

World Journal of *Clinical Cases*

World J Clin Cases 2022 May 16; 10(14): 4327-4712



Contents

Thrice Monthly Volume 10 Number 14 May 16, 2022

OPINION REVIEW

- 4327 Emerging role of biosimilars in the clinical care of inflammatory bowel disease patients
Najeeb H, Yasmin F, Surani S

MINIREVIEWS

- 4334 Practical insights into chronic management of hepatic Wilson's disease
Lynch EN, Campani C, Innocenti T, Dragoni G, Forte P, Galli A
- 4348 Adipose-derived stem cells in the treatment of hepatobiliary diseases and sepsis
Satilmis B, Cicek GS, Cicek E, Akbulut S, Sahin TT, Yilmaz S

ORIGINAL ARTICLE

Clinical and Translational Research

- 4357 Learning curve for a surgeon in robotic pancreaticoduodenectomy through a "G"-shaped approach: A cumulative sum analysis
Wei ZG, Liang CJ, Du Y, Zhang YP, Liu Y
- 4368 Clinical and prognostic significance of expression of phosphoglycerate mutase family member 5 and Parkin in advanced colorectal cancer
Wu C, Feng ML, Jiao TW, Sun MJ

Case Control Study

- 4380 Significance of preoperative peripheral blood neutrophil-lymphocyte ratio in predicting postoperative survival in patients with multiple myeloma bone disease
Xu ZY, Yao XC, Shi XJ, Du XR

Retrospective Study

- 4395 Association between depression and malnutrition in pulmonary tuberculosis patients: A cross-sectional study
Fang XE, Chen DP, Tang LL, Mao YJ
- 4404 Pancreatic cancer incidence and mortality patterns in 2006-2015 and prediction of the epidemiological trend to 2025 in China
Yin MY, Xi LT, Liu L, Zhu JZ, Qian LJ, Xu CF
- 4414 Evaluation of short- and medium-term efficacy and complications of ultrasound-guided ablation for small liver cancer
Zhong H, Hu R, Jiang YS

- 4425** Hematopoiesis reconstitution and anti-tumor effectiveness of Pai-Neng-Da capsule in acute leukemia patients with haploidentical hematopoietic stem cell transplantation

Yuan JJ, Lu Y, Cao JJ, Pei RZ, Gao RL

- 4436** Oral and maxillofacial pain as the first sign of metastasis of an occult primary tumour: A fifteen-year retrospective study

Shan S, Liu S, Yang ZY, Wang TM, Lin ZT, Feng YL, Pakezhati S, Huang XF, Zhang L, Sun GW

- 4446** Reduced serum high-density lipoprotein cholesterol levels and aberrantly expressed cholesterol metabolism genes in colorectal cancer

Tao JH, Wang XT, Yuan W, Chen JN, Wang ZJ, Ma YB, Zhao FQ, Zhang LY, Ma J, Liu Q

Observational Study

- 4460** Correlation of pressure gradient in three hepatic veins with portal pressure gradient

Wang HY, Song QK, Yue ZD, Wang L, Fan ZH, Wu YF, Dong CB, Zhang Y, Meng MM, Zhang K, Jiang L, Ding HG, Zhang YN, Yang YP, Liu FQ

- 4470** Multi-slice spiral computed tomography in diagnosing unstable pelvic fractures in elderly and effect of less invasive stabilization

Huang JG, Zhang ZY, Li L, Liu GB, Li X

SYSTEMATIC REVIEWS

- 4480** Distribution and changes in hepatitis C virus genotype in China from 2010 to 2020

Yang J, Liu HX, Su YY, Liang ZS, Rao HY

CASE REPORT

- 4494** Bow hunter's syndrome successfully treated with a posterior surgical decompression approach: A case report and review of literature

Orlandi N, Cavallieri F, Grisendi I, Romano A, Ghadirpour R, Napoli M, Moratti C, Zanichelli M, Pascarella R, Valzania F, Zedde M

- 4502** Histological remission of eosinophilic esophagitis under asthma therapy with IL-5 receptor monoclonal antibody: A case report

Huguenot M, Bruhm AC, Essig M

- 4509** Cutaneous mucosa-associated lymphoid tissue lymphoma complicating Sjögren's syndrome: A case report and review of literature

Liu Y, Zhu J, Huang YH, Zhang QR, Zhao LL, Yu RH

- 4519** Plexiform neurofibroma of the cauda equina with follow-up of 10 years: A case report

Chomanskis Z, Juskys R, Cepkus S, Dulko J, Hendrixson V, Ruksenas O, Rocka S

- 4528** Mixed porokeratosis with a novel mevalonate kinase gene mutation: A case report

Xu HJ, Wen GD

- 4535** Isolated pancreatic injury caused by abdominal massage: A case report

Sun BL, Zhang LL, Yu WM, Tuo HF

- 4541** Bronchiolar adenoma with unusual presentation: Two case reports
Du Y, Wang ZY, Zheng Z, Li YX, Wang XY, Du R
- 4550** Periodontal-orthodontic interdisciplinary management of a “periodontally hopeless” maxillary central incisor with severe mobility: A case report and review of literature
Jiang K, Jiang LS, Li HX, Lei L
- 4563** Anesthesia management for cesarean section in a pregnant woman with odontogenic infection: A case report
Ren YL, Ma YS
- 4569** Convulsive-like movements as the first symptom of basilar artery occlusive brainstem infarction: A case report
Wang TL, Wu G, Liu SZ
- 4574** Globe luxation may prevent myopia in a child: A case report
Li Q, Xu YX
- 4580** Computer tomography-guided negative pressure drainage treatment of intrathoracic esophagojejunal anastomotic leakage: A case report
Jiang ZY, Tao GQ, Zhu YF
- 4586** Primary or metastatic lung cancer? Sebaceous carcinoma of the thigh: A case report
Wei XL, Liu Q, Zeng QL, Zhou H
- 4594** Perianesthesia emergency repair of a cut endotracheal tube’s inflatable tube: A case report
Wang TT, Wang J, Sun TT, Hou YT, Lu Y, Chen SG
- 4601** Diagnosis of cytomegalovirus encephalitis using metagenomic next-generation sequencing of blood and cerebrospinal fluid: A case report
Xu CQ, Chen XL, Zhang DS, Wang JW, Yuan H, Chen WF, Xia H, Zhang ZY, Peng FH
- 4608** Primary sigmoid squamous cell carcinoma with liver metastasis: A case report
Li XY, Teng G, Zhao X, Zhu CM
- 4617** Acute recurrent cerebral infarction caused by moyamoya disease complicated with adenomyosis: A case report
Zhang S, Zhao LM, Xue BQ, Liang H, Guo GC, Liu Y, Wu RY, Li CY
- 4625** Serum-negative Sjogren's syndrome with minimal lesion nephropathy as the initial presentation: A case report
Li CY, Li YM, Tian M
- 4632** Successful individualized endodontic treatment of severely curved root canals in a mandibular second molar: A case report
Xu LJ, Zhang JY, Huang ZH, Wang XZ

- 4640** Successful treatment in one myelodysplastic syndrome patient with primary thrombocytopenia and secondary deep vein thrombosis: A case report
Liu WB, Ma JX, Tong HX
- 4648** Diagnosis of an extremely rare case of malignant adenomyoepithelioma in pleomorphic adenoma: A case report
Zhang WT, Wang YB, Ang Y, Wang HZ, Li YX
- 4654** Management about intravesical histological transformation of prostatic mucinous carcinoma after radical prostatectomy: A case report
Bai SJ, Ma L, Luo M, Xu H, Yang L
- 4661** Hepatopulmonary metastases from papillary thyroid microcarcinoma: A case report
Yang CY, Chen XW, Tang D, Yang WJ, Mi XX, Shi JP, Du WD
- 4669** PD-1 inhibitor in combination with fruquintinib therapy for initial unresectable colorectal cancer: A case report
Zhang HQ, Huang CZ, Wu JY, Wang ZL, Shao Y, Fu Z
- 4676** Cutaneous metastasis from esophageal squamous cell carcinoma: A case report
Zhang RY, Zhu SJ, Xue P, He SQ
- 4684** Rare pattern of Maisonneuve fracture: A case report
Zhao B, Li N, Cao HB, Wang GX, He JQ
- 4691** Suprasellar cistern tuberculoma presenting as unilateral ocular motility disorder and ptosis: A case report
Zhao BB, Tian C, Fu LJ, Zhang XB
- 4698** Development of plasma cell dyscrasias in a patient with chronic myeloid leukemia: A case report
Zhang N, Jiang TD, Yi SH
- 4704** Ovarian growing teratoma syndrome with multiple metastases in the abdominal cavity and liver: A case report
Hu X, Jia Z, Zhou LX, Kakongoma N

LETTER TO THE EDITOR

- 4709** Perfectionism and mental health problems: Limitations and directions for future research
Nazari N

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Jamir Pitton Rissardo, MD, Academic Research, Adjunct Associate Professor, Research Associate, Department of Medicine, Federal University of Santa Maria, Santa Maria 97105110, Brazil. jamirrissardo@gmail.com

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: Hua-Ge Yin, Production Department Director: Xu Guo, 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

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

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

PUBLICATION DATE

May 16, 2022

COPYRIGHT

© 2022 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>

Hepatopulmonary metastases from papillary thyroid microcarcinoma: A case report

Chuan-Yu Yang, Xuan-Wu Chen, Dong Tang, Wen-Jun Yang, Xiao-Xiao Mi, Jun-Ping Shi, Wei-Dong Du

Specialty type: Oncology

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): 0

Grade B (Very good): 0

Grade C (Good): C, C

Grade D (Fair): 0

Grade E (Poor): 0

P-Reviewer: Cainap C, Romania; Pop TL, Romania

Received: December 1, 2021

Peer-review started: December 1, 2021

First decision: January 12, 2022

Revised: January 18, 2022

Accepted: March 16, 2022

Article in press: March 16, 2022

Published online: May 16, 2022



Chuan-Yu Yang, Xuan-Wu Chen, Wei-Dong Du, Department of Hepatobiliary Surgery, The First Clinical Medical College of Zhejiang Chinese Medical University, Hangzhou 310003, Zhejiang Province, China

Dong Tang, Department of Medical Imaging, The Affiliated Hospital of Hangzhou Normal University, Hangzhou 310015, Zhejiang Province, China

Wen-Jun Yang, Department of Pathology, The Affiliated Hospital of Hangzhou Normal University, Hangzhou 310015, Zhejiang Province, China

Xiao-Xiao Mi, Jun-Ping Shi, Institute of Translational Medicine, The Affiliated Hospital of Hangzhou Normal University, Hangzhou 310015, Zhejiang Province, China

Corresponding author: Wei-Dong Du, MD, Chief Physician, Department of Hepatobiliary Surgery, The First Clinical Medical College of Zhejiang Chinese Medical University, No. 54 Youdian Road, Shangcheng District, Hangzhou 310003, Zhejiang Province, China. hzadu@163.com

Abstract

BACKGROUND

Papillary thyroid carcinoma (PTC) is the most common endocrine malignancy. Papillary thyroid microcarcinoma (PTMC) accounts for the majority of PTC cases. However, concurrent pulmonary and hepatic metastases of PTMC are rarely seen. Here, we present a patient with coexisting liver and lung metastases from PTMC.

CASE SUMMARY

We describe a 26-year-old woman with PTMC with multiple concurrent metastases. After 3 d of unexplained fever, she was admitted to our hospital. Her thyroid functional tests were abnormal. Her positron emission tomography (PET)/magnetic resonance imaging (MRI) examination showed increased fluorodeoxyglucose (FDG) metabolism and space-occupying lesions in the left lobe of the thyroid. Additionally, PET/MRI images revealed multiple nodules in the lung and liver with increased FDG metabolism. Chest computer tomography (CT) showed multiple pulmonary metastases. Abdominal ultrasound and liver MRI showed multiple space-occupying lesions in the liver. The patient underwent total thyroidectomy and central lymph node dissection. Postoperative pathological analysis showed a papillary microcarcinoma multiplex in the left lobe of the thyroid. A diagnosis of hepatopulmonary metastases from papillary thyroid microcarcinoma was made. The patient was given iodine-131 treatment one year

after the surgery. She recovered well after the operation, and the incision healed well. After discharge, she was treated with oral levothyroxine sodium tablets, and symptomatic and supportive treatments were also given to promote radioactive excretion and prevent bone marrow suppression by iodine-131 treatment.

CONCLUSION

Since patients with thyroid cancer concurrent with hepatopulmonary metastases have rarely been reported, our case will highlight the clinical and pathological profiles of these patients.

Key Words: Papillary thyroid microcarcinoma; Distant metastasis; Liver; Lung; Case report

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Concurrent pulmonary and hepatic metastases of papillary thyroid microcarcinoma are not often seen due to their rarity and nonspecific presentations. Herein, we provided a successful example of the diagnosis and treatment of pulmonary and hepatic metastases of papillary thyroid microcarcinoma in a young female patient. Our case emphasizes that distant metastases of papillary thyroid carcinoma can occur in young patients.

Citation: Yang CY, Chen XW, Tang D, Yang WJ, Mi XX, Shi JP, Du WD. Hepatopulmonary metastases from papillary thyroid microcarcinoma: A case report. *World J Clin Cases* 2022; 10(14): 4661-4668

URL: <https://www.wjgnet.com/2307-8960/full/v10/i14/4661.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i14.4661>

INTRODUCTION

Thyroid cancer is the most common endocrine tumor with a strong female preponderance (3:1)[1]. Papillary thyroid carcinoma (PTC) is a well-differentiated endocrine malignancy. Papillary thyroid microcarcinoma (PTMC) is defined by the World Health Organization as PTC with a maximum diameter ≤ 10 mm. Papillary thyroid microcarcinoma increases the incidence of thyroid cancer by 50% [2]. The main manifestations of PTCs are neck masses and thyroid nodules. However, distant metastasis of PTMC is rare, affecting bone, lung and chest lymph nodes, although local regional metastases in neck lymph nodes are commonly seen[3-5]. PTMC simultaneously metastasized to the liver and lung is very rare. Here, we report a case of PTMC concurrent with liver and pulmonary metastases.

CASE PRESENTATION

Chief complaints

A 26-year-old woman who presented with unexplained fever was admitted to our hospital for further examination.

History of present illness

The patient showed a clear mind and no significant weight loss in the past three months.

History of past illness

She had no smoking or drinking history and no family history of tumors. She had no cough or expectoration. Ethical approval for publishing this case was obtained from the First Medical College of Zhejiang Chinese Medical University Research Ethics Committee.

Personal and family history

She denied a family history of hereditary disease.

Physical examination

Her physical examination showed nothing abnormal.

Laboratory examinations

Her thyroid function tests showed elevated levels of thyroid-stimulating hormone and antithyro-

globulin antibody, with a decreased level of thyroglobulin. Her biochemical tests showed elevated levels of triglycerides and cholesterol. Routine blood tests showed neutrophilia and lymphocytosis. Humoral tumor screening presented an elevated level of CA50. Her blood coagulation function was normal.

Imaging examinations

She underwent a positron emission tomography/magnetic resonance imaging (PET/MRI) examination in our hospital. The PET/MRI images showed a space-occupying lesion in the left thyroid with increased fluorodeoxyglucose (FDG) metabolism (Figure 1A), and a Computer tomography (CT) scan revealed that the lesions in the left lobe of the thyroid showed low-density nodular changes involving the thyroid capsule (Figure 1B). The PET/MRI images also showed multiple diffuse nodules (maximum 0.8 cm) in the lung with increased FDG metabolism and multiple nodules (maximum 2.0 cm) in the liver with increased FDG metabolism (Figure 1). Chest CT showed multiple metastases in both lungs, multiple low-density shadows in the liver, and small calcifications in the left breast (Figure 2). Abdominal ultrasound showed a fatty liver and multiple liver nodules (Figure 3A). MRI showed multiple space-occupying lesions in the liver (Figure 3B-D). Whole-body bone imaging and organ tomography showed a metabolically active left tibia and unevenly increased local bone density (Figure 4).

FINAL DIAGNOSIS

Collectively, based on the medical imaging results and pathological features, a diagnosis of hepatopulmonary metastasis from papillary thyroid microcarcinoma was made.

TREATMENT

The patient underwent thyroidectomy and central node dissection. Postoperative pathology revealed multiple papillary microcarcinomas in the left thyroid and one foci with the follicular subtype (Figure 5). The carcinomas had invaded the capsule and presented no lymph node metastasis. The immunohistochemical results showed positive signals for CK-19, Gal-3, TTF, and Ki-67 (3%) (Figure 6).

OUTCOME AND FOLLOW-UP

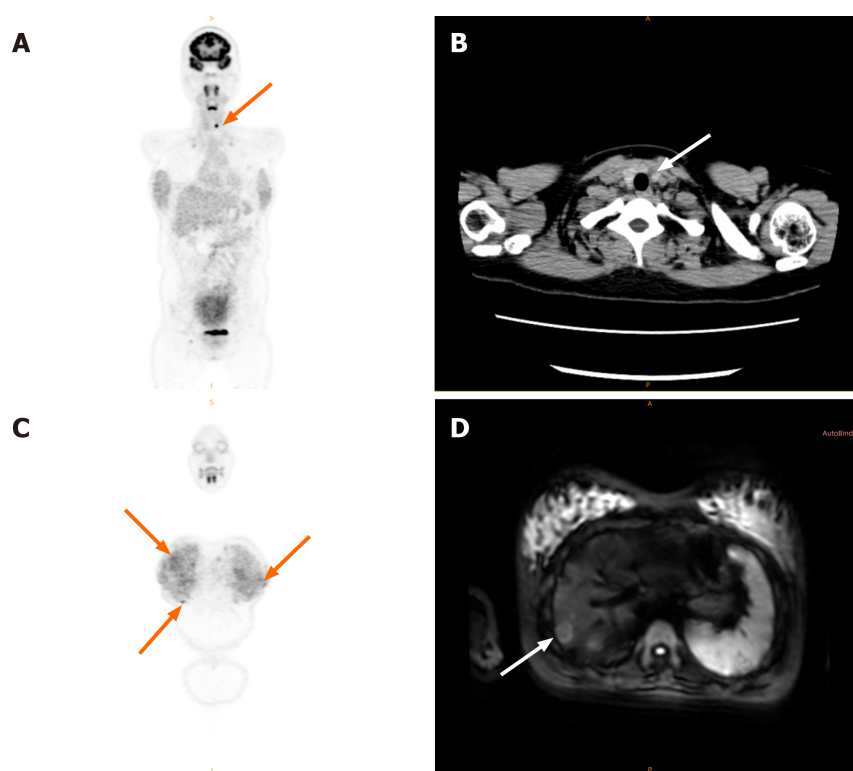
One year after thyroid cancer surgery, the patient was given iodine-131 treatment in our hospital. As shown in Figure 7, iodine imaging in the thyroid area was considered to be residual thyroid tissue. Multiple small nodules were found in both lungs, with no significant iodine uptake. A small amount of pleural effusion was observed on both sides of the lung. Multiple lymph nodes were present in the bilateral neck and supraclavicular areas without iodine intake. Physiological iodine intake was observed in the nasopharynx, oral cavity, salivary glands, gastrointestinal tract, and bladder (Figure 7). The patient had recovered well after the operation, and the incision had healed well. The patient was treated after the iodine therapy with daily oral levothyroxine sodium administration.

DISCUSSION

PTC accounts for approximately 85% of all follicular-derived well-differentiated thyroid cancers[6]. The 10-year survival rate is more than 80%, and these tumors are considered to be indolent[7,8]. PTMC is a subtype of PTC with a foci diameter ≤ 10 mm. PTMC accounts for the majority of PTC cases. Distant metastasis of PTMC is rare. The most common metastatic sites include the bone and lung, while brain, eye, breast, liver, kidney, muscle, and skin metastases are not commonly seen and only appear in patients with advanced tumor diseases. Here, we present a patient with PTMC who had simultaneous metastases to the lung and liver. Coexisting lung and liver metastases in PTC patients are not commonly seen.

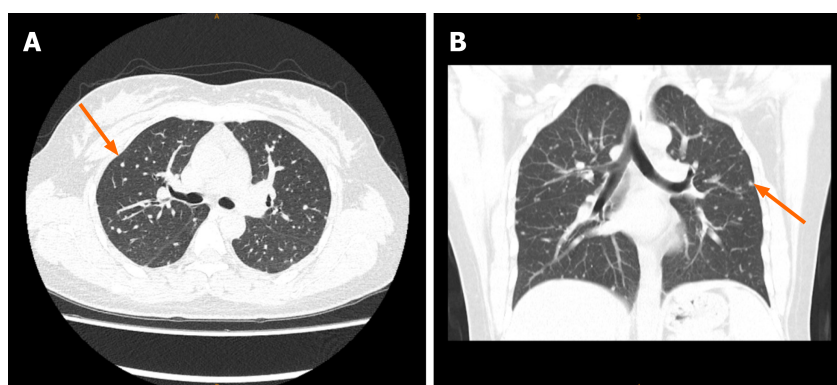
Predictive factors for PTC metastasis included age, sex, thyroid function, Hashimoto's thyroiditis, multifocal tumor, tumor size, capsular invasion, and extrathyroidal extensions. The histopathological characteristics of tumors, such as their bilaterality, multifocality, extrathyroidal extension, capsular invasion, and lymph node metastasis, are important indicators of their invasiveness and they affect the prognosis[9,10].

Liver metastasis from PTMC is a rare event with a reported frequency of only 0.5%[11]. Liver masses can be detected by various imaging modalities, such as ultrasonography, computed tomography, and



DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

Figure 1 Positron emission tomography/magnetic resonance imaging images. A: High concentration iodine uptake in the left lobe of the thyroid (arrow); B: Plain computer tomography scan showing the lesions in the left lobe of the thyroid have low-density nodular changes (arrow) involving the thyroid capsule; C: Positron emission tomography (PET)/magnetic resonance imaging (MRI) images showing multiple diffuse nodules in the lung (arrow); D: PET-MRI showing a high concentration of iodide uptake in the liver metastases (arrow).

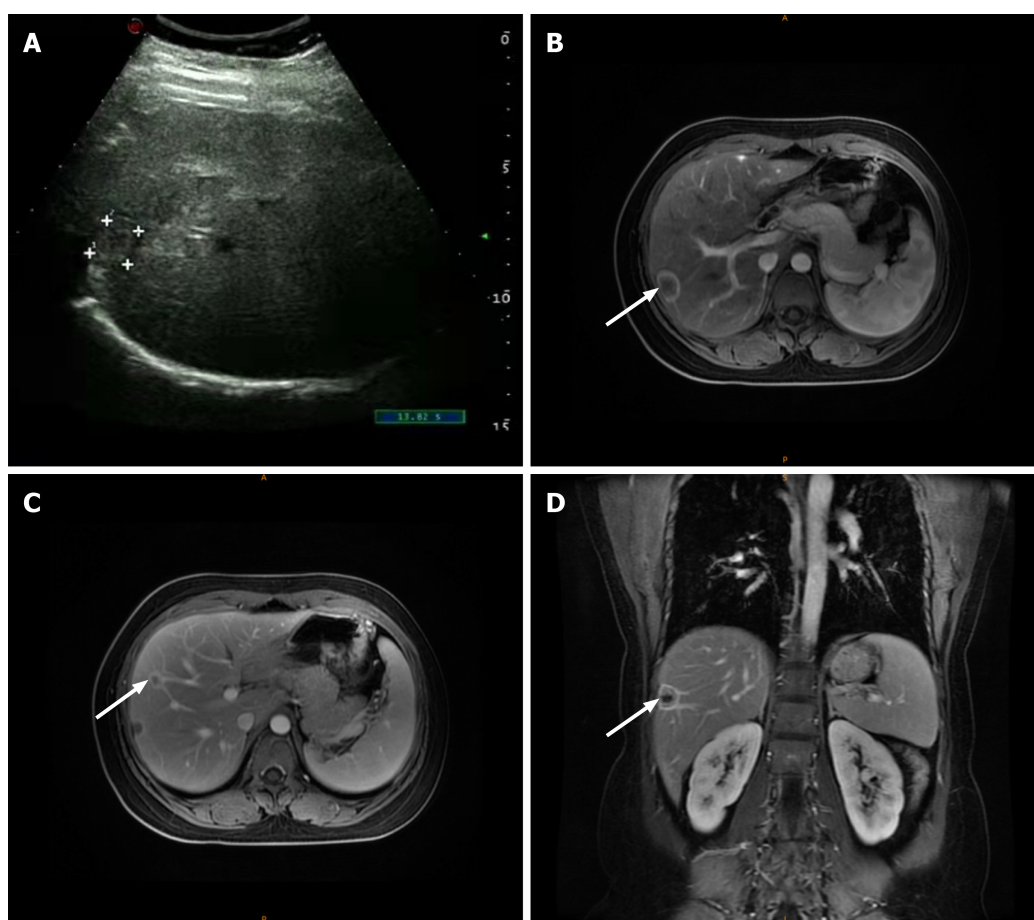


DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

Figure 2 Chest computer tomography. A-B: Multiple nodules in both lungs suggest metastasis (arrow).

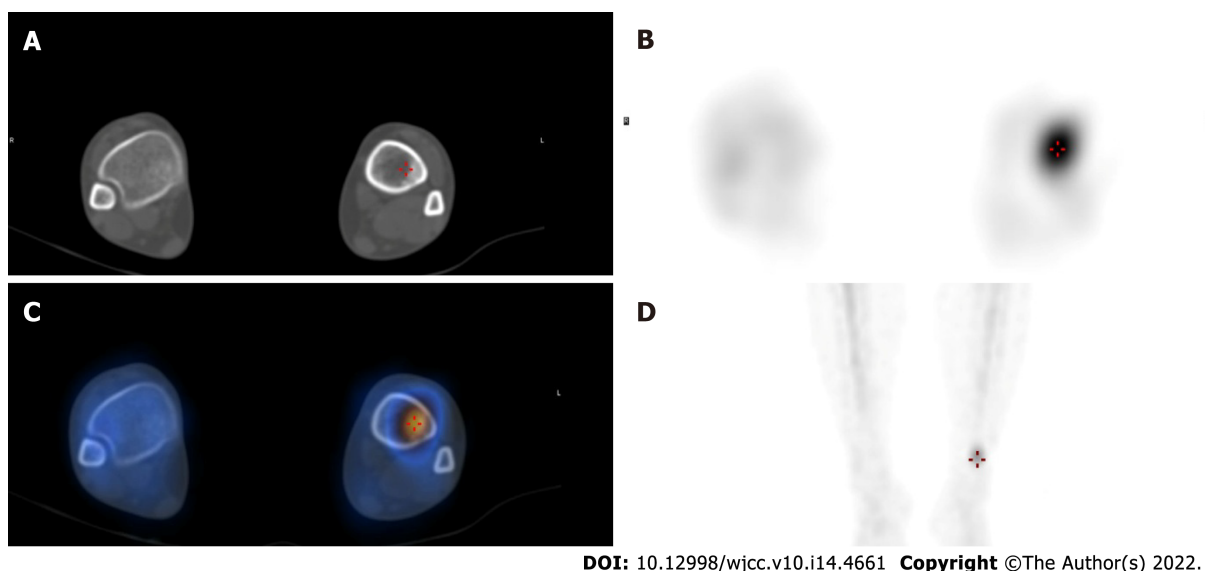
magnetic resonance imaging. Liver masses are usually ^{131}I -negative in PTMC patients with liver metastasis[12], which is consistent with the observations in our patient. PTC liver metastasis has a poor prognosis. Surgical resection of liver lesions has been reported to offer the best chance for prolonged survival[13]. An increased age in cases of thyroid cancer with lung metastasis increases the mortality risk. In a study performed by Huang, the mortality rates of thyroid cancer with lung metastasis were 32.78% (118/360), 46.71% (156/334), 53.93% (199/369), 58.96% (158/268) and 82.76% (72/87) in patients aged ≤ 55 years, $> 55 \leq 65$ years, $> 65 \leq 75$ years, $> 75 \leq 85$ years and > 85 years[14]. Since our patient was a young mother of a young child, we suggested routine follow-up liver function tests to monitor the pathophysiology of the liver.

PTMC has no early typical symptoms due to its anatomic location. Therefore, a delay in clinical diagnosis is inevitable, which leads to its diagnosis in the advanced stage. Thus, a primary tumor in the thyroid is usually not diagnosed until the symptoms of a secondary metastatic tumor appear[15]. In this case, the patient did not exhibit clinical manifestations of the disease at the initial stage, and no corres-



DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

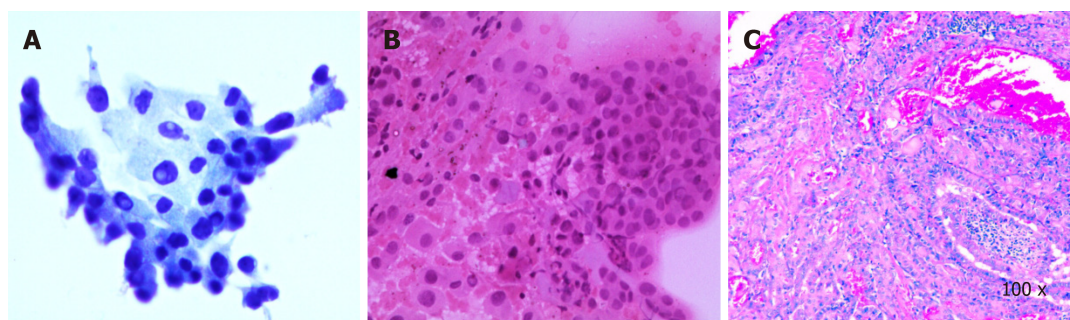
Figure 3 Liver metastasis. A: Abdominal ultrasound showing mixed medium echo nodules near the hepatic capsule in the right lobe of the liver, suggesting metastasis; B-D: Liver magnetic resonance imaging showing multiple liver metastases (arrow).



DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

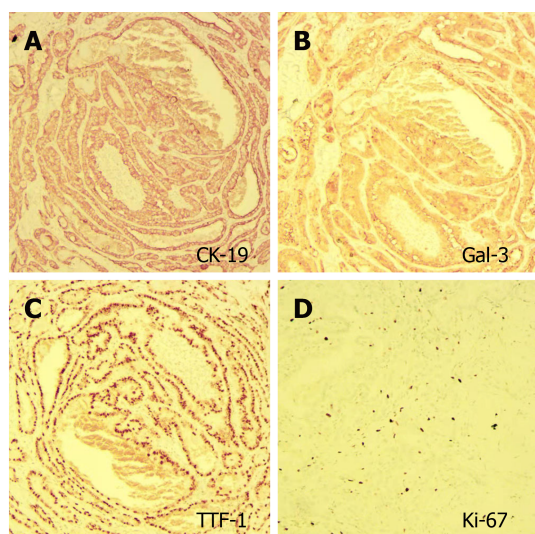
Figure 4 Whole-body bone imaging and organ tomography. A: Tibial computer tomography; B-D: Radionuclide imaging; C: Radionuclide color imaging.

ponding clinical symptoms were found even after metastasis occurred. Multiple metastases of thyroid cancer were incidentally found during the patient's examination for unexplained fever, indicating that the disease is easily missed. Therefore, a better clinical index or screening method is needed.



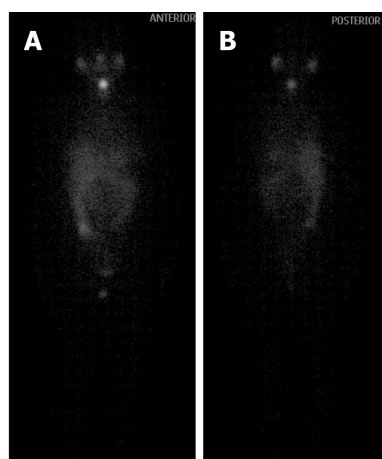
DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

Figure 5 Postoperative pathology in the left thyroid. A: Liquid-based cytology of fine-needle aspiration; B: Smear staining of fine-needle puncture. C: HE staining.



DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

Figure 6 Immunohistochemical staining. A: CK-19 staining; B: Gal-3 staining; C: TTF-1 staining; D: Ki-67 staining.



DOI: 10.12998/wjcc.v10.i14.4661 Copyright ©The Author(s) 2022.

Figure 7 Iodine scan after iodine-131 treatment. A: Anterior; B: Posterior.

Male patients with distant metastases from PTMC have a high risk of death[8,15]. However, PTC patients with distant metastases have lower levels of dedifferentiation than differentiated thyroid carcinoma patients with distant metastases. Therefore, PTC exhibits more indolent behaviors than differentiated thyroid carcinoma, even with distant metastases. PTC nevertheless has a generally favorable prognosis for long-term survival, even with distant metastases. The clinical manifestations

vary from the early to late stages of the disease[6]. The maximal PTMC foci is 1 cm or less[16]. In our patient, postoperative pathology revealed one PCT foci with a diameter of 0.8 cm. Total thyroidectomy with central node dissection is an effective treatment for PTC patients[17]. Long-term follow-up of PTMC patients is needed after surgical treatment[18,19]. Periodic thyroglobulin and thyroglobulin autoantibody measurements are recommended for PTMC patients[20]. An active surveillance approach is recommended by the American Thyroid Association guidelines as an alternative option for patients with low-risk PTMC[18]. Our patient was a 26-year-old woman with PTMC with multiple metastases. She was recommended to take levothyroxine sodium tablets and consume a low iodine diet after her surgery. We also suggested routine thyroid function test and liver imaging during follow-up. She is still alive and actively engaging in daily life.

Our patient's diagnosis of hepatopulmonary metastasis from papillary thyroid carcinoma was based on imaging findings and pathological results. PET/MRI, ultrasonography, CT, and MRI revealed multiple nodules in the liver and lung. Our case will provide a valuable reference for the diagnosis and treatment of papillary thyroid microcarcinoma patients in the future.

CONCLUSION

In conclusion, we present the case of a young woman with PTMC metastasis to her liver and lung. Since patients with thyroid cancer concurrent with hepatopulmonary metastases have rarely been reported, our case highlights the clinical and pathological profiles of these patients.

ACKNOWLEDGEMENTS

The authors would like to thank colleagues from the Institute of Translational Medicine of the Affiliated Hospital of Hangzhou Normal University and colleagues from the Department of Hepatobiliary Surgery of the First Clinical Medical College of Zhejiang Chinese Medical University for their support and collaboration.

FOOTNOTES

Author contributions: Yang CY and Chen XW provided the case; Tang D performed radiological imaging analysis; Yang WJ performed pathological imaging analysis; Yang CY was involved in the biomedical analysis; Yang CY and Mi XX wrote the manuscript with input from Chen XW, Tang D and Yang WJ; Du WD and Shi JP revised the manuscript; all authors have contributed significantly.

Supported by the Joint Funds of the Zhejiang Provincial Natural Science Foundation of China, No. LBY21H030001; and the Science and Technology Planning Project of Zhejiang Province, No. 2020KY708.

Informed consent statement: Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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

CARE Checklist (2016) statement: Our case report is written according to 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 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: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: China

ORCID number: Chuan-Yu Yang 0000-0001-8159-619X; Xuan-Wu Chen 0000-0001-9537-1135; Dong Tang 0000-0001-5902-8604; Wen-Jun Yang 0000-0001-5251-532X; Xiao-Xiao Mi 0000-0001-5516-3139; Jun-Ping Shi 0000-0001-9434-897X; Wei-Dong Du 0000-0002-4245-3257.

S-Editor: Xing YX

L-Editor: A

P-Editor: Xing YX

REFERENCES

- 1 **Stewart LA**, Kuo JH. Advancements in the treatment of differentiated thyroid cancer. *Ther Adv Endocrinol Metab* 2021; **12**: 20420188211000251 [PMID: [33796254](#) DOI: [10.1177/20420188211000251](#)]
- 2 **Kitahara CM**, Sosa JA. The changing incidence of thyroid cancer. *Nat Rev Endocrinol* 2016; **12**: 646-653 [PMID: [27418023](#) DOI: [10.1038/nrendo.2016.110](#)]
- 3 **Mazzaferrri EL**, Jhiang SM. Long-term impact of initial surgical and medical therapy on papillary and follicular thyroid cancer. *Am J Med* 1994; **97**: 418-428 [PMID: [7977430](#) DOI: [10.1016/0002-9343\(94\)90321-2](#)]
- 4 **Sampson E**, Brierley JD, Le LW, Rotstein L, Tsang RW. Clinical management and outcome of papillary and follicular (differentiated) thyroid cancer presenting with distant metastasis at diagnosis. *Cancer* 2007; **110**: 1451-1456 [PMID: [17705176](#) DOI: [10.1002/cncr.22956](#)]
- 5 **Carmel Neiderman NN**, Duek I, Ravia A, Yaka R, Warshavsky A, Ringel B, Muhanna N, Horowitz G, Ziv Baran T, Fliss DM. The incidence of postoperative re-stratification for recurrence in well-differentiated thyroid cancer-a retrospective cohort study. *Gland Surg* 2021; **10**: 2354-2367 [PMID: [34527547](#) DOI: [10.21037/gs-21-105](#)]
- 6 **Lim H**, Devesa SS, Sosa JA, Check D, Kitahara CM. Trends in Thyroid Cancer Incidence and Mortality in the United States, 1974-2013. *JAMA* 2017; **317**: 1338-1348 [PMID: [28362912](#) DOI: [10.1001/jama.2017.2719](#)]
- 7 **Yu XM**, Wan Y, Sippel RS, Chen H. Should all papillary thyroid microcarcinomas be aggressively treated? *Ann Surg* 2011; **254**: 653-660 [PMID: [21876434](#) DOI: [10.1097/SLA.0b013e318230036d](#)]
- 8 **Weng HY**, Yan T, Qiu WW, Xi C, Hou LY, Yang ZL, Qiu ZL. Long-term outcomes and prognostic factors in papillary thyroid microcarcinoma patients with distant metastases. *Endocrine* 2021 [PMID: [34699028](#) DOI: [10.1007/s12020-021-02906-8](#)]
- 9 **Zhao L**, Sun X, Luo Y, Wang F, Lyu Z. Clinical and pathologic predictors of lymph node metastasis in papillary thyroid microcarcinomas. *Ann Diagn Pathol* 2020; **49**: 151647 [PMID: [33126150](#) DOI: [10.1016/j.anndiagpath.2020.151647](#)]
- 10 **Jeon MJ**, Kim WG, Choi YM, Kwon H, Lee YM, Sung TY, Yoon JH, Chung KW, Hong SJ, Kim TY, Shong YK, Song DE, Kim WB. Features Predictive of Distant Metastasis in Papillary Thyroid Microcarcinomas. *Thyroid* 2016; **26**: 161-168 [PMID: [26563473](#) DOI: [10.1089/thy.2015.0375](#)]
- 11 **Salvatori M**, Perotti G, Rufini V, Maussier ML, Summari V, Fadda G, Troncone L. Solitary liver metastasis from Hürthle cell thyroid cancer: a case report and review of the literature. *J Endocrinol Invest* 2004; **27**: 52-56 [PMID: [15053244](#) DOI: [10.1007/BF03350911](#)]
- 12 **Song HJ**, Xue YL, Xu YH, Qiu ZL, Luo QY. Rare metastases of differentiated thyroid carcinoma: pictorial review. *Endocr Relat Cancer* 2011; **18**: R165-R174 [PMID: [21632805](#) DOI: [10.1530/ERC-11-0068](#)]
- 13 **Kuo CS**, Tang KT, Lin JD, Yang AH, Lee CH, Lin HD. Diffuse sclerosing variant of papillary thyroid carcinoma with multiple metastases and elevated serum carcinoembryonic antigen level. *Thyroid* 2012; **22**: 1187-1190 [PMID: [23050785](#) DOI: [10.1089/thy.2011.0361](#)]
- 14 **Huang X**, Xia Q, Huang Y, Peng A, Yang J. Age increased the cancer-specific mortality risk of thyroid cancer with lung metastasis. *Clin Endocrinol (Oxf)* 2022 [PMID: [34990026](#) DOI: [10.1111/cen.14675](#)]
- 15 **Nunes KS**, Matos LL, Cavaleiro BG, Magnabosco FF, Tavares MR, Kulcsar MA, Hoff AO, Kowalski LP, Leite AK. Risk factors associated with disease-specific mortality in papillary thyroid cancer patients with distant metastases. *Endocrine* 2021 [PMID: [34665427](#) DOI: [10.1007/s12020-021-02901-z](#)]
- 16 **Pu W**, Shi X, Yu P, Zhang M, Liu Z, Tan L, Han P, Wang Y, Ji D, Gan H, Wei W, Lu Z, Qu N, Hu J, Hu X, Luo Z, Li H, Ji Q, Wang J, Zhang X, Wang YL. Single-cell transcriptomic analysis of the tumor ecosystems underlying initiation and progression of papillary thyroid carcinoma. *Nat Commun* 2021; **12**: 6058 [PMID: [34663816](#) DOI: [10.1038/s41467-021-26343-3](#)]
- 17 **Pastorčić Grgić M**, Stubljar B, Perše P, Zekan Vučetić M, Šitić S. Total Thyroidectomy with Central Node Dissection is a Valuable Option in Papillary Thyroid Cancer Treatment. *Acta Clin Croat* 2020; **59**: 102-107 [PMID: [34219891](#) DOI: [10.20471/acc.2020.59.s1.13](#)]
- 18 **Haugen BR**, Alexander EK, Bible KC, Doherty GM, Mandel SJ, Nikiforov YE, Pacini F, Randolph GW, Sawka AM, Schlumberger M, Schuff KG, Sherman SI, Sosa JA, Steward DL, Tuttle RM, Wartofsky L. 2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer: The American Thyroid Association Guidelines Task Force on Thyroid Nodules and Differentiated Thyroid Cancer. *Thyroid* 2016; **26**: 1-133 [PMID: [26462967](#) DOI: [10.1089/thy.2015.0020](#)]
- 19 **Gao M**, Ge M, Ji Q, Cheng R, Lu H, Guan H. 2016 Chinese expert consensus and guidelines for the diagnosis and treatment of papillary thyroid microcarcinoma. *Cancer Biol Med* 2017; **14**: 203-211 [PMID: [28948061](#) DOI: [10.20892/j.issn.2095-3941.2017.0051](#)]
- 20 **Knappe L**, Giovanella L. Life after thyroid cancer: the role of thyroglobulin and thyroglobulin antibodies for postoperative follow-up. *Expert Rev Endocrinol Metab* 2021; **16**: 273-279 [PMID: [34693849](#) DOI: [10.1080/17446651.2021.1993060](#)]



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>

