

Allergic Reaction to Ginkgo Nut on FDG PET/CT

Eun Ji Han, MD, PhD, Hye Lim Park, MD, and Sung Hoon Kim, MD, PhD

Abstract: We report the case of a 36-year-old woman who previously underwent total thyroidectomy for papillary thyroid carcinoma. ^{18}F FDG PET/CT images demonstrated multiple lymph nodes with increased FDG uptake in the neck, chest, and abdomen and diffusely increased FDG uptake in the spleen, which were highly suspicious findings for malignant lymphoma. However, subsequent biopsy of axillary lymph node presented reactive hyperplasia. Detailed history revealed that the patient had a history of generalized edema and severe arthralgia after contact with ginkgo nut one week ago. This case highlights allergic reaction mimicking lymphoma on FDG PET/CT.

Key Words: FDG PET/CT, false positive, allergic reaction, ginkgo nut
(*Clin Nucl Med* 2016;00: 00–00)

Received for publication February 17, 2016; revision accepted April 17, 2016.
From the Department of Radiology, College of Medicine, The Catholic University of Korea, Seoul, South Korea.

Conflicts of interest and sources of funding: none declared.

Correspondence to: Sung Hoon Kim, MD, PhD, Department of Radiology, Seoul St. Mary's Hospital, College of Medicine, The Catholic University of Korea 222, Banpo-daero, Seocho-gu, Seoul 06591, South Korea. E-mail: nm@cmcu.or.kr.

Copyright © 2016 Wolters Kluwer Health, Inc. All rights reserved.

ISSN: 0363-9762/16/0000-0000

DOI: 10.1097/RLU.0000000000001276

REFERENCES

1. Patel BY, Volcheck GW. Food allergy: common causes, diagnosis, and treatment. *Mayo Clin Proc.* 2015;90:1411–1419.
2. Weber RW. Allergen of the month - ginkgo. *Ann Allergy Asthma Immunol.* 2012;108:A12.
3. Ho MH, Wong WH, Chang C. Clinical spectrum of food allergies: a comprehensive review. *Clin Rev Allergy Immunol.* 2014;46:225–240.
4. Pastar Z, Lipozencic J. Adverse reactions to food and clinical expressions of food allergy. *Skinmed.* 2006;5:119–125.
5. Janeway CA Jr, Travers P, Walport M, et al. *Immunobiology: The Immune System in Health and Disease.* New York: Garland Science; 2005:517–556.
6. Bhargava P, Chang CW, Glickman B, et al. Persistent generalized lymphadenopathy (PGL) mimicking lymphoma on whole-body FDG PET/CT imaging. *Clin Nucl Med.* 2006;31:398–400.
7. Choi EK, Oh JK, Chung YA. Herpes zoster mimicking breast cancer with axillary lymph node metastasis on PET/CT. *Clin Nucl Med.* 2015;40:572–573.
8. Thomas DL, Syrbu S, Graham MM. Epstein-Barr virus mimicking lymphoma on FDG-PET/CT. *Clin Nucl Med.* 2009;34:891–893.

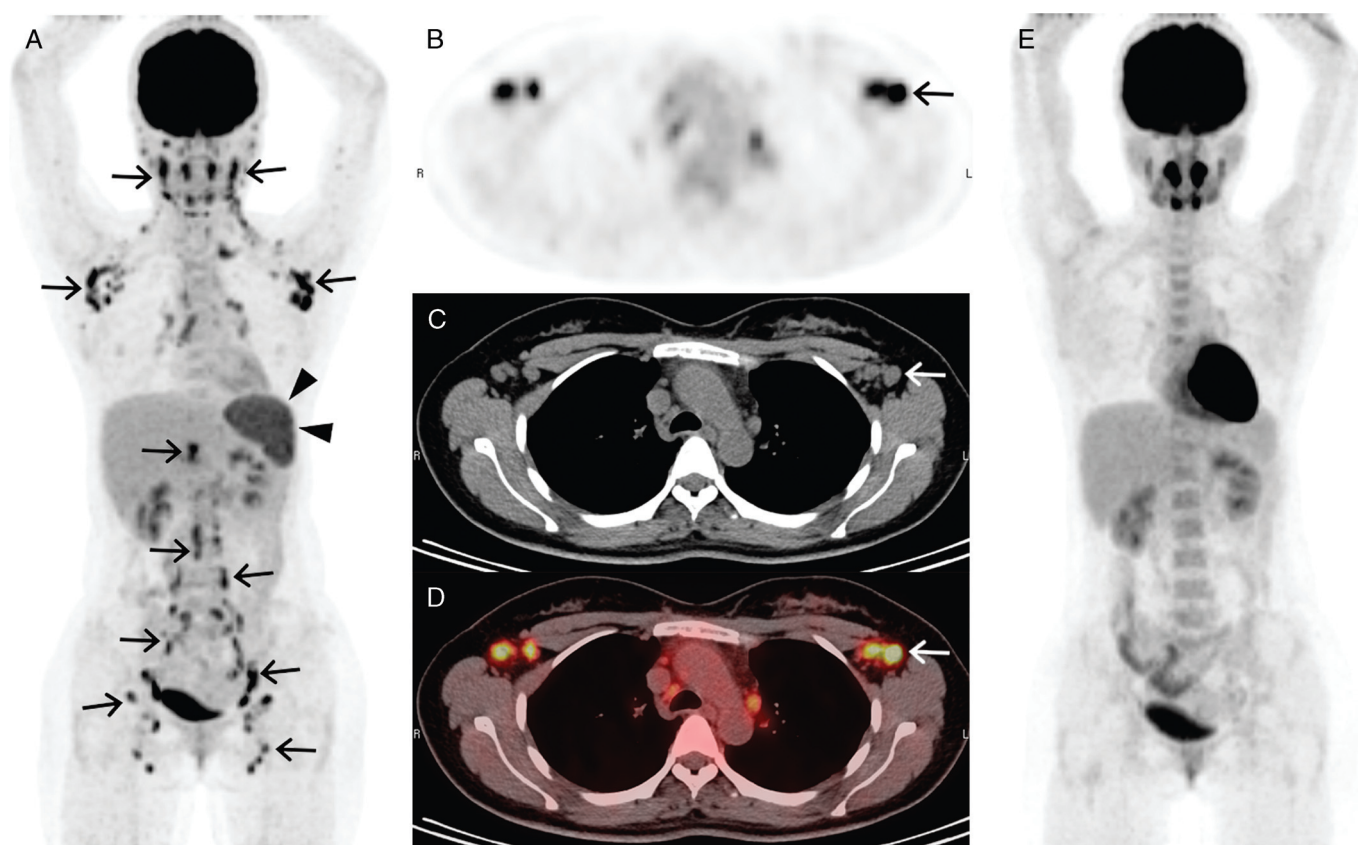


FIGURE 1. ^{18}F FDG PET/CT was performed on a 36-year-old woman for restaging of thyroid cancer. She had total thyroidectomy and neck lymph node dissection for papillary thyroid carcinoma 1 month ago and was planning for radioactive iodine treatment. Her serum thyroglobulin was 0.05 ng/mL (normal, 0–35), but the thyroglobulin antibody was elevated to 183.13 IU/mL (normal, 0–70). In the maximum intensity projection (A), transaxial PET (B), CT (C), and fused PET/CT (D) images, increased FDG uptake was noted in multiple enlarged lymph nodes along bilateral neck, mediastinum, peribronchial areas, internal mammary chains, axillae (arrows), cardiophrenic angle, mesentery, retroperitoneum, iliac chains, and inguinal areas. The spleen also showed diffusely increased FDG uptake (arrowhead). As these findings were highly suspicious for malignant lymphoma, biopsy of the left axillary lymph node was performed. However, the final pathologic diagnosis was reactive hyperplasia. Further detailed history taking revealed that the patient complained of generalized edema and severe arthralgia after contact with ginkgo nut a week before the PET/CT imaging. Tree nut allergies, including ginkgo nut, are common, and reactions can develop after direct skin contact and ingestion.^{1,2} Allergic reactions, which are caused by activation of inflammatory cells and release of inflammatory mediators, can present with various localized and generalized symptoms.^{3–5} Previous reports demonstrated that any infectious or inflammatory conditions can cause increased FDG uptake because of high glucose metabolism by cells involved in the immune response.^{6–8} The maximum intensity projection image (E) on 6-month follow-up PET/CT without further treatment showed resolution of increased FDG uptake previously evident in the lymph nodes and the spleen. This case illustrates that multifocal hypermetabolic lymphadenopathy can be associated with allergic reaction and can lead to a false-positive interpretation of FDG PET/CT images and also highlights the importance of correlation with clinical history and biopsy for definitive diagnosis.