OPINION REVIEW

1 Necessary problems in re-emergence of COVID-19
Chen S, Ren LZ, Ouyang HS, Liu S, Zhang LY

REVIEW

8 COVID-19: An overview and a clinical update
Krishnan A, Hamilton JP, Alqahtani SA, Woreta TA

ORIGINAL ARTICLE

Retrospective Cohort Study

24 Log odds of positive lymph nodes is a better prognostic factor for oesophageal signet ring cell carcinoma than N stage

36 Modified procedure for prolapse and hemorrhoids: Lower recurrence, higher satisfaction

47 Angiotensin converting enzymes inhibitors or angiotensin receptor blockers should be continued in COVID-19 patients with hypertension
Tian C, Li N, Bai Y, Xiao H, Li S, Ge QQ, Shen N, Ma QB

Retrospective Study

61 Massively prolapsed intervertebral disc herniation with interlaminar endoscopic spine system Delta endoscope: A case series

71 Primary lung cancer with radioiodine avidity: A thyroid cancer cohort study
Lu YL, Chen ST, Ho TY, Chan WH, Wong RJ, Hsueh C, Lin SF

81 Is traumatic meniscal lesion associated with acute fracture morphology changes of tibia plateau? A series of arthroscopic analysis of 67 patients
Chen YD, Chen SX, Liu HG, Zhao XS, Ou WH, Li HX, Huang HX

Observational Study

91 Role of relaxin in diastasis of the pubic symphysis peripartum

SYSTEMATIC REVIEWS

102 Chinese medicine formulas for nonalcoholic fatty liver disease: Overview of systematic reviews
Dai L, Zhou WJ, Zhong LLD, Tang XD, Ji G
## Contents

### Comparative Profile for COVID-19 Cases from China and North America: Clinical Symptoms, Comorbidities and Disease Biomarkers

Badawi A, Vasileva D

### META-ANALYSIS

### Polymerase Chain Reaction-Based Tests for Detecting Helicobacter Pylori Clarithromycin Resistance in Stool Samples: A Meta-Analysis

Gong RJ, Xu CX, Li H, Liu XM

### CASE REPORT

### Surgery-First for a Patient with Mild Hemifacial Microsomia: A Case Report and Review of Literature


### Late-Onset Non-Islet Cell Tumor Hypoglycemia: A Case Report


### Risk of Group Aggregative Behavior during COVID-19 Outbreak: A Case Report

Zuo H, Hu ZB, Zhu F

### Low-Grade Fibromyxoid Sarcoma of the Liver: A Case Report

Dugalic V, Ignjatovic II, Kovac JD, Ilic N, Sopota J, Ostojic SR, Vasin D, Bogdanovic MD, Dumić I, Milovanovic T

### Treatment of Stanford Type A Aortic Dissection with Triple Pre-Fenestration, Reduced Diameter, and Three-Dimensional-Printing Techniques: A Case Report


### Hyperprolactinemia Due to Pituitary Metastasis: A Case Report


### Pulmonary Thromboembolism after Distal Ulna and Radius Fractures Surgery: A Case Report and a Literature Review

Lv B, Xue F, Shen YC, Hu FB, Pan MM

### Myeloid Neoplasm with Eosinophilia and Rearrangement of Platelet-Derived Growth Factor Receptor Beta Gene in Children: Two Case Reports

Wang SC, Yang WY

### Sclerosing Angiomatoid Nodular Transformation of the Spleen: A Case Report and Literature Review

Li SX, Fan YH, Wu H, Lv GY

### Late Recurrence of Papillary Thyroid Cancer from Needle Tract Implantation after Core Needle Biopsy: A Case Report

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>232</td>
<td>Type A aortic dissection developed after type B dissection with the presentation of shoulder pain: A case report</td>
<td>Yin XB, Wang XK, Xu S, He CY</td>
</tr>
<tr>
<td>236</td>
<td>Hemosuccus pancreaticus caused by gastroduodenal artery pseudoaneurysm associated with chronic pancreatitis: A case report and review of literature</td>
<td>Cui HY, Jiang CH, Dong J, Wen Y, Chen YW</td>
</tr>
<tr>
<td>245</td>
<td>Endoscopic treatment for acute appendicitis with coexistent acute pancreatitis: Two case reports</td>
<td>Du ZQ, Ding WJ, Wang F, Zhou XR, Chen TM</td>
</tr>
<tr>
<td>252</td>
<td>Residual tumor and central lymph node metastasis after thermal ablation of papillary thyroid carcinoma: A case report and review of literature</td>
<td>Hua Y, Yang JW, He L, Xu H, Huo HZ, Zhu CF</td>
</tr>
<tr>
<td>262</td>
<td>Endoscopic salvage treatment of histoacryl after stent application on the anastomotic leak after gastrectomy: A case report</td>
<td>Kim HS, Kim Y, Han JH</td>
</tr>
<tr>
<td>267</td>
<td>Immunosuppressant treatment for IgG4-related sclerosing cholangitis: A case report</td>
<td>Kim JS, Choi WH, Lee KA, Kim HS</td>
</tr>
<tr>
<td>274</td>
<td>Intraparenchymal hemorrhage after surgical decompression of an epencephalon arachnoid cyst: A case report</td>
<td>Wang XJ</td>
</tr>
<tr>
<td>278</td>
<td>Krukenberg tumor with concomitant ipsilateral hydrenephrosis and spermatic cord metastasis in a man: A case report</td>
<td>Tsao SH, Chuang CK</td>
</tr>
<tr>
<td>284</td>
<td>Simultaneous bilateral acromial base fractures after staged reverse total shoulder arthroplasty: A case report</td>
<td>Kim DH, Kim BS, Cho CH</td>
</tr>
</tbody>
</table>
ABOUT COVER
Editorial Board Member of World Journal of Clinical Cases, Dr. Antonio Corvino is a PhD in the Motor Science and Wellness Department of University of Naples “Parthenope”. After obtaining his MD degree from the School of Medicine, Second University of Naples (2008), he completed a residency in Radiology at the University of Naples Federico II (2014). Following post-graduate training at the Catholic University of Rome, yielding a second level Master’s degree in “Internal Ultrasound Diagnostic and Echo-Guided Therapies” (2015), he served on the directive board of Young Directive of Italian Society of Ultrasound in Medicine and Biology (2016-2018). His ongoing research interests involve ultrasound and ultrasound contrast media in abdominal and non-abdominal applications, mainly in gastrointestinal, hepatic, vascular, and musculoskeletal imaging. (L-Editor: Filipodia)

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, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for WJCC as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3.

RESPONSIBLE EDITORS FOR THIS ISSUE
Production Editor: Yan-Xia Xing; Production Department Director: Yun-Xiaojian Wu; 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
January 6, 2021

COPYRIGHT
© 2021 Baishideng Publishing Group Inc.
Late recurrence of papillary thyroid cancer from needle tract implantation after core needle biopsy: A case report

Yon-Hee Kim, In-Ho Choi, Jong-Eun Lee, Zisun Kim, Sun-Wook Han, Sung-Mo Hur, Jihyoun Lee

Abstract

BACKGROUND

Papillary thyroid cancer (PTC) has good prognosis so that the local recurrence or distant metastasis can occur later on the lifetime follow up. In this study, we report recurrence of PTC in subcutaneous area combined with lymph node metastasis. A suspicion of needle tract implantation after core needle biopsy was found.

CASE SUMMARY

A 66-year-old female patients who underwent right thyroid lobectomy for PTC complained of palpable nodule on anterior neck area. The location of the palpable nodule was not associated with her postoperative scar. After excision of the skin tumor, it was diagnosed as recurrence of PTC. Furthermore, results of subsequent imaging showed lymph node metastasis on her right cervical area. According to the previous medical records, the patient received core needle biopsy through the neck of the patient midline and hematoma was noted after the procedure. The time interval from the first diagnosis to local recurrence or metastasis to the skin and lymph nodes was ten years. As treatment, the patient underwent lymph node dissection in the right and completion thyroidectomy for radioisotope treatment.

CONCLUSION

Needle tract implantation can occur after core needle biopsy. Further studies are needed to compare core-needle biopsy and fine-needle aspiration.
INTRODUCTION

Papillary thyroid carcinoma (PTC) has good prognosis and the survivals have been assessed as 10 years, which is exceeding 90%. Smaller tumors can be incidentally found by ultrasound before evident symptoms emerged, PTCs less than 1 cm has excellent prognosis. The recurrence rate are higher in young age but the outcome is better than the older patients[1]. It has been known that the most common site of distant metastasis is lung, followed by bones and multiple organ involvement[2].

Fine needle aspiration cytology (FNAC) is widely used for the diagnosis of PTC. It is considered safe and effective due to the low chance of fatal complications. Needle tract implantation (NTI) from FNAC was reported in less than 0.2% of the cases[3]. However, NTI from core needle biopsy (CNB) has not yet been investigated. In a retrospective analysis of 11745 PTC patients, 9.1% of NTI patients showed local recurrence, while 40.9% had distant metastasis during follow-up[4].

The authors found late skin recurrence combined with lymph node metastasis of PTC, presumably from NTI after CNB.

CASE PRESENTATION

Chief complaints

A 66-year-old female patient with the chief complaint of an anterior neck mass sought consult from our surgical department.

History of present illness

The mass was located midline to the right side. It was first noticed a few months ago. She claimed that it rapidly grew one month prior to consultation.

She had a 4-cm scar from her previous right thyroid lobectomy ten years ago. At her initial visit for the thyroidectomy, an irregular ill-defined mixed hypoechochogenic nodule with internal calcification was found on the mid pole of the right thyroid (Figure 1A). FNAC along with CNB using a 20-gauge Franseen needle was performed at the time of diagnosis, there found a hematoma after procedure (Figure 1B). A pathologic report revealed an 8-mm papillary carcinoma with focal extension to perithyroidal soft tissue without resection margin involvement and lymph nodal metastasis. The patient was lost to follow-up for 115 months until she noted a soft tissue mass on anterior neck.

History of past illness

She was taking medication for hypertension and hyperlipidemia few years ago, except that there were no other diseases diagnosed.

Personal and family history

She did not have any other family members that have thyroid cancer, or other type of cancers.
**Physical examination**

The 1.4 cm × 0.65 cm nodule was palpated 5 mm away from previous operative scar. The nodule was not, in any way or form, connected to the previous scar. The mass was located subcutaneously, slightly movable, and tense. Excisional biopsy without FNAC or CNB was performed under local anesthesia with an elliptical excision using previous scar. After excision, the mass was revealed to be a papillary carcinoma on soft tissue. Her previous medical records were reviewed.

**Laboratory examinations**

On the laboratory test before the second surgery, thyroid hormone test including TSH, free T4, T3 were within normal range. Serum thyroglobulin level was 13.8 ng/mL (3.5-77 ng/mL), and the antibody to thyroglobulin was 11.9 IU/mL (0-115 IU/mL).

**Imaging examinations**

Additional imaging studies were performed to find out another metastatic lesion. A suspicious metastatic lymph node measured 5 mm on level IV was observed on the right cervical area through ultrasound and computed tomography imaging (Figure 1C). Furthermore, FNAC confirmed the presence of a metastatic lymph node. Thyroglobulin level were greater than 500 ng/mL in the aspirate.

**FINAL DIAGNOSIS**

During the gross examination for excisional biopsy of skin and soft tissue, the specimen reveals a round light yellow to brown solid soft mass without necrosis in the superficial subcutaneous layer, measuring 1.4 cm × 1.0cm, Figure 2A. On microscopic examination, it shows a relatively well defined round solid mass in subcutaneous. It reveals neither lymph nodal architecture nor residual thyroid tissue in the submitted specimen, Figure 2B. The mass is composed of multiple papillary architecture showing
Figure 2 Macroscopic finding and microscopic images of recurrent papillary thyroid carcinoma in soft tissue. A: Shows a round light yellow to brown solid soft mass showing focal hemorrhage without necrosis in the superficial subcutaneous layer, measuring 1.4 cm × 1.0 cm; B: Shows a relatively well defined round solid mass in subcutaneous layer in low power field examination. No lymph nodal tissue or residual thyroid tissue was found in the submitted specimen (hematoxylin-eosin (H&E), × 12.5); C: The mass shows multiple papillary architecture showing nuclear enlargement, nuclear groove and inclusion which is shown in typical papillary thyroid carcinoma (H&E, × 100); D and E: Neither lymphovascular nor perineural invasion was observed in tumor (D2-40, × 100 and CD34, × 100, respectively).
remnant thyroid tissue. Lymph node metastasis was found in 3 out of 19 nodes. The maximal size of lymph node metastasis is 1.2 mm without extranodal soft tissue extension. There were no immediate surgical complications. Due to the patient’s clinical history and pathologic findings on the excisional biopsy (Figure 2), the anterior neck mass was suspected to be a local recurrence of her initial tumor, rather than metastasis to the skin.

**TREATMENT**

Radioisotope treatment was provided after surgery (100 mCi).

**OUTCOME AND FOLLOW-UP**

After the radioisotope treatment, serum thyroglobulin level maintained less than 0.1 ng/mL after 10 mo after surgery.

**DISCUSSION**

We found a late recurrence of subcutaneous NTI after needle biopsy in PTC patients combined with lymph node metastasis. No significant findings suggested whether the nodule was NTI or metastasis. Cutaneous or intramuscular metastasis of thyroid cancer is rare\(^5\). Therefore, the direction of biopsy needle tract, seedings in linear fashion, seedings not accompanied by lymphoid or neurovascular tissue, and its presence away from the initial surgical incision, led us to a diagnosis of NTI, rather than soft tissue metastasis. NTI may be a manifestation of an underlying disease, particularly lymph node metastasis as presented in this case.

CNB has applied to thyroid nodule evaluation because of some inconclusive results from FNAC. Its routine use is not recommended by several guidelines because of limited evidence so far\(^6\).\(^7\). CNB use is accepted as complementary modality after FNAC, compared to repeated FNAC. Pain, hematoma, edema, hoarseness, and infection are common complications of CNB. It can be safely performed by an expert and under ultrasonography guidance.

The cumulative incidence of NTI after FNAC of PTC was reportedly 0.1% after five years and 0.3% after ten years\(^4\). The time interval between FNAC and NTI in PTC was reported to range from six months to seven years\(^8\). In this case, our patient exhibited symptoms at a relatively later time period of almost 10 years (115 mo). NTI can occur in any type of cancer, but it has been accepted as the benefit overrides the harm\(^9\).\(^10\).

One of the factors related to NTI reported in other cancer types is needle diameter, suggesting that a similar pattern can occur during CNB in the thyroid. Although, it has not been established in any form of thyroid cancer.

Evaluation of 26 NTI patients showed that old age, lymph node metastasis, and extrathyroidal extension were related to NTI\(^11\). In this case, the patient was above 55 years old and had aggressive feature of extrathyroidal extension. For FNAC, there are a few tips from experts to avoid NTI such as removing negative pressure during needle withdrawal, removing sternothyroid muscle during thyroidectomy, or using ultrasound guidance to prevent seeding on the posterior part of thyroid\(^8\). Currently, there is no evidence to avoid NTI in CNB.

We found a post-biopsy hematoma due to CNB. The incidence of hematoma was found to be greater in CNB than in FNAC\(^12\).\(^13\), regardless of the nodule size, nodule composition, malignancy suspicion by ultrasound, or vascularity. There is no direct evidence that post-biopsy hematoma is related to NTI. Rather, a hypothesis that hematoma can prevent the healing of the needle tract suggests its action as a pool for disseminating tumor cells into the surrounding tissue.

The role of CNB can be less effective in other differentiated thyroid carcinomas\(^14\).\(^15\). In this case, although NTI may act as a clue to diagnose the patient with lymph node metastasis, using the FNAC and CNB simultaneously on initial diagnosis should be refrained when the ultrasound results shows a nodule highly suspicious for PTC.
CONCLUSION

To directly compare the occurrence of NTI between FNAC and CNB, a larger population and a longer observation time is required. A late recurrence of PTC in a CNB site suggests that clinicians must carefully choose diagnostic method for PTC patients. Furthermore, signs of post-biopsy hematoma in NTI should be more thoroughly investigated in the future.

REFERENCES


