Int J Clin Exp Med 2019;12(2):2025-2034
www.ijcem.com /ISSN:1940-5901/IJCEM0081108

Case Report

Kikuchi's lymphadenitis in inguinal lymph nodes with concurrent cutaneous squamous cell carcinoma

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Received June 10, 2018; Accepted November 12, 2018; Epub February 15, 2019; Published February 28, 2019

Abstract: The present study reports one case of combined Kikuchi's lymphadenitis in inguinal lymph nodes and cutaneous squamous cell carcinoma (CSCC), along with a review of the literature. The patient was a 56-year-old man with a 3-year history of one gradually enlarging masses on the left lower leg. It developed from a brown plaque that had lasted for 10 years. Computed tomography (CT) revealed that an irregular mass infiltrated the surface of the left tibia. Ultrasound examinations showed the enlargement of many inguinal lymph nodes. Based on a radical resection of the leg mass and regional lymph node dissection, the diagnosis of Kikuchi's lymphadenitis and primary CSCC without lymph node metastasis was made. Twenty-seven months after surgery, the patient remained in stable condition. The simultaneous occurrence of Kikuchi's lymphadenitis with carcinoma is unusual and presents an interesting, challenging, and complex management dilemma.

Keywords: Kikuchi's lymphadenitis, carcinoma, coexistent disease

Introduction

Kikuchi's lymphadenitis, also known as Kikuchi-Fujimoto lymphadenitis or histiocytic necrotizing lymphadenitis, was first described in Japan in 1972 [1, 2]. Its clinical and pathological features of lymphadenopathy and necrotic lesions are frequently misdiagnosed as other lymph node diseases, including primary and metastatic tumors. Previous studies have shown that the simultaneous existence of Kikuchi's lymphadenitis and carcinoma is extremely rare [3-10]. The current study presents one case of combining Kikuchi's lymphadenitis in inguinal lymph nodes and primary cutaneous squamous cell carcinoma (CSCC), as well as a review of the literature.

Materials and methods

Patient selection

Ninety-eight cases of Kikuchi's lymphadenitis and 10,398 cases of squamous cell carcinomas (SCC) were collected from the Department of Pathology, Sun Yat-sen Memorial Hospital, Sun Yat-sen University, Guangzhou, China, between January 2012 and December 2017. All cases were histologically and immunophenotypically reviewed. Diagnosis was based on the World Health Organization (WHO) classification of Pathology and Genetics of Skin Tumors (2006) [11], Tumors of Hematopoietic and Lymphoid Tissues (2008) [12], and Hematopathology (2011) [13]. One case of Kikuchi's lymphadenitis and primary CSCC was identified. Clinical and laboratory data of this patient were collected. Histological subtypes of Kikuchi's lymphadenitis and the histological grade, tumor stage, and risk stratification of CSCC were evaluated [13-16].

Hematoxylin and eosin (HE) and immunohistochemical staining

Four micrometer-thick sections from formalin-fixed paraffin-embedded blocks were cut for routine hematoxylin and eosin staining. The

EnVision method was used for immunohistochemical staining (IHC) with diaminobenzidine (DAB) as a substrate. A broad panel of antibodies included: Leukocyte common antigen (LCA; RP2/18+RP2/22), Cluster of differentiation (CD) 2 (AB75), CD3 (SP7), CD4 (SP35), CD5 (4C7), CD7 (272), CD8 (SP16), CD20 (L26), CD43 (DF-T1), CD56 (56C04), CD30 (Ber-H2), CD68 (KP1), CD123 (BR4MS), Anaplastic Lymphoma Kinase (ALK; 5A4), Granzyme B (GrB; GZB01), T-cell intracytoplasmic antigen-1 (TIA-1; TIA-1), Cytokeratin (CK; MX005), CK5/6 (D5/16B4), P63 (MX013), and Ki-67 nuclear antigen (MIB-1). All antibodies were purchased from Beijing Zhongshan Biotechnology Co (Beijing; China). Slides were treated by pressure-cooking in a citric acid buffer (10 mM, Ph 6.0) for 3 minutes before staining for LCA, CD3, CD4, CD5, CD7, CD8, CD20, CD43, CD56, CD68, ALK, GrB, TIA-1, CK, and P63 and in ethylenediaminetetraacetic acid (EDTA; 1 mM, Ph 9.0) for CD2, CD30, CD123, CK5/6, and Ki-67.

In situ hybridization for EBV detection

In situ hybridization (ISH) was performed using a fluorescein isothiocyanate (FITC)-labeled commercial probe complementary to detect two Epstein-Barr virus (EBV)-encoded small RNAs, EBER-1 and EBER-2 (Y520001; Dako), followed by a rabbit anti-FITC antibody conjugated with alkaline phosphatase (Dako) to combine with the probes. NBT/BCIP (nitroblue tetrazolium chloride/5-bromo-4-chloro-3-indolyl phosphate) was used as a substrate. Positivity could be observed in the nucleus as a blue-purple signal.

DNA extraction and polymerase chain reaction

DNA from paraffin-embedded tissue samples was extracted by phenol-chloroform procedures. Polymerase chain reaction (PCR) was performed using a multiplex PCR of European BIOMED 2 assays (Yuanqi Bio, Shanghai, China) [17]. Primers for detecting clonally rearranged immunoglobulin (Ig) were set in 8 multiplex PCR tubes, including 5 Ig heavy locus (IGH; including 3 variable joining domains and 2 diversity joining domains), 2 Ig κ locus (IGK), and 1 Ig λ locus (IGL). T-cell receptor (TCR) gene rearrangement was performed using primers in 5 multiplex PCR tubes, including 3 TCRβ and 2 TCRγ.

HE, IHC, EBV-ISH, and PCR detection was evaluated by two independent observers blinded to clinical data. All experiments were repeated three times. Differences were then discussed, reaching a consensus.

Review of the literature and statistical analysis

Articles from 1950 to 2018 containing the keywords "histiocytic necrotizing lymphadenitis" and "carcinoma" in PubMed, Scopus, Web of Science, and GeenMedical databases were reviewed. All statistical analyses were performed using SPSS WIN program package 13.0 (SPSS, Inc, Chicago, IL, USA). Survival times were measured from primary diagnosis until their censoring date.

Ethical approval

Each institution obtained approval to participate in the study as required by the local Ethics Committee. Informed consent was obtained from each patient and/or legal guardian.

Results

Clinical features of the patient

A 56-year-old man was referred to Sun Yat-sen Memorial Hospital, in January 2016, with a 3-year history of one gradually enlarging masses with an ulceration on the lower left leg. It developed from a brown plaque with occasional itching, no pain, and no purulence. It had lasted for 10 years. There was also an eight-year history of a brown plaque on the lower right leg, with occasional itching, no pain, and no purulence. One year ago, CSCC of the left lower leg was first diagnosed by skin biopsy. However, the mass on the left lower leg seldom reduced in size after two cycles of paclitaxel and cisplatin (TP) chemotherapy, 49 days of radiotherapy, and local Traditional Chinese Medicine treatment for ten months. The patient had suffered from hypertension and diabetes for the past year. He had smoked cigarettes, 1 pack per day, and drank alcohol, about 0.5 kilograms per day, for 30 years. He had no history of surgery, trauma, or ionizing radiation at the site of the lesion, no known family history of any related diseases, no recurrent fever, no night sweats, and no weight loss in recent months. Upon physical examination, a black and brown, firm, unclear circumscribed, and ulcerated mass, measuring 10 cm×4 cm, was found on the left lower leg. A black and brown plaque, 10 cm×3 cm in size, without pain, itching, ulcers,

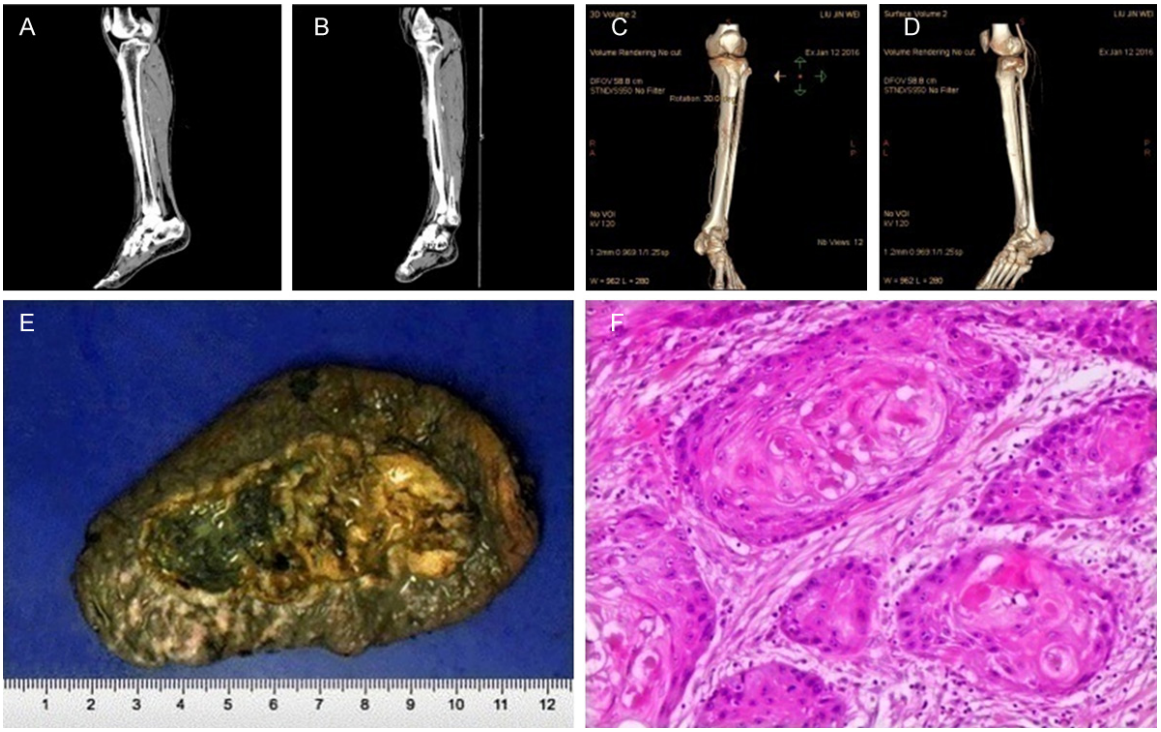

Figure 1. Primary cutaneous squamous cell carcinoma of the left lower leg. A-D. CT scans. E. Gross cutaneous specimen of left lower leg. F. Histopathology of squamous cell carcinoma (HE, Original magnification ×100).

and bleeding, was found on the right lower leg. Multiple inguinal lymph nodes, without tenderness or fixation, were palpable. His white blood cell count was 7.43×10^9/L (normal value, 3.50-9.50×10^9/L), red cell count was 3.13×10^{12}/L (normal value, 4.30-5.80×10^{12}/L), Hemoglobin was 99 g/L (normal value, 130-175 g/L), platelet count was 390×10^9/L (normal value, 125-350×10^9/L), and his monocyte proportion and count were 16.2% (normal value, normal 3.0-10%) and 1.2×10^9/L (normal value, 0.10-0.60×10^9/L), respectively. No abnormalities of the leukocytes, immunoglobulin G (IgE), IgG, C3, C4, anti-dsDNA, anti-SSA, anti-SSB, anti-neutrophil cytoplastic antibodies (ANCA), and anti-nuclear antibodies (ANA) were detected. C-reactive protein of 51.46 mg/L (normal value, 0.00-3.00 mg/L) was elevated and lactate dehydrogenase (LDH) levels were normal (163 U/L, normal 108-252 U/L). Blood detection for syphilis, Epstein-Barr virus (EBV), cytomegalovirus (CMV), human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and rheumatoid factor were either normal or negative. Contrast-enhanced computed tomography (CT) revealed an irregular mass, measuring about 46 mm in diameter and 14 mm in depth, in the soft tissues. It infiltrated the surface of the left tibia and was supplied with abundant blood by bifurcate vessels of the anterior and posterior tibial artery (**Figure 1A-D**). Ultrasound examinations showed enlargement of many inguinal lymph nodes (**Figure 2A**), with no enlargement of the liver and spleen. There were no abnormalities in the lungs, according to chest radiography.

Pathological features of the patient

Based on a radical resection of the leg mass and regional lymph node dissection, this case was diagnosed as Kikuchi's lymphadenitis and primary CSCC. Regarding CSCC, there was a white or tan solid mass on the cut surface, measuring approximately 8.6 cm×4.8 cm×1.4 cm in epidermis, which was exophytic growth with invasiveness, necrosis and ulcers, and infiltrated the epidermis, subcutaneous tissue, and the surface of the left tibia (**Figure 1E**). Histopathologically, the normal histological structure of skin was damaged, showing deep infiltration of atypical and well differentiated keratinocytes (**Figure 1F**), having a 1.2 cm depth of infiltration and perineural involvement. Lymphatic and vascular involvement, surgical

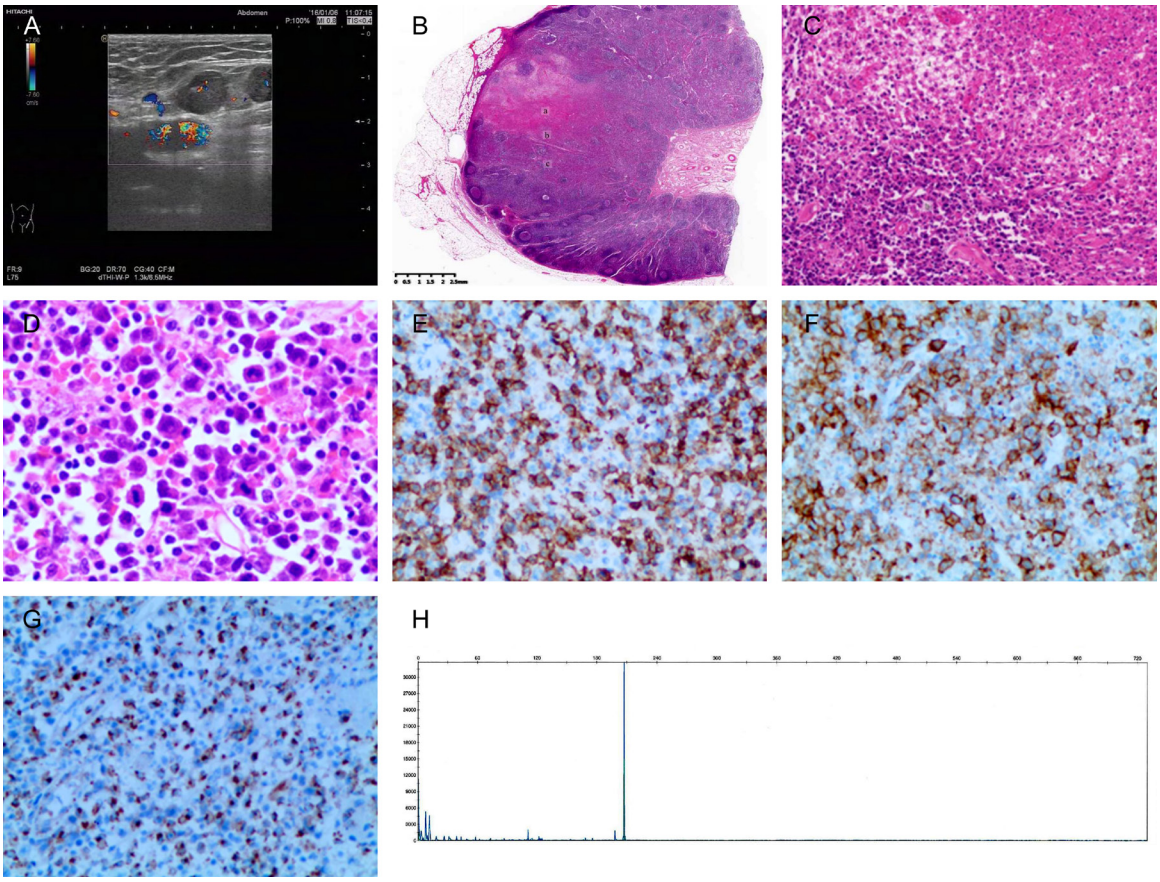

Figure 2. Kikuchi's lymphadenitis in inguinal lymph nodes. A. Ultrasonic image of inguinal lymph nodes. B, C. The normal architecture of the regional lymph nodes were partly damaged, a, b, and c exhibited central coagulative necrosis, borderline of mononuclear cells, and peripheral proliferative lymph tissues, respectively (HE, Original magnification ×6 and ×50, respectively). D. A mixture of immunoblasts, lymphocytes, histiocytes, and plasmacytoid dendritic cells, some of which may demonstrate atypia (HE, Original magnification ×400). E-G. Mixture of mononuclear cells positive for CD3, CD30, and CD68 (EnVision method, Original magnification ×200). H. Unspecific amplification of IGH.

margins, regional lymph nodes, and organ metastasis were negative. Seborrheic dermatitis was confirmed by cutaneous excision biopsy in the right lower leg. Regarding Kikuchi's lymphadenitis, there were some grayish lymph nodes, including the upper left thigh lymph nodes, deep femoral lymph nodes, femoral canal lymph nodes, and inguinal lymph nodes, measuring approximately from 0.5 cm to 4.5 cm in the maximum diameter. These had complete capsules and patchy areas of necrosis. Histopathologically, the normal histological structure of lymph nodes was partly damaged, exhibiting central coagulative necrosis, borderline of mononuclear cells, and peripheral proliferative lymph tissues (**Figure 2B**, **2C**). Patchy paracortical and cortical necrosis with abundant karyorrhectic debris was surrounded by a mixture of mononuclear cells, including numerous immunoblasts and lymphocytes, extensive histiocytes, and aggregates of plasmacytoid dendritic cells. Immunoblasts had prominent nucleoli and basophilic cytoplasm, some of which may demonstrate atypia (**Figure 2D**). The morphology of the histiocytes was variable and included crescentic histiocytes (**Figure 2D**), phagocytic macrophages, and foamy histiocytes. Plasmacytoid dendritic cells were intermediate-sized with round to oval nuclei and granular chromatin placed eccentrically within an amphophilic cytoplasm. Neutrophils or other granulocytic infiltrates were characteristically absent. Immunophenotypically, the infiltrate was composed of T-cells (**Figure 2E**), with CD8+ cells outnumbering CD4+ cells, CD68+ histiocytes (**Figure 2G**), and CD68+, CD4+, CD43+,

Table 1. Summary of simultaneous Kikuchi's lymphadenitis and carcinoma

NO.	Author	Age (years)/ Gender	Race	Pathogen detection	Kikuchi's lymphadenitis			Carcinoma				Follow-up (months and status)
					Site	Histological subtype	Therapy	Primary site	Histological subtype	Metastatic LN presence	Therapy	
1	Radhi JM [3]	37, male	Caucasian-Canada	NC	Cervical	Necrotizing type	ND	Stomach	Adenocarcinoma	Omental lymph nodes	Operation	NC, DOD,PD
2	Aqel NM [4]	66, female	Caucasian-England	NC	Axillary	NC	ND	Ipsilateral breast	Invasive lobular carcinoma	Negative	Operation	NC
3	Garg S [5]	30, female	Caucasian-Indian	NC	Cervical	Necrotizing type	ND	Right thyroid lobe	Papillary carcinoma	One of the cervical lymph nodes	Operation	1, alive, CR
4	Hwang JP [6]	40, female	Asian-Korean	NC	Axillary	NC	NC	Right breast	Intraductal carcinoma	Negative	Chemotherapy, operation	NC
5	Park JJ [7]	38, male	Asian-Korean	TB	Cervical	Necrotizing type	D	Right thyroid lobe	Papillary carcinoma	Ipsilateral internal jugular chain	Operation	3, alive, CR
6	Li B [8]	70, female	Asian-Chinese	EBV, TB	Cervical	Necrotizing type	D	Stomach	Adenocarcinoma	Negative	Operation	8, alive, SD
7	Choi MR [9]	32, male	Asian-Korean	EBV, TB, CMV, HIV, HBV, HCV	Cervical	NC	D	Right thyroid lobe	Medullary microcarcinoma	NC	Operation	2, alive, CR
8	Maruyama T [10]	48, male	Asian-Japanese	NC	Cervical	Necrotizing type	ND	Tongue	Squamous cell carcinoma	One of the level I cervical lymph nodes	Chemotherapy, operation	89, alive, CR
9	This report	56, male	Asian-Chinese	EBV, CMV, HIV, HBV, HCV	Inguinal	Necrotizing type	ND	Skin	Squamous cell carcinoma	Negative	Operation	27, alive, CR

LN, lymph node; NC, not clear; ND, not done; DOD, died of disease; PD, progressive disease; CR, complete response; TB, tuberculosis; D, done; EBV, Epstein-Barr virus; SD, stable disease; CMV, cytomegalovirus; HIV, human immunodeficiency virus; HBV, hepatitis B virus; HCV, hepatitis C virus.

and CD123+ plasmacytoid dendritic cells. B-cells were rare. Atypical immunoblasts and lymphocytes were reactive for CD30 (**Figure 2F**), CD2, CD7, GrB, and TIA-1, while negative for CD5, CD56, ALK, CD20, CK, CK5/6, and P63. Reactive expression of Ki-67, which is an accurate marker of the proliferative index of cells, was 50%. No positive EBER signal and clonal TCR γ/TCR β and IGH/IGK/IGL gene rearrangement were detected. Unspecific amplification of IGH was demonstrated in one multiplex PCR tube (**Figure 2H**).

Diagnosis of primary CSCC (histological grade 1, T4N0M0, stage IV, high risk stratification), coexistent with Kikuchi's lymphadenitis (necrotizing type), was made based on the findings described above. The patient has been disease-free for 27 months, according to postoperative follow-ups every 3 months.

Review of the literature

There were 8 articles in English examining the combination of Kikuchi's lymphadenitis and carcinoma (**Table 1**), including Kikuchi's lymphadenitis coexistent with 2 cases of adenocarcinoma of the stomach, 2 cases of breast cancer, 3 cases of thyroid carcinoma, and one case of tongue cancer [3-10].

Simultaneous Kikuchi's lymphadenitis and carcinoma was first reported in Canada in 1997 [3]. A 37 year-old male with a poorly differentiated adenocarcinoma of the stomach presented with cervical lymphadenopathy. Fine needle aspirate of the cervical lymph node revealed paracortical hyperplasia with a pronounced mottling appearance and zonal necrosis. The paracortical foci of necrosis were surrounded by a mixture of mononuclear atypical cells, some exhibiting a signet ring appearance. Atypical and signet ring cells present in the cervical lymph nodes were negative for cytokeratin (CK), carcinoembryonic antigen (CEA), common leucocyte antigen (LCA), and S100 protein. However, these cells were positive for the histiocytic marker CD68. Oesophagogastrectomy was then performed, but the patient died following extensive retroperitoneal and mediastinal spread. This case represents the first report of an association between Kikuchi's disease and gastric carcinoma. The second case of Kikuchi's lymphadenitis, coexistent with adenocarcinoma of the stomach, was a 70-year-old Chinese woman [8]. She presented with a 2-month history of superficial lymphadenopathy, weight loss, and intermittent fever, without response to antibiotic therapy. Tests for EBV, anti-neutrophil cytoplastic antibodies (ANCA), and antinuclear antibodies (ANA) were positive. Serum levels of IgG4, complement, CEA, α-fetoprotein (AFP), carbohydrate antigen (CA) 199, and CA125 were within the normal range. A TSPOT.TB test was negative. The patient was advised to undergo a whole-body ^{18}F-fluoro-2-deoxy-D-glucose (FDG) positron emission tomography (PET)/CT scan to rule out malignancy. Because generalized lymphadenopathy, stomach, and spleen avidly took up FDG, malignant lymphoma was considered. However, according to laboratory test results, autoimmune diseases could not be excluded. To confirm the diagnosis, the patient underwent an excisional biopsy of the cervical and inguinal lymph nodes and an esophagogastroduodenoscopy. Ultimately, a diagnosis of Kikuchi's lymphadenitis of the right cervical lymph nodes, nonspecific reactive lymphoid hyperplasia of the right inguinal lymph nodes, and poorly differentiated adenocarcinoma in the gastric antrum was determined. After 2 weeks of antibiotic therapy and antipyretic analgesia treatment, the patient underwent radical distal gastrectomy plus D2 dissection. No regional lymph node metastases were observed. Eight months after surgery, the patient remains in stable condition.

The first case of Kikuchi's lymphadenitis, coexistent with breast carcinoma, was a 66-year-old woman [4]. Twelve axillary lymph nodes, which were taken from the patient during the course of surgical treatment of an invasive lobular carcinoma of the ipsilateral breast, showed features of Kikuchi's disease and were free of metastatic carcinoma. The second case was a 40-year-old female that had been diagnosed with intraductal carcinoma of the right breast. She was successfully treated with chemotherapy and surgical resection 5 years ago [6]. She had no complaints of pain, fever, or palpation of a mass in her right axilla after surgery. An ^{18}F-FDG PET/CT scan showed an increased FDG uptake of the enlarged lymph node in the right axilla, which could not exclude ipsilateral metastatic lymphadenopathy. Kikuchi's disease was revealed by a lymph node dissection of the lesion.

There were 3 cases of Kikuchi's lymphadenitis concurrent with thyroid carcinoma [5, 7, 9]. First, a 30-year-old young female of Indian ori-

gin presented 2 months post-partum, with complaints of neck pain and fever. CT scan showed enlarged right-sided lymph nodes and a thyroid nodule. A papillary carcinoma of the thyroid, with one lymph node positive for metastatic disease and several other lymph nodes showing histiocytic necrotizing lymphadenitis, was confirmed by an elective total thyroidectomy, central node dissection, and a right modified lymph node dissection. The patient had an uneventful recovery. The second case was a 38-year-old man previously diagnosed with papillary thyroid cancer with cervical lymph nodes metastasis. After finishing anti-tuberculosis medication, recurrent lymphadenopathy developed. The diagnosis was Kikuchi's necrotizing lymphadenitis combined with metastatic papillary carcinoma in a single lymph node. Methylprednisolone and non-steroidal anti-inflammatory drugs were added to treat Kikuchi's lymphadenitis. Three months later, his symptoms were completely resolved without recurrent symptoms. This is the first report of Kikuchi-Fujimoto disease and papillary thyroid carcinoma combined in a single lymph node. The third case was a 32-year-old Korean male presenting with a 4-week history of multiple enlarged right posterior cervical masses. Investigations of blood cultures for bacteria, viruses, and fungi, along with serology for EBV, CMV, HIV, HBV, HCV, antinuclear antibody testing, and rheumatoid factor, were either normal or negative. CT scans of the neck revealed multiple enlarged lymph nodes at all cervical levels on the right side. Pathological findings from ultrasound-guided core needle biopsies of nodes revealed necrotizing lymphadenitis and PCR was negative for mycobacterium. The patient was put on levothyroxine at 100 μg/day. He was treated symptomatically for fever and lymphadenopathy resolved spontaneously. In addition, all abnormal laboratory findings and pericardial effusion had normalized after 2 months. Thyroid ultrasonography during the work-up of Kikuchi's lymphadenitis revealed a 7-mm hypoechoic nodule in the right lobe. After recovery from Kikuchi's lymphadenitis, repeat fine needle aspiration (FNA) detected poorly differentiated carcinoma. This prompted a bilateral total thyroidectomy and central lymph node dissection. Histopathology confirmed a 5-mm medullary thyroid cancer via positive immunohistochemical staining and staining of deposited stromal amyloid with Congo red. Two months after surgery, the patient's calcitonin levels were undetectable.

Kikuchi-Fujimoto disease in the regional lymph node (LN) with node metastasis in a patient with tongue cancer was reported by Maruyama T [10]. A 48-year-old man had a 2-month history of pain associated with the right lateral tongue edge. An incisional biopsy of the tongue mass led to a histrogical diagnosis of SCC. Intravenous neoadjuvant bleomycin was administered plus oral uracil/tegafur. The patient underwent a local excision of the tongue cancer and radical neck dissection. Histopathological examinations revealed tongue SCC with one metastatic node at level I. Based on histological and immunohistochemical findings, it was concluded that the level II and III LN lesions were Kikuchi's lymphadenitis. The patient remained disease-free for 6 years after the initial surgery. Afterward, the right side of the patient's posterior neck became swollen and CT revealed multiple swollen posterior LNs. High 2-18F-FDGuptakes by these LNs were demonstrated by FDG-PET/CT. A second primary tumor of the neck or recurrent Kikuchi's lymphadenitis was suspected. No malignant lesions, including regional recurrent SCC or lymphoma, were detected pathologically. No preoperative or postoperative therapy was performed before or after the second LN excision. The residual lymph-adenopathy gradually resolved on palpation and postoperative CT confirmed the disappearance of the lymphadenopathy without treatment. The patient remained well, with no clinical or radiological signs of recurrence or metastasis, for 17 months after the second LN excision.

The mean age of these eight patients and the present case was 46.3 years old (30-70 years old). There were 5 men and four women. There were 6 cases of cervical, 2 of axillary, and one inguinal LNs, respectively. Six were adenocarcinoma, one was thyroid medullary microcarcinoma, and two were SCC. To the best of our knowledge, the present case is the first with a combination of Kikuchi's lymphadenitis in inguinal LNs and carcinoma.

Discussion

Kikuchi's lymphadenitis is a distinctive type of histiocytic lymphadenitis, primarily affecting the cervical lymph nodes of young individuals. It has a self-limited clinical course [13]. The dis-

ease is of unknown etiology. Differential diagnosis is challenging, as many other conditions, such as malignant lymphoma, metastatic disease, tuberculosis, and infectious lymphadenopathies, can present in a similar way.

The pathogenesis of Kikuchi's lymphadenitis is unclear but is believed to be an immune response to unknown inciting agents. Pathogens implicated in triggering this response include Yersinia enterocolitica, Toxoplasma gondii, EBV, HIV, human herpes virus types 6, 7, and 8, systemic lupus erythematosus (SLE), and Hashimoto's thyroiditis [9, 18, 19]. A review of the literature revealed nine cases of Kikuchi's lymphadenitis involving lymph nodes draining local antigens from carcinomas [3-10]. This suggests that cancer may play a role in the development of Kikuchi's lymphadenitis [4, 7, 9, 10] and that Kikuchi's lymphadenitis may represent an immune response to antigenic stimuli. The self-limited course of Kikuchi's disease of the present patient, along with the disappearance of symptoms without any specific treatment and the recurrence of the disease in some patients [3-10], are in agreement with an autoimmune disease.

Accurate diagnosis of Kikuchi's lymphadenitis is essential to avoiding an unnecessary or incorrect treatment plan associated with the diagnosis of malignancy, metastasis, or infection. Because imaging studies have failed to demonstrate the benign nature, Kikuchi's disease has generally been diagnosed based on excisional lymph nodes by histopathology. However, the morphological features of Kikuchi's lymphadenitis are sometimes confused with malignancy. It is important that pathologists are aware of this association. A combination of clinical features, laboratory findings, imaging studies, morphology, immunofluorescence, cytochemical, immunohistochemistry, and molecular pathological techniques may aid in the diagnosis of Kikuchi's lymphadenitis, ruling out metastasis or a second primary tumors in lymphadenopathies of carcinomas [3, 6-8, 10]. In Kikuchi-Fujimoto disease cases, CD30-positive cytotoxic T-cells were abundant around necrotic areas. This histological feature may be helpful in differentiating this disease from systemic lupus erythematosus (SLE) and reactive lymphoid hyperplasia (RLH) [20-22].

Kikuchi's lymphadenitis is often mistaken for lymphoma clinically and is also sometimes difficult to differentiate from lymphoma histopathologically [23]. Since both Kikuchi's disease and lymphoma usually present with enlarged lymph nodes and the histological examination of these lymph nodes reveals the presence of atypical large cells, it is critical to make the correct diagnosis. There are some cases of co-occurrence of Kikuchi's lymphadenitis and lymphoma [23-28]. Kikuchi's lymphadenitis may be triggered by lymphoma [27]. Conversely, it is not clear whether Kikuchi's lymphadenitis has an increased risk of lymphoma [29]. Spontaneous regression of Kikuchi's lymphadenopathy with oligoclonal T-cell populations favors a benign immune reaction over T-cell lymphoma [30]. There were atypical large cells and unspecific amplification of IGH in the present case. Thus, until reliable prognostic markers are available, patients with Kikuchi's lymphadenitis should have continued long-term follow-up care.

This coexistence of Kikuchi's lymphadenitis with carcinoma is unusual, presenting an interesting, challenging, and complex management dilemma. Future identification of more cases and longer follow-up evaluations are necessary.

Acknowledgements

This work was supported in part by grants from the National Natural Science Foundation of China (81101626), Guangdong Natural Science Foundation (2015A030313177), and National College Students Innovation and Entrepreneurship Training Program (201801128).

Disclosure of conflict of interest

None.

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