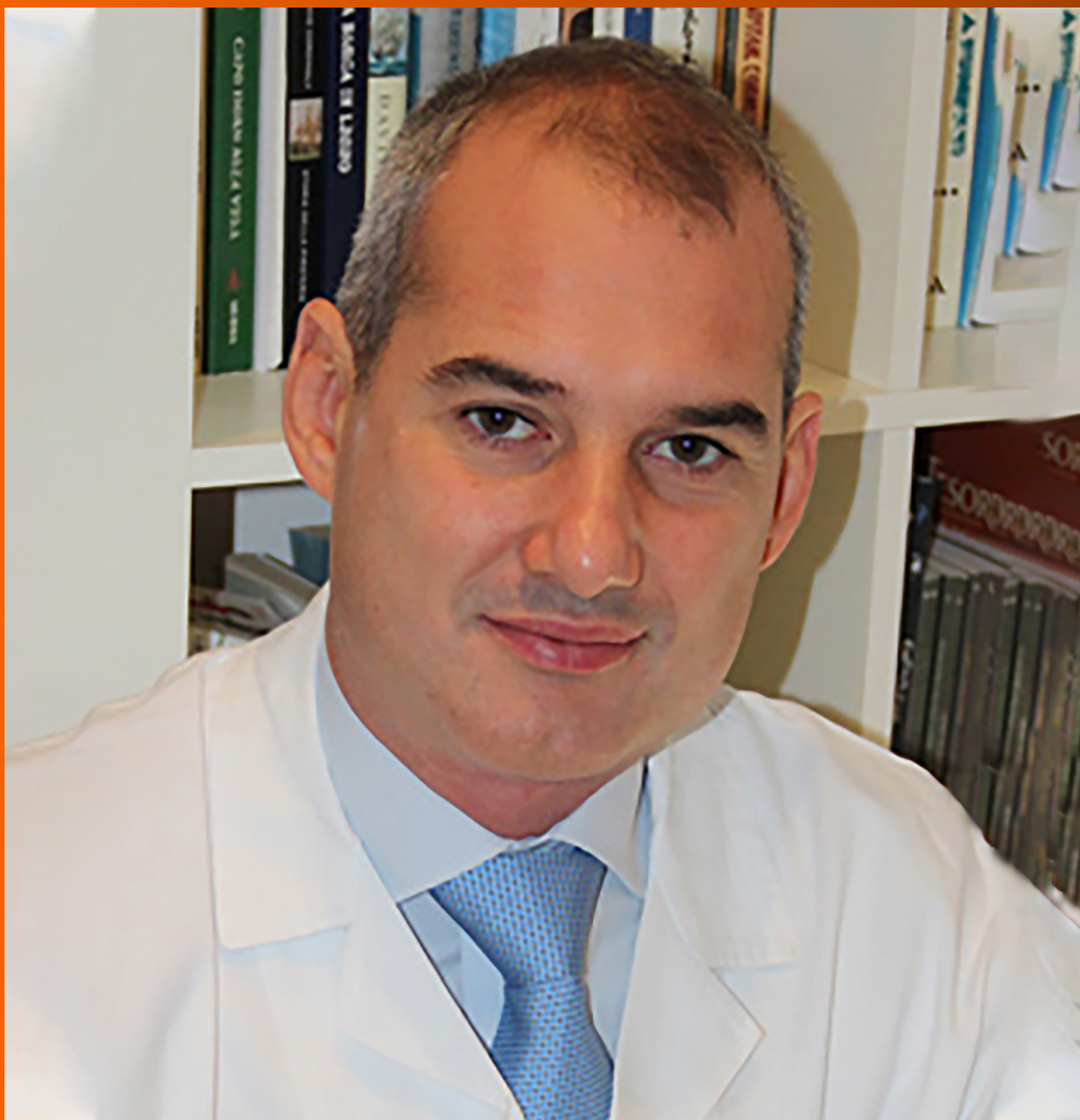


World Journal of *Clinical Cases*

World J Clin Cases 2021 August 16; 9(23): 6582-6963



OPINION REVIEW

- 6582** COVID-19 pandemic, as experienced in the surgical service of a district hospital in Spain
Pérez Lara FJ, Jimenez Martinez MB, Pozo Muñoz F, Fontalba Navas A, Garcia Cisneros R, Garcia Larrosa MJ, Garcia Delgado I, Callejon Gil MDM

REVIEW

- 6591** Beta-carotene and its protective effect on gastric cancer
Chen QH, Wu BK, Pan D, Sang LX, Chang B
- 6608** Liver transplantation during global COVID-19 pandemic
Alfishawy M, Nso N, Nassar M, Ariyaratnam J, Bhuiyan S, Siddiqui RS, Li M, Chung H, Al Balakosy A, Alqassieh A, Fülöp T, Rizzo V, Daoud A, Soliman KM
- 6624** Nonalcoholic fatty pancreas disease: An emerging clinical challenge
Zhang CL, Wang JJ, Li JN, Yang Y

MINIREVIEWS

- 6639** Novel mechanism of hepatobiliary system damage and immunoglobulin G4 elevation caused by *Clonorchis sinensis* infection
Zhang XH, Huang D, Li YL, Chang B
- 6654** Intestinal microbiota participates in nonalcoholic fatty liver disease progression by affecting intestinal homeostasis
Zhang Y, Li JX, Zhang Y, Wang YL
- 6663** Theory and reality of antivirals against SARS-CoV-2
Zhao B, Yang TF, Zheng R
- 6674** Acute acalculous cholecystitis due to infectious causes
Markaki I, Konsoula A, Markaki L, Spornovasilis N, Papadakis M

ORIGINAL ARTICLE

Case Control Study

- 6686** Innate immunity – the hallmark of *Helicobacter pylori* infection in pediatric chronic gastritis
Meliş LE, Mărginean CO, Săsară MO, Mocan S, Ghiga DV, Bogliş A, Duicu C

Retrospective Study

- 6698** Effects on newborns of applying bupivacaine combined with different doses of fentanyl for cesarean section
Wang Y, Liu WX, Zhou XH, Yang M, Liu X, Zhang Y, Hai KR, Ye QS

- 6705** Awake fiberoptic intubation and use of bronchial blockers in ankylosing spondylitis patients
Yang SZ, Huang SS, Yi WB, Lv WW, Li L, Qi F
- 6717** Efficacy of different antibiotics in treatment of children with respiratory mycoplasma infection
Zhang MY, Zhao Y, Liu JF, Liu GP, Zhang RY, Wang LM
- 6725** Expression of caspase-3 and hypoxia inducible factor 1 α in hepatocellular carcinoma complicated by hemorrhage and necrosis
Liang H, Wu JG, Wang F, Chen BX, Zou ST, Wang C, Luo SW
- 6734** Increased morbidity and mortality of hepatocellular carcinoma patients in lower cost of living areas
Sempokuya T, Patel KP, Azawi M, Ma J, Wong LL

SYSTEMATIC REVIEWS

- 6747** Safety of pancreatic surgery with special reference to antithrombotic therapy: A systematic review of the literature
Fujikawa T, Naito S
- 6759** What paradigm shifts occurred in the management of acute diverticulitis during the COVID-19 pandemic? A scoping review
Gallo G, Ortenzi M, Grossi U, Di Tanna GL, Pata F, Guerrieri M, Sammarco G, Di Saverio S

CASE REPORT

- 6768** Pylephlebitis — a rare complication of a fish bone migration mimicking metastatic pancreatic cancer: A case report
Bezerra S, França NJ, Mineiro F, Capela G, Duarte C, Mendes AR
- 6775** Solitary seminal vesicle metastasis from ileal adenocarcinoma presenting with hematospermia: A case report
Cheng XB, Lu ZQ, Lam W, Yiu MK, Li JS
- 6781** Hepatic abscess caused by esophageal foreign body misdiagnosed as cystadenocarcinoma by magnetic resonance imaging: A case report
Pan W, Lin LJ, Meng ZW, Cai XR, Chen YL
- 6789** 2+0 CYP21A2 deletion carrier — a limitation of the genetic testing and counseling: A case report
Xi N, Song X, Wang XY, Qin SF, He GN, Sun LL, Chen XM
- 6798** Psoriasis treatment using minimally manipulated umbilical cord-derived mesenchymal stem cells: A case report
Ahn H, Lee SY, Jung WJ, Pi J, Lee KH
- 6804** Double intussusception in a teenage child with Peutz-Jeghers syndrome: A case report
Chiew J, Sambanthan ST, Mahendran HA

- 6810** Nedaplatin-induced syndrome of inappropriate secretion of antidiuretic hormone: A case report and review of the literature
Tian L, He LY, Zhang HZ
- 6816** Nasal metastases from neuroblastoma-a rare entity: Two case reports
Zhang Y, Guan WB, Wang RF, Yu WW, Jiang RQ, Liu Y, Wang LF, Wang J
- 6824** Nocardiosis with diffuse involvement of the pleura: A case report
Wang P, Yi ML, Zhang CZ
- 6832** Prenatal diagnosis of triphalangeal thumb-polysyndactyly syndrome by ultrasonography combined with genetic testing: A case report
Zhang SJ, Lin HB, Jiang QX, He SZ, Lyu GR
- 6839** Blue LED as a new treatment to vaginal stenosis due pelvic radiotherapy: Two case reports
Barros D, Alvares C, Alencar T, Baqueiro P, Marianno A, Alves R, Lenzi J, Rezende LF, Lordelo P
- 6846** Diverse microbiota in palatal radicular groove analyzed by Illumina sequencing: Four case reports
Tan XL, Chen X, Fu YJ, Ye L, Zhang L, Huang DM
- 6858** Autism with dysphasia accompanied by mental retardation caused by *FOXP1* exon deletion: A case report
Lin SZ, Zhou XY, Wang WQ, Jiang K
- 6867** *FGFR2-TSC22D1*, a novel *FGFR2* fusion gene identified in a patient with colorectal cancer: A case report
Kao XM, Zhu X, Zhang JL, Chen SQ, Fan CG
- 6872** Trismus originating from rare fungal myositis in pterygoid muscles: A case report
Bi L, Wei D, Wang B, He JF, Zhu HY, Wang HM
- 6879** Retroperitoneal laparoscopic partial nephrectomy for unilateral synchronous multifocal renal carcinoma with different pathological types: A case report
Xiao YM, Yang SK, Wang Y, Mao D, Duan FL, Zhou SK
- 6886** Diffuse large B cell lymphoma originating from the maxillary sinus with skin metastases: A case report and review of literature
Usuda D, Izumida T, Terada N, Sangen R, Higashikawa T, Sekiguchi S, Tanaka R, Suzuki M, Hotchi Y, Shimoizawa S, Tokunaga S, Osugi I, Katou R, Ito S, Asako S, Takagi Y, Mishima K, Kondo A, Mizuno K, Takami H, Komatsu T, Oba J, Nomura T, Sugita M, Kasamaki Y
- 6900** Manifestation of acute peritonitis and pneumonedema in scrub typhus without eschar: A case report
Zhou XL, Ye QL, Chen JQ, Li W, Dong HJ
- 6907** Uterine tumor resembling an ovarian sex cord tumor: A case report and review of literature
Zhou FF, He YT, Li Y, Zhang M, Chen FH
- 6916** Dopamine agonist responsive burning mouth syndrome: Report of eight cases
Du QC, Ge YY, Xiao WL, Wang WF

- 6922** Complete withdrawal of glucocorticoids after dupilumab therapy in allergic bronchopulmonary aspergillosis: A case report
Nishimura T, Okano T, Naito M, Tsuji C, Iwanaka S, Sakakura Y, Yasuma T, Fujimoto H, D'Alessandro-Gabazza CN, Oomoto Y, Kobayashi T, Gabazza EC, Ibata H
- 6929** Sirolimus treatment for neonate with blue rubber bleb nevus syndrome: A case report
Yang SS, Yang M, Yue XJ, Tou JF
- 6935** Combined thoracoscopic and laparoscopic approach to remove a large retroperitoneal compound paraganglioma: A case report
Liu C, Wen J, Li HZ, Ji ZG
- 6943** Menetrier's disease and differential diagnosis: A case report
Wang HH, Zhao CC, Wang XL, Cheng ZN, Xie ZY
- 6950** Post-salpingectomy interstitial heterotopic pregnancy after *in vitro* fertilization and embryo transfer: A case report
Wang Q, Pan XL, Qi XR
- 6956** Ulnar nerve injury associated with displaced distal radius fracture: Two case reports
Yang JJ, Qu W, Wu YX, Jiang HJ

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Luigi Valentino Berra, MD, Assistant Professor, Neurosurgeon, Department of Neurosurgery, Policlinico Umberto I - Sapienza Università di Roma, Roma 00161, Italy. luigivbe@tin.it

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The WJCC is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, Scopus, PubMed, and PubMed Central. The 2021 Edition of Journal Citation Reports® cites the 2020 impact factor (IF) for WJCC as 1.337; IF without journal self cites: 1.301; 5-year IF: 1.742; Journal Citation Indicator: 0.33; Ranking: 119 among 169 journals in medicine, general and internal; and Quartile category: Q3. The WJCC's CiteScore for 2020 is 0.8 and Scopus CiteScore rank 2020: General Medicine is 493/793.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: Jia-Hui Li; Production Department Director: Xiang Li; Editorial Office Director: Jin-Lei Wang.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Dennis A Bloomfield, Sandro Vento, Bao-Gan Peng

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

August 16, 2021

COPYRIGHT

© 2021 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Nocardiosis with diffuse involvement of the pleura: A case report

Ping Wang, Mao-Li Yi, Cheng-Zhou Zhang

ORCID number: Ping Wang 0000-0001-8848-8992; Mao-Li Yi 0000-0002-9132-1437; Cheng-Zhou Zhang 0000-0001-5847-4530.

Author contributions: Wang P and Yi ML contributed equally to this work; Wang P drafted the manuscript; Yi ML provided guidance for the case diagnosis and helped to draft the manuscript; Zhang CZ was responsible for the literature review and revised the article for important intellectual content; all authors have read and approved the final manuscript.

Informed consent statement:

Written informed consent was obtained from the patient for publication of this case report.

Conflict-of-interest statement: The authors declare that they have no conflicts of interest.

CARE Checklist (2016) statement:

The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to

Ping Wang, Cheng-Zhou Zhang, Department of Radiology, Yantai Yuhuangding Hospital, Yantai 264000, Shandong Province, China

Mao-Li Yi, Department of Laboratory Medicine, Yantai Yuhuangding Hospital, Yantai 264000, Shandong Province, China

Corresponding author: Cheng-Zhou Zhang, MD, Chief Doctor, Department of Radiology, Yantai Yuhuangding Hospital, No. 20 Yudong Road, Zhifu District, Yantai 264000, Shandong Province, China. chzh_zhang@163.com

Abstract

BACKGROUND

Nocardiosis is an uncommon infection that usually occurs in immunocompromised patients, and the pulmonary system is the most common site. We report an uncommon case of nocardiosis with diffuse involvement of the pleura, which presented as multiple localized nodular or hillock lesions on computed tomography (CT) with local chest wall infiltration.

CASE SUMMARY

A 54-year-old woman was referred to our hospital due to cough and fever for 20 d. She had a history of nephrotic syndrome for 7 mo and was given prednisone (60 mg/d) 6 mo previously. The hormone was then gradually reduced to the current dose of 25 mg/d. Chest CT showed many nodular or hillock lesions in the right pleura, mediastinum, and interlobar fissure areas. On the lower layer, one lesion infiltrated the chest wall. She was treated with piperacillin sodium and sulbactam sodium, but the therapeutic effect was not good. In this regard, ultrasound-guided local infiltration anesthesia was further conducted for perihepatic hydrops drainage to improve diagnostic accuracy. Puncture fluid culture isolated *Nocardia* species, confirming the diagnosis of nocardiosis. Subtype *Nocardia farcinica* was identified by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry. Antibiotic treatment was switched to trimethoprim/sulfamethoxazole and imipenem. After 8 d of treatment, the patient was discharged from the hospital with improved condition, and she has been recurrence-free for 2 years.

CONCLUSION

This report illustrates that nocardiosis should be suspected when clinicians encounter patients who are immunocompromised and have diffuse involvement of the pleura.

distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

Manuscript source: Unsolicited manuscript

Specialty type: Infectious diseases

Country/Territory of origin: China

Peer-review report's scientific quality classification

Grade A (Excellent): 0

Grade B (Very good): B, B

Grade C (Good): 0

Grade D (Fair): 0

Grade E (Poor): 0

Received: January 31, 2021

Peer-review started: January 31, 2021

First decision: March 11, 2021

Revised: March 31, 2021

Accepted: July 2, 2021

Article in press: July 2, 2021

Published online: August 16, 2021

P-Reviewer: Naem AA

S-Editor: Yan JP

L-Editor: Webster JR

P-Editor: Liu JH



Key Words: Nocardiosis; Lung; Pleura; Computed tomography; Case report

©The Author(s) 2021. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Nocardiosis is an uncommon subacute or chronic suppurative infection that usually occurs in immunocompromised patients. The pathological manifestations of nocardiosis are usually granulomas or abscesses. This case of nocardiosis exhibited diffuse involvement of the pleura and presented as multiple localized nodular or hillock shadows in the pleura, mediastinum, and interlobar fissure areas on computed tomography, which differs from simple pleural effusion or general bacterial infection.

Citation: Wang P, Yi ML, Zhang CZ. Nocardiosis with diffuse involvement of the pleura: A case report. *World J Clin Cases* 2021; 9(23): 6824-6831

URL: <https://www.wjgnet.com/2307-8960/full/v9/i23/6824.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v9.i23.6824>

INTRODUCTION

Nocardia species, which belong to Actinomycetes, are ubiquitous in the environment, especially in soil and water[1,2]. Nocardiosis usually occurs in the pulmonary system most commonly through direct inhalation of *Nocardia*[1,3]. An accurate diagnosis of nocardiosis is essential for determining the appropriate treatment, but it is often misdiagnosed as other infections or malignancy. Only a few studies have described the computed tomography (CT) findings of pulmonary nocardiosis; the most common CT finding is pulmonary manifestations[4-6]. This report describes an uncommon case of nocardiosis with diffuse involvement of the pleura.

CASE PRESENTATION

Chief complaints

A 54-year-old woman was referred to our hospital due to cough and fever.

History of present illness

The patient developed cough and fever 20 d ago after catching a cold. The cough was paroxysmal with white sticky sputum. Her body temperature ranged from 38°C to 39°C.

History of past illness

She had a history of nephrotic syndrome for 7 mo and was given prednisone (60 mg/d) 6 mo previously. The hormone was then gradually reduced to the current dose of 25 mg/d. The patient was a farmer, but she did not work after she became sick. She had no special contact history, such as going into the greenhouse, dust exposure, or pet breeding.

Personal and family history

The patient denied any family history.

Physical examination

On admission, her temperature was 38.3°C, respiratory rate was 23 breaths/min, heart rate was 114 bpm, and blood pressure was 90/69 mmHg. Breath sounds in both lungs were rough, and moist rales were heard.

Laboratory examinations

Laboratory data revealed the following values: white blood cell count, $12.58 \times 10^9/L$; hemoglobin, 102 g/L; platelets, $118 \times 10^9/L$; C-reactive protein, 240 mg/L; and procalcitonin, 2.93 ng/mL.

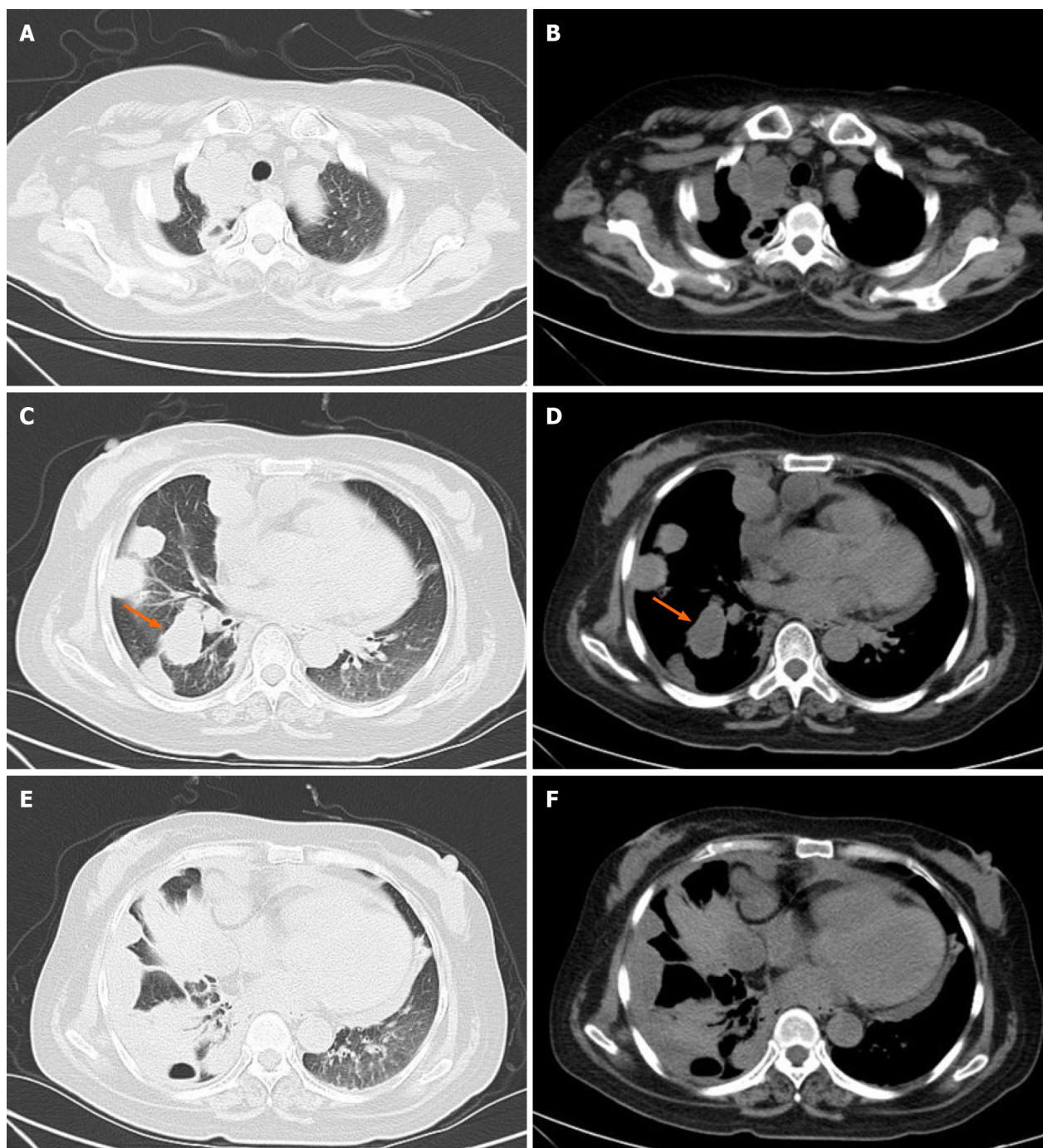


Figure 1 Axial computed tomography showed many nodular or hillock lesions in the right pleura, mediastinum, and interlobar fissure areas. A and B: At the upper level of the lung, the lesions were located in the right pleural and mediastinum areas; C and D: At the middle level of the lung, the lesions were located in the right pleura, mediastinum, and interlobar fissure areas (arrow); E and F: At the lower level of the lung, the lesions were located in the right pleura and mediastinum areas with atelectasis of adjacent lung.

Imaging examinations

Chest CT showed many nodular or hillock lesions in the right pleura, mediastinum, and interlobar fissure areas (Figures 1-3). Most of the lesions showed low density, and some showed soft-tissue density at the peripheral areas with low density in the center and had cavitary appearance. The edge of the lesion was clear, and the right lung was compressed with volume reduction and partial atelectasis. On the lower layer, one lesion infiltrated the chest wall, and the adjacent liver was compressed (Figure 3D). Right pleural effusion and pericardial effusion were also observed.

Further diagnostic work-up

She was treated with piperacillin sodium and sulbactam sodium, but her temperature still fluctuated. Her inflammatory markers were still elevated, and follow-up chest CT

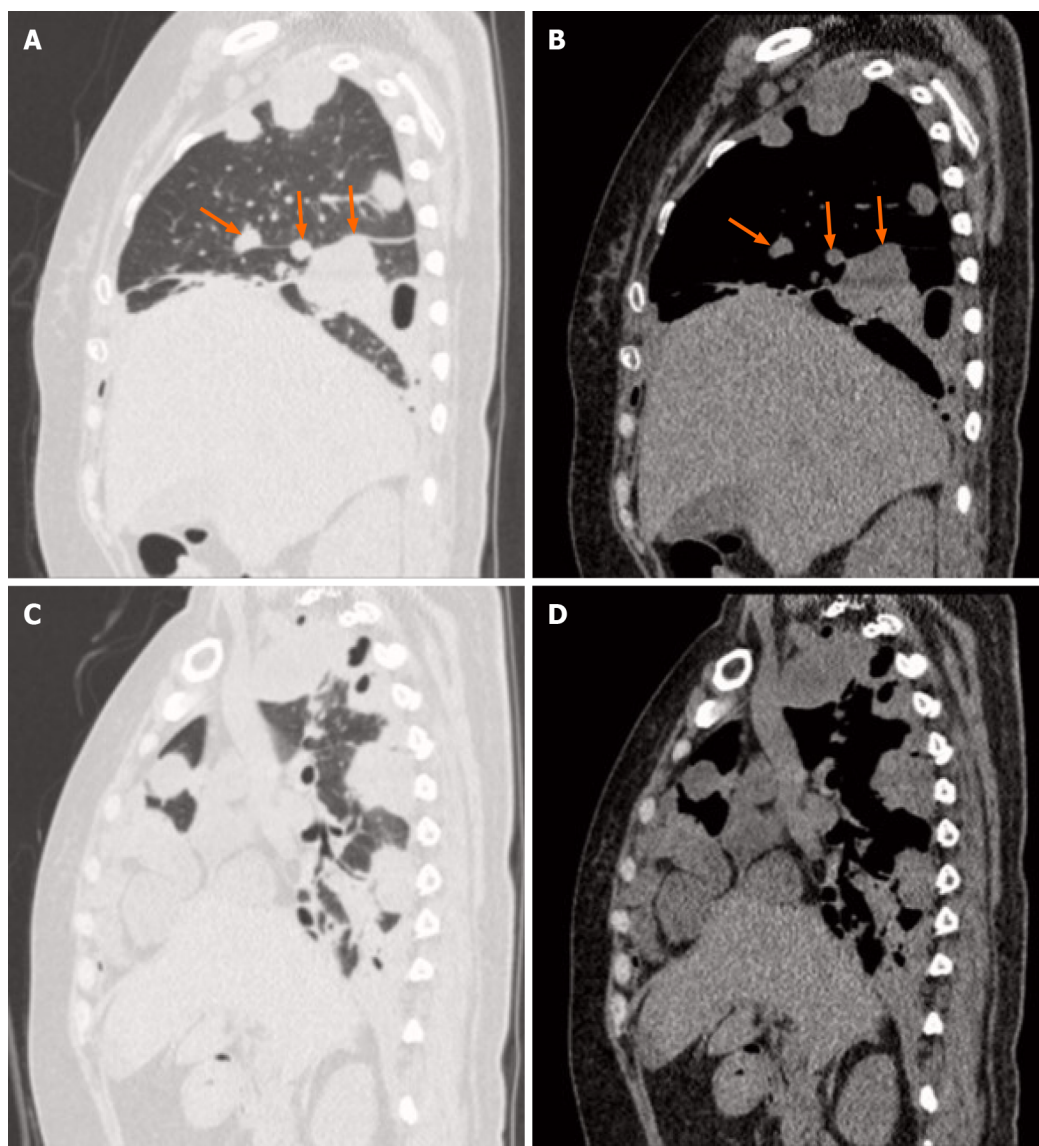


Figure 2 Sagittal computed tomography showed many nodular or hillock lesions in the right pleura, mediastinum, and interlobar fissure areas. A and B: The lesions were located in the right pleura and interlobar fissure areas (arrow); C and D: The lesions were located in the right pleura and mediastinum areas.

scan showed no improvement. In this regard, ultrasound-guided local infiltration anesthesia was further conducted for perihepatic hydrops drainage to improve diagnostic accuracy.

Microbiological identification of causative agent

The puncture fluid was thick pus. Gram staining of the puncture fluid depicted Gram-positive bacteria with branching filaments (Figure 4A), and the bacteria were positive for weak acid-fast staining (Figure 4B). The tentative diagnosis of nocardiosis was made. Puncture fluid culture isolated *Nocardia* species, confirming the diagnosis of nocardiosis. Subtype *Nocardia farcinica* was identified by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry.

FINAL DIAGNOSIS

The final diagnosis of the presented case was nocardiosis.

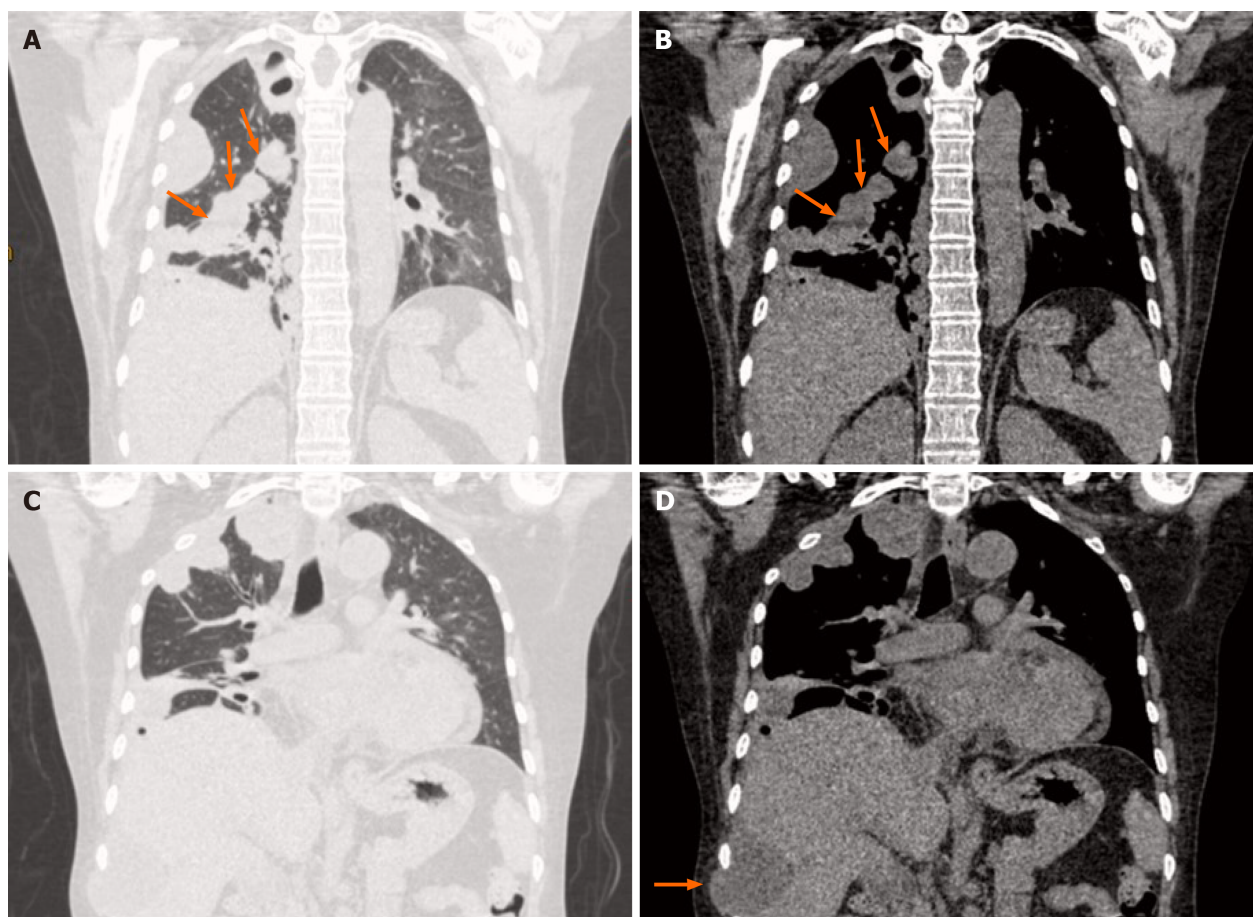


Figure 3 Coronal computed tomography showed many nodular or hillock lesions in the right pleura, mediastinum, and interlobar fissure areas. A and B: The lesions were located in the right pleura, mediastinum, and interlobar fissure areas (thin arrow); C and D: The lesions were located in the right pleura and mediastinum areas. On the lower layer, one lesion infiltrated the chest wall, and the adjacent liver was compressed (thick arrow).

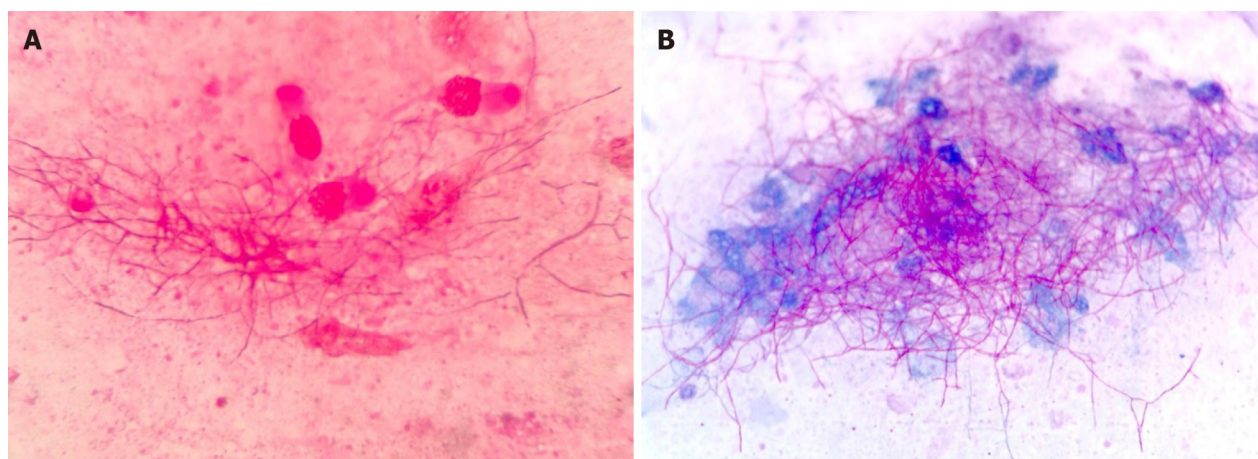


Figure 4 Gram staining and weak acid-fast staining of the bacteria. A: Gram staining showed filamentous, branching Gram-positive bacilli; B: The bacteria were positive for weak acid-fast staining.

TREATMENT

Antibiotic treatment was switched to trimethoprim/sulfamethoxazole and imipenem.

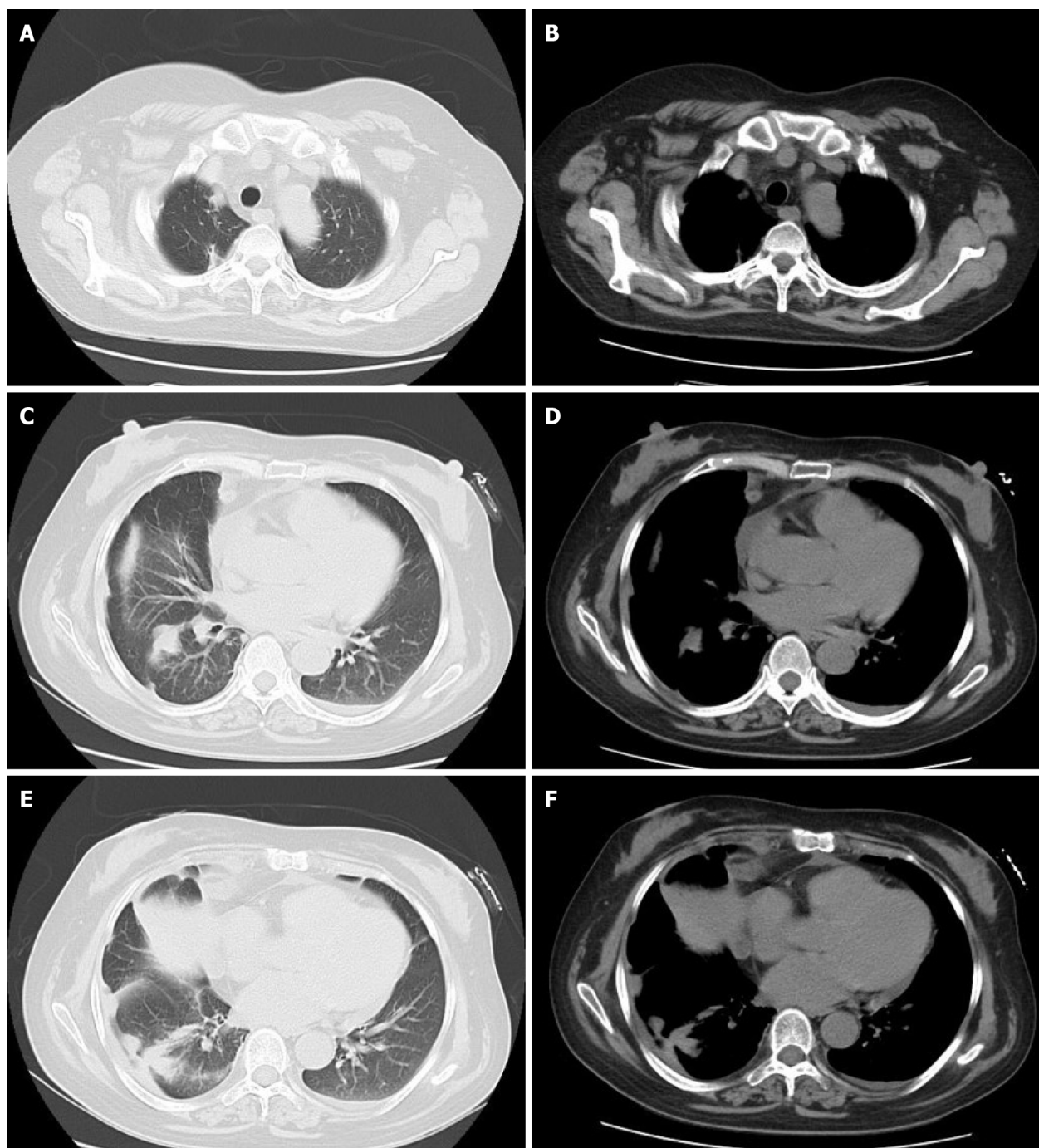


Figure 5 Axial computed tomography showed that the lesions were obviously improved in terms of absorption after 1 mo of treatment. A and B: At the upper level of the lung, the lesions located in the right pleural and mediastinum areas were significantly reduced; C and D: At the middle level of the lung, the lesions located in the right pleura, mediastinum, and interlobar fissure areas were significantly reduced; E and F: At the lower level of the lung, the lesions located in the right pleura and mediastinum areas were significantly reduced and atelectasis of adjacent lung was markedly improved.

OUTCOME AND FOLLOW-UP

After 8 d of treatment, the patient was discharged from the hospital with improved condition. After 1 mo of treatment, the CT scans showed that the lesions were obviously improved in terms of absorption (Figure 5). The patient has been recurrence-free for 2 years.

DISCUSSION

Nocardia species, which belong to Actinomycetes, are ubiquitous in the environment,

especially in soil and water[1,2]. Nocardiosis is an uncommon infection that usually occurs in immunocompromised patients, such as those with organ transplantation, corticosteroid or cytotoxic agent treatment, HIV infection, and malignancies[1,3]. Infection can occur in many organs, and the pulmonary system is the most common site. The infection can be disseminated further by blood and progress into systemic infection, resulting in poor prognosis, especially if the central nervous system is involved[5,7]. As such, monitoring the patient's immunity status, especially cellular immunity during corticosteroid use for the present case, is very important.

An accurate diagnosis of nocardiosis is essential for determining appropriate treatment, but it is often misdiagnosed as other infections or malignancy. The definitive diagnosis of nocardiosis is usually based on isolation of microorganisms from clinical samples; however, microorganisms are often difficult to isolate by conventional culture methods. The growth of microorganisms is very slow and may be overlooked by overgrowth of other rapidly growing aerobic bacteria in mixed flora. As such, microbiological samples should be incubated longer to allow *Nocardia* to grow given that they have a prolonged incubation period of 2 wk to 3 wk[8,9].

Nocardiosis commonly presents as subacute or chronic suppurative disease. The pathological manifestations of nocardiosis are usually granulomas or abscesses[10]. The most common CT findings of pulmonary nocardiosis include multiple nodules, cavitation, consolidation, and masses (or mass-like consolidation) as well as pleural effusion[4-6]. The reported case is special given that the patient had slight pulmonary infiltration but mainly involving the pleura. We hypothesized that the patient's appearance was due to the spread of the pathogen along pleural or interlobar effusion (pus). Multiple localized nodular or hillock shadows developed in the pleura, mediastinum, and interlobar fissure areas because the lesions usually manifest as granulomas or abscesses, which is different to simple pleural effusion or general bacterial infection. The CT findings in this case need to be differentiated from tuberculous pleurisy and malignancy.

CONCLUSION

This report illustrates that nocardiosis should be suspected when clinicians encounter patients who are immunocompromised and have diffuse involvement of the pleura on CT. More severe manifestations of nocardiosis should be suspected when prolonged administration of corticosteroids is present.

REFERENCES

- 1 **Restrepo A**, Clark NM; Infectious Diseases Community of Practice of the American Society of Transplantation. Nocardia infections in solid organ transplantation: Guidelines from the Infectious Diseases Community of Practice of the American Society of Transplantation. *Clin Transplant* 2019; **33**: e13509 [PMID: 30817024 DOI: 10.1111/ctr.13509]
- 2 **Haussaire D**, Fournier PE, Djiguiba K, Moal V, Legris T, Purgus R, Bismuth J, Elharrar X, Reynaud-Gaubert M, Vacher-Coponat H. Nocardiosis in the south of France over a 10-years period, 2004-2014. *Int J Infect Dis* 2017; **57**: 13-20 [PMID: 28088585 DOI: 10.1016/j.ijid.2017.01.005]
- 3 **Hui CH**, Au VW, Rowland K, Slavotinek JP, Gordon DL. Pulmonary nocardiosis re-visited: experience of 35 patients at diagnosis. *Respir Med* 2003; **97**: 709-717 [PMID: 12814159 DOI: 10.1053/rmed.2003.1505]
- 4 **Tsujimoto N**, Saraya T, Kikuchi K, Takata S, Kurihara Y, Hiraoka S, Makino H, Yonetani S, Araki K, Ishii H, Takizawa H, Goto H. High-resolution CT findings of patients with pulmonary nocardiosis. *J Thorac Dis* 2012; **4**: 577-582 [PMID: 23205281 DOI: 10.3978/j.issn.2072-1439.2012.11.07]
- 5 **Blackmon KN**, Ravenel JG, Gomez JM, Ciolino J, Wray DW. Pulmonary nocardiosis: computed tomography features at diagnosis. *J Thorac Imaging* 2011; **26**: 224-229 [PMID: 21785288 DOI: 10.1097/RTI.0b013e3181f45dd5]
- 6 **Yoon HK**, Im JG, Ahn JM, Han MC. Pulmonary nocardiosis: CT findings. *J Comput Assist Tomogr* 1995; **19**: 52-55 [PMID: 7822548 DOI: 10.1097/00004728-199501000-00010]
- 7 **Rafiei N**, Peri AM, Righi E, Harris P, Paterson DL. Central nervous system nocardiosis in Queensland: A report of 20 cases and review of the literature. *Medicine (Baltimore)* 2016; **95**: e5255 [PMID: 27861348 DOI: 10.1097/MD.0000000000005255]
- 8 **McNeil MM**, Brown JM. The medically important aerobic actinomycetes: epidemiology and microbiology. *Clin Microbiol Rev* 1994; **7**: 357-417 [PMID: 7923055 DOI: 10.1128/cmr.7.3.357]
- 9 **Bittar F**, Rolain JM. Detection and accurate identification of new or emerging bacteria in cystic fibrosis patients. *Clin Microbiol Infect* 2010; **16**: 809-820 [PMID: 20880410 DOI: 10.1111/j.1469-0691.2010.03236.x]

- 10 **Beaman BL**, Beaman L. Nocardia species: host-parasite relationships. *Clin Microbiol Rev* 1994; 7: 213-264 [PMID: [8055469](#) DOI: [10.1128/cmr.7.2.213](#)]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

