Kikuchi Disease Mimicking Metastatic Lymphadenopathy on ^{18}F -FDG PET/CT in Patients with Breast Cancer

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Kikuchi disease is a rare benign lesion usually affecting the lymph nodes of the whole body, and its hypermetabolic features on ^{18}F -FDG PET/CT may be confused with those of infection, metastasis or primary malignancy. I report a case of Kikuchi disease of the axillary lymph node (LN) showing increased FDG uptake on ^{18}F -FDG PET/CT mimicking a metastatic lymphadenopathy (LAP) in a 40-year-old patient with right breast cancer (Fig. 1).

A 40-year-old female had been diagnosed with intraductal carcinoma of the right breast and successfully treated with chemotherapy and surgical resection 5 years ago. 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 (Biograph 2, Siemens, Germany) was performed after the injection of 351.5 MBq (9.5 mCi) of ^{18}F -FDG with a blood glucose level of 88 mg/dl for restaging. ^{18}F -FDG PET/CT showed an increased FDG uptake of the enlarged LN in the right axilla with a maximum standardized value (SUVmax) of 4.0, which could not exclude ipsilateral metastatic LAP. The chest CT images revealed an enhancing LAP in the right axilla that appeared to be a metastatic LAP. Because the imaging studies failed to demonstrate

Fig. 1 An ^{18}F -FDG PET/CT scan (Biograph 2, Siemens, Germany) was performed after the injection of 351.5 MBq (9.5 mCi) of ^{18}F -FDG with a blood glucose level of 88 mg/dl for restaging. The maximum intensity projection PET image (a, recent image on the left and old image on the right), fusion (b), corresponding transverse PET (c) and enhanced chest CT (d) images showing newly developed increased FDG uptake of the lymph node in the right axilla with a maximum standardized value (SUVmax) of 4.0, which could not exclude ipsilateral metastatic lymphadenopathy

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the benign nature of this lesion, an LN dissection of the lesion was performed. The histology showed subacute necrotizing lymphadenitis with reactive hyperplasia, which suggested Kikuchi disease.

Kikuchi disease, a subacute necrotizing histiocytic lymphadenitis, is a rare benign and self-limited disease usually presenting as a lymphadenopathy with fever of the affected LNs, mainly characterized by cervical LAP. Other lymph nodes, such as the axillary or abdominal ones, may be less frequently involved, and generalized lymphadenopathy is uncommon [1]. Clinically and histologically, Kikuchi disease can be misdiagnosed as lymphoid malignancy, metastatic LAPs or an infectious disease. Kikuchi-Fujimoto disease is generally diagnosed on the basis of an excisional biopsy of a lymph node and histopathology. Accurate diagnosis of Kikuchi disease by histology is essential to avoid an unnecessary or incorrect treatment plan associated with the diagnosis of malignancy, metastasis or infection. [2].

Several reports on the use of ^{18}F -FDG PET/CT in Kikuchi disease can be found in the literature. [3–8], which reported having definite FDG uptake in affected LNs and receiving helpful information from the histologic diagnosis on the distribution and metabolic activity of regional or generalized LAPs or recurrence.

This report indicates that Kikuchi disease should be considered in the differential diagnosis of axillary LAP found on ^{18}F -FDG PET/CT with increased tracer uptake in patients with breast cancer.

Conflict of interest Jae Pil Hwang declares having no conflict of interest.

Informed Consent All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000. Informed consent was obtained from the patient for being included in the study. Additional informed consent was obtained from the patient whose identifying information is included in this case report.

References

1. Bosch X, Guilabert A, Miquel R, Campo E. Enigmatic Kikuchi-Fujimoto disease: a comprehensive review. *Am J Clin Pathol*. 2004;122:141–52.
2. Hassan M, Anees A, Zaheer S. Kikuchi-Fujimoto disease: diagnostic dilemma and the role of immunohistochemistry. *J Clin Med Res*. 2009;1(4):244–6.
3. Erhamamci S, Reyhan M, Kocer NE. Kikuchi-Fujimoto disease as a rare cause of benign lymphadenopathy and (18)F-FDG PET/CT findings. *Hell J Nucl Med*. 2014;17(1):41–4.
4. Kong E, Chun K, Hong Y, Hah J, Cho I. 18 F-FDG PET/CT findings in patients with Kikuchi disease. *Nuklearmedizin*. 2013;52(3):101–6.
5. Tsujikawa T, Tsuchida T, Imamura Y, Kobayashi M, Asahi S, Shimizu K, et al. Kikuchi-Fujimoto disease: PET/CT assessment of a rare cause of cervical lymphadenopathy. *Clin Nucl Med*. 2011;36(8):661–4.
6. Zhang MJ, Xiao L, Zhu YH, Jiang JJ, Jiang MS, He W. Lymph node uptake of 18 F-fluorodeoxyglucose detected with positron emission tomography/computed tomography mimicking malignant lymphoma in a patient with Kikuchi disease. *Clin Lymphoma Myeloma Leuk*. 2010;10(6):477–9.
7. Ito K, Morooka M, Kubota K. F-18 FDG PET/CT findings showing lymph node uptake in patients with Kikuchi disease. *Clin Nucl Med*. 2009;34(11):821–2.
8. Makis W, Rush C. Necrotizing Cervical Lymphadenitis Caused by *Mycobacterium simiae* in an HIV-positive patient: Imaging with ^{18}F -FDG PET/CT. *Nucl Med Mol Imaging*. 2011;45:220–2.