and most patients had non-productive cough, malaise, and myalgia. Notably, five patients developed severe manifestations, including respiratory distress ($n = 4$) and neurological dysfunction ($n = 2$). Regarding exposure history, nine patients reported a history of poultry exposure (including domestic breeding of ducks/chickens or frequent visits to live poultry markets), four had a history of avian exposure (one with parrot contact), and six had an unclear exposure history (Table 1).

Table 1
Clinical data of 19 patients with Chlamydia psittaci pneumonia.

Case No.	Age (y)	Sex	Sample	Exposure history	Severity (Y/N)	Symptoms	Inflammatory markers	Chest CT findings	Hospital stay (days)	Antimicrobial regimens
1	66	M	BALF	Poultry	N	Fever (39.8°C), chills, muscle aches, cough, fatigue	WBC: 13.23×10 ⁹ /L NE%: 79.6% CRP: 128.8 mg/L PCT: <0.1 ng/mL	Inflammation of right upper lobe	14	Piperacillin-tazobactam+ Moxifloxacin→Moxifloxacin
2	54	M	BALF	Unknown	N	Fever (40°C), dry cough, chills, muscle aches	WBC: 9.31×10 ⁹ /L NE%: 80% CRP: 93.4 mg/L PCT: 1.28 ng/mL	Inflammation in the left upper lobe and slight exudation in the lower lobes of both lungs	18	Meropenem+moxifloxacin→Piperacillin-tazobactam+moxifloxacin
3	50	M	BALF	Unknown	N	Fever (40°C), fatigue, anorexia, cough, expectoration, chills	WBC: 3.31×10 ⁹ /L NE%: 65.9% CRP: 94.82 mg/L PCT: <0.1 ng/mL	Inflammation of left lower lobe	9	Cefoperazone-Sulbactam→moxifloxacin
4	36	F	BALF	Ducks	N	Fever (40.1°C), chills, chest pain, muscle aches, fatigue	WBC: 9.97×10 ⁹ /L NE%: 82.6% CRP: 41.39 mg/L PCT: <0.1 ng/mL	Left lung inflammation; Left pleural effusion	12	Piperacillin-tazobactam →moxifloxacin
5	58	M	Blood	Poultry	Y	Fever (40.3°C), fatigue, dyspnea, chills, muscle aches	WBC: 7.69×10 ⁹ /L NE%: 91.8% CRP: 297.4 mg/L PCT: 7.08 ng/mL	Left lung inflammation; right pleural effusion	19	Biapenem+linezolid→ Piperacillin-tazobactam+ Doxycycline
6	53	F	BALF	Unknown	N	Fever (39.1°C), fatigue, nausea, cough, chills	WBC: 8.52×10 ⁹ /L NE%: 77.6% CRP: 61.77 mg/L PCT: <0.1 ng/mL	Inflammation of right lower lobe	21	Biapenem+moxifloxacin+ oseltamivir→Moxifloxacin
7	57	M	BALF	Poultry	N	Fever (39.8°C), chills, cough, muscle aches	WBC: 7.39×10 ⁹ /L NE%: 80% CRP: 127.7 mg/L PCT: <0.1 ng/mL	Inflammation of left lower lobe	21	Biapenem→Piperacillin-tazobactam+moxifloxacin

Case No.	Age (y)	Sex	Sample	Exposure history	Severity (Y/N)	Symptoms	Inflammatory markers	Chest CT findings	Hospital stay (days)	Antimicrobial regimens
8	69	M	BALF	Poultry	Y	Fever (39°C), dyspnea, cough, chills, fatigue	WBC: 12.88×10 ⁹ /L NE%: 96.3% CRP: 206.35 mg/L PCT: 2.71 ng/mL	Inflammation of right lower lobe	27	Imipenem+moxifloxacin→ Ceftazidime+moxifloxacin
9	78	F	BALF	parrot	Y	Fever (39.8°C), chest tightness, shortness of breath, apathy	WBC: 9.1×10 ⁹ /L NE%: 94.8% CRP :229.98 mg/L PCT: 0.5 ng/mL	Bilateral pulmonary inflammation, massive consolidation of the right lung, and right-sided pleural effusion	26	Imipenem+moxifloxacin→ Doxycycline+moxifloxacin
10	77	M	BALF	Poultry	Y	Fever (40°C), delirium, disturbance of consciousness	WBC: 6.3×10 ⁹ /L NE%: 95.8% CRP: 258 mg/L PCT: 2.24 ng/mL	Pneumonia, pleural effusion	26	Imipenem→Doxycycline+ Piperacillin-tazobactam
11	72	M	Blood	Chicken	N	Fever (39.2°C), cough, sore throat, muscle aches, chills, fatigue	WBC: 10.3×10 ⁹ /L NE%: 86% CRP: 268.5 mg/L PCT: <0.1 ng/mL	Bilateral lung pneumonia, bilateral pleural effusion	18	Biapenem→Doxycycline+ Biapenem
12	76	M	BALF	Chicken	N	Fever (39.2°C), headache	WBC: 3.55×10 ⁹ /L NE%: 73.2% CRP: 107.64 mg/L PCT: <0.1 ng/mL	Inflammation of the left lower lung lobe	9	Piperacillin-tazobactam→ Omad
13	69	M	BALF	Poultry	Y	Fever (39.1°C), dyspnea, cough	WBC: 3.99×10 ⁹ /L NE%: 89.9% CRP: 204.6 mg/L PCT: 0.51 ng/mL	Bilateral pulmonary inflammation with left-sided pleural effusion	16	Piperacillin-Tazobactam +Levofloxacin→Omadacycline
14	70	M	BALF	Poultry	N	Fever (38.8°C)	WBC: 5.87×10 ⁹ /L NE%: 82.4% CRP: 71.91 mg/L PCT: <0.1 ng/mL	Inflammation of the left lower lung lobe	7	Levofloxacin+ Cefoperazone-Sul → Omadacycline
15	59	F	BALF	Unknown	N	Fever (39.2°C), chills, muscle aches, fatigue	WBC: 11.38×10 ⁹ /L NE%: 94.4%	Inflammation of the left lower lung lobe	14	Piperacillin-tazobactam+Levofloxacin→Mox

Case No.	Age (y)	Sex	Sample	Exposure history	Severity (Y/N)	Symptoms	Inflammatory markers	Chest CT findings	Hospital stay (days)	Antimicrobial regimens
							CRP: 200.95 mg/L PCT: <0.1 ng/mL			
16	52	F	BALF	Pigeon	N	Fever (38.4°C), fatigue, muscle aches, chest tightness	WBC: 10.04×10 ⁹ /L NE%: 75.1% CRP: 82.37 mg/L PCT: <0.1 ng/mL	Bilateral pulmonary inflammation with left-sided pleural effusion	7	Omadacycline
17	62	F	BALF	Unknown	N	Fever (39°C), cough, fatigue, muscle aches	WBC: 13.35×10 ⁹ /L NE%: 75.3% CRP: 101.59 mg/L PCT: 0.21 ng/mL	Inflammation of the right lower lung lobe	9	Moxifloxacin→Omadacycline
18	37	M	BALF	Unknown	N	Fever (39.6°C), muscle aches, fatigue	WBC: 10.38×10 ⁹ /L NE%: 88% CRP: 184.19 mg/L PCT: 0.11 ng/mL	Inflammation of the right lower lung lobe	10	Piperacillin-tazobactam→ Moxif
19	67	F	Blood	Poultry	N	Fever (39.6°C), cough, fatigue, muscle aches	WBC: 12.2×10 ⁹ /L NE%: 89.7% CRP: 227.5 mg/L PCT: 0.12 ng/mL	Inflammation of the right upper lung lobe	19	Piperacillin-tazobactam→ Moxifloxacin→Omadacycline

Laboratory and Radiological Findings

Of the 19 patients, 11 had elevated peripheral blood leukocyte counts, and neutrophil percentages were increased in 17 cases. CRP levels were markedly elevated in all patients (median: 128.8 mg/L, range: 41.39–297.4 mg/L). PCT levels tended to be higher in severe cases than in non-severe cases. In the five severe cases, CRP levels exceeded 200 mg/L (reference range: <10 mg/L) in most patients and were accompanied by relatively elevated PCT levels. Arterial blood gas analysis confirmed hypoxemic respiratory failure in all four patients who required mechanical ventilation.

Chest thin-section CT scans revealed pulmonary exudation and consolidation in all patients, as shown in Fig. 1, with unilateral pneumonia in 14 patients (73.7%) and bilateral pneumonia in five patients (26.3%). Pleural effusion was observed in eight patients (42.1%), including seven cases of unilateral effusion and one case of bilateral effusion. Unilateral lower lobe involvement was the most frequent radiological feature (n = 10, 52.6%).

Figure (A–C, F) Unilateral pulmonary inflammation with parenchymal consolidation. Figure (D) Bilateral pulmonary inflammation and consolidation. Figure (E) Pulmonary inflammation complicated by pleural effusion. Figure (D–F) show representative radiological features of severe *C. psittaci* pneumonia.

Antimicrobial Therapy and Clinical Outcomes

All 19 patients received empirical broad-spectrum anti-infective therapy before a definitive diagnosis of *C. psittaci* pneumonia was confirmed. After mNGS confirmation, therapeutic regimens were adjusted based on disease severity: six patients received moxifloxacin monotherapy, three received moxifloxacin-based combination therapy, three received doxycycline-based combination therapy, one received moxifloxacin-doxycycline combination therapy, and six were switched to omadacycline monotherapy.

Notably, four of the five severe cases required invasive mechanical ventilation, and one patient with refractory respiratory failure received extracorporeal membrane oxygenation (ECMO) support. All 19 patients achieved clinical resolution and were successfully discharged from the hospital, with a mean

hospital stay of 15.6 days (range: 7–27 days). The mean hospital stay was 14.1 days for mild cases and 22.8 days for severe cases, with severe cases having a significantly longer hospital stay than mild cases ($P < 0.05$). No adverse events related to antimicrobial therapy were observed in any of the patients.

mNGS results

- *C. psittaci* was detected by mNGS in 16 BALF specimens and three peripheral blood specimens. In accordance with the Chinese Expert Consensus on Pathogen Detection in Bronchoalveolar Lavage Fluid for Pulmonary Infectious Diseases (2017 Edition) [7], bronchoscopy was performed in clinically eligible patients, with bronchoalveolar lavage performed on diseased lung segments identified by chest CT. A 5-mL volume of BALF was collected for mNGS sequencing using a high-throughput gene sequencer. The results confirmed the presence of *C. psittaci* nucleic acid sequences (120–6504 reads) in all positive samples; in addition, other microorganisms including *Staphylococcus* spp., *Streptococcus* spp., *Pseudomonas aeruginosa*, *Cutibacterium acnes*, and *Actinomycetes* were detected in the BALF of 16 patients, which were considered to be due to mixed infection, specimen contamination, or bacterial colonization. The remaining three patients did not undergo bronchoscopy for personal reasons, and peripheral blood samples were collected for mNGS analysis, which confirmed *C. psittaci* infection.

Discussion

C. psittaci is a zoonotic obligate intracellular pathogen that primarily infects avian species and can cause human pulmonary infections via zoonotic transmission. **C. psittaci** can be divided into 10 genotypes (A-G, WC10, E/B, and M56), among which genotypes A and E are pathogenic to humans [8]. Recent studies [9] have suggested that reptiles are also susceptible to **C. psittaci**. In this study, 13 of 19 patients (68.4%) had a definite history of avian or poultry contact, which is consistent with previous studies [8, 9] and supports avian/poultry exposure as an important risk factor for **C. psittaci** pneumonia. Notably, six patients (31.6%) had no clear exposure history, which may be attributed to indirect contact with contaminated aerosols or underreporting of exposure history, thus highlighting the difficulty of clinical diagnosis based solely on exposure history. Furthermore, previous studies [2, 10] have reported a higher prevalence of **C. psittaci** pneumonia in males than in females, with the majority of cases occurring in patients over 50 years of age. Consistent with these findings, 12 of the 19 patients in the present study were male, 10 of whom were over 50 years of age.

In this study, the main clinical manifestations of **C. psittaci** pneumonia were high-grade fever, non-productive cough, myalgia, and fatigue, with 26.3% of patients developing severe pneumonia complicated by respiratory failure or altered mental status. These findings are consistent with the clinical characteristics reported in previous studies [11, 12], but the proportion of severe cases in the present study was relatively higher, which may be related to the older median age of our patients (62 years) and delayed clinical diagnosis. Various studies have reported that psittacosis provokes a more robust inflammatory response, as *C. psittaci* is more pathogenic and replicates more rapidly than other chlamydial species [13]. Laboratory tests showed that CRP was significantly elevated in all patients, while PCT was elevated only in severe cases, suggesting that CRP is a sensitive inflammatory marker for the early diagnosis of **C. psittaci** pneumonia, and PCT serves as a useful indicator for assessing disease severity. Radiologically, unilateral lower lobe involvement was the most common feature, which can provide a valuable clue for the differential diagnosis of **C. psittaci** pneumonia from other causes of CAP.

Traditional diagnostic methods for **C. psittaci** pneumonia (e.g., culture and serology) have low diagnostic sensitivity and a prolonged turnaround time, which limits their clinical application. Untargeted metagenomic next-generation sequencing has gained increasing attention for the diagnosis of infectious diseases, particularly given the limitations of traditional diagnostic methods [14]. Considering its broad detection spectrum, high sensitivity, and relatively rapid turnaround, mNGS has demonstrated significant clinical value for the rapid identification of pathogens in patients with severe pneumonia. In this study, all patients were diagnosed with **C. psittaci** pneumonia via mNGS, with 84.2% of positive results from BALF specimens and 15.8% from blood specimens. This finding indicates that BALF is the optimal specimen type for mNGS detection of **C. psittaci** pneumonia, which is consistent with the Chinese Expert Consensus [7]. For patients who cannot undergo bronchoscopy, peripheral blood mNGS is a viable alternative, especially for severe cases with systemic inflammatory response syndrome (SIRS). mNGS enables the detection of *C. psittaci* within 24–48 hours, thus reducing the time to definitive diagnosis and avoiding the overuse of broad-spectrum antibiotics, which is of great value for the optimization of antimicrobial therapy. Given that mNGS can also detect other potentially pathogenic microorganisms, it is therefore critical to correlate sequencing results with clinical manifestations, laboratory findings, and microbial read counts to confirm pathogenicity. Furthermore, the indication for mNGS should be rigorously evaluated to prevent overuse, given its relatively high cost.

Regarding antimicrobial therapy, tetracycline-class agents (doxycycline and omadacycline) and fluoroquinolones (moxifloxacin) were the main agents used in this study. Our results showed that omadacycline monotherapy and doxycycline-based combination therapy achieved favorable clinical efficacy in all patients, including severe cases. Moxifloxacin was effective in mild cases, but three severe cases had a suboptimal response to moxifloxacin monotherapy or combination therapy and required a switch to tetracycline-class agents. This observation is in line with the findings of previous clinical studies [15, 16], further supporting that tetracycline-class agents are the first-line therapeutic option for severe *C. psittaci* pneumonia, while moxifloxacin may be used as an alternative for mild cases or patients with contraindications to tetracyclines. Omadacycline, a novel aminomethylcycline derivative, exhibited favorable efficacy in the treatment of **C. psittaci** pneumonia in our study, which provides clinical evidence for its application in this disease. However, large-sample multicenter studies are needed to further confirm the efficacy and safety of omadacycline for the treatment of **C. psittaci** pneumonia.

Study Limitations

This study has several limitations that should be acknowledged. First, this was a single-center retrospective study with a relatively small sample size ($n = 19$), which may have introduced selection bias and thus limited the generalizability of our findings to other populations. Second, no control group was included in the study, precluding a direct comparison of the diagnostic efficacy between mNGS and traditional diagnostic methods (e.g., polymerase chain reaction [PCR]). Third, no long-term follow-up data were available for the enrolled patients, which prevented an evaluation of the long-term clinical outcomes and

recurrence rate of **C. psittaci** pneumonia. Fourth, the underlying pathogenic mechanisms contributing to the development of severe **C. psittaci** pneumonia were not investigated in the present study, and this warrants further basic and clinical research to elucidate the associated molecular and immunological mechanisms.

Conclusion

Taken together, this retrospective study characterized the clinical features, diagnostic approaches, and therapeutic outcomes of 19 patients with mNGS-confirmed *C. psittaci* pneumonia in Hangzhou, southern China. Our findings support avian/poultry exposure is a critical risk factor for *C. psittaci* pneumonia, which is clinically characterized by an acute onset of high-grade fever, non-productive cough, and myalgia. Markedly elevated CRP was commonly observed and may serve as a useful inflammatory clue, whereas elevated PCT appeared to be more frequent in severe cases and may help assess disease severity.

mNGS may serve as a rapid and accurate diagnostic tool for *C. psittaci* pneumonia, with BALF being the optimal specimen type for detection. This observation supports tetracycline-class agents as preferred therapeutic options for *C. psittaci* pneumonia, particularly in severe cases. Moxifloxacin may be used as an alternative in selected mild cases or in patients with contraindications to tetracyclines. Future multicenter, prospective cohort studies with larger sample sizes are warranted to validate our findings and further optimize the diagnostic and therapeutic strategies for *C. psittaci* pneumonia.

Abbreviations

C. psittaci
Chlamydia psittaci
mNGS
metagenomic next-generation sequencing
ARDS
acute respiratory distress syndrome
PCT
procalcitonin
CRP
C-reactive protein
CT
computed tomography
BALF
bronchoalveolar lavage fluid
CAP
community-acquired pneumonia
MODS
multiple organ dysfunction syndrome
ECMO
extracorporeal membrane oxygenation

Declarations

Ethics Approval

This retrospective study was approved by the Institutional Ethics Committee of the Affiliated Hospital of Hangzhou Normal University (Approval No. 2023 (E2)-KS-029). Due to the retrospective nature of the study and loss to follow-up of some patients, written informed consent was waived by the Committee. All clinical data were anonymized before analysis, and the study was conducted in accordance with the Declaration of Helsinki (2013 revision).

Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Author Contribution

Conceptualization: G. Li and G. Chen; Data curation: G. Li, J. Liu, and Y. Bao; Formal analysis: G. Li and X. Zhou; Investigation: G. Li and J. Liu; Methodology: G. Li and G. Chen; Writing – original draft: G. Li; Manuscript revision: Wanting Huang and Binbin Zhan; Writing – review and editing: G. Chen; Supervision: G.

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Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author upon reasonable request. All data used in this study are anonymized to protect patient privacy.

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Figures

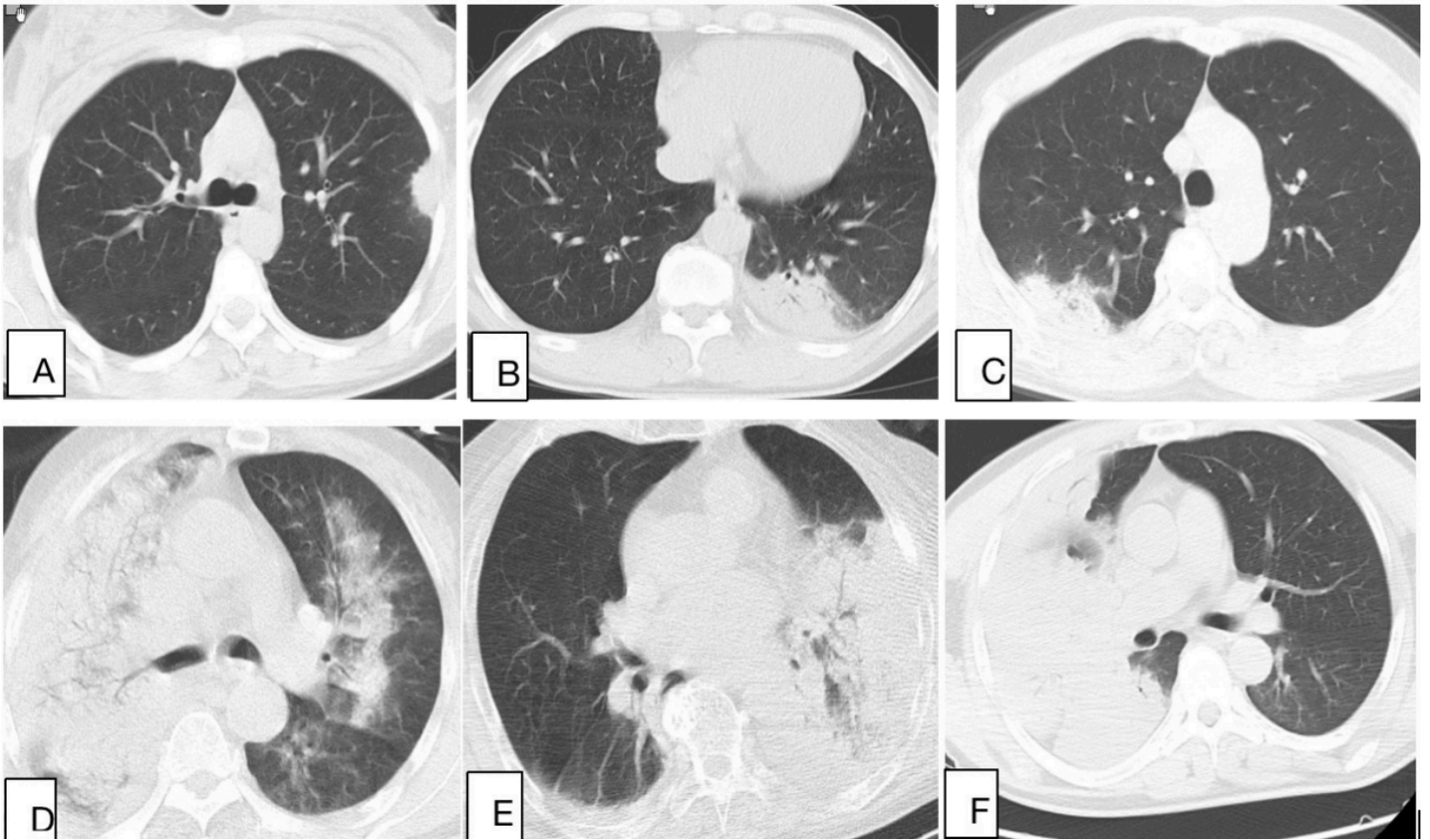


Figure 1

Chest CT imaging findings of *Chlamydia psittaci* pneumonia.

Figure (A–C, F) Unilateral pulmonary inflammation with parenchymal consolidation. Figure (D) Bilateral pulmonary inflammation and consolidation. Figure (E) Pulmonary inflammation complicated by pleural effusion. Figure(D–F) show representative radiological features of severe *C. psittaci* pneumonia.