Interesting image

Fever of unknown origin (FUO) due to deep-venous thrombosis: Diagnostic importance of FDG PET/CT

Fiebre de origen desconocido (FOD) debida a trombosis venosa profunda: Importancia para su diagnóstico de la FDG PET/TC

S. Gungor a,∗, K. Koc b, T. Ones b, S. Inanir b, T.Y. Erdil b, H.T. Turoglu b

a Department of Nuclear Medicine, Recep Tayyip Erdogan University Faculty of Medicine, Rize, Turkey
b Department of Nuclear Medicine, Marmara University School of Medicine, Istanbul, Turkey

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A 29-year-old man was admitted to the infectious diseases outpatient clinic with fever of one-month duration. Physical examination was normal. The erythrocyte sedimentation rate was 56 mm/h (normal 2–12 mm/h) and the leukocyte count was 13.6 × 10^9 L^-1 (normal 4–10 × 10^9 L^-1) with normal creatine kinase level, creatinine level, and liver function tests. The results of chest X-ray, abdominal ultrasound scan, and tuberculin skin test were reported to be normal. Whole-body 18F-FDG PET/CT was performed to investigate the origin of fever. It revealed linear FDG uptake (SUV max: 4.2 g/ml) in bilateral femoral, popliteal, tibial and peroneal veins on maximum intensity projection, coronal and transaxial images (Fig. A, B1–4, C1–3). Bilateral deep-venous thrombosis (DVT) was considered in the differential diagnosis. Doppler ultrasonography (USG) confirmed the diagnosis of DVT in bilateral lower extremities. The patient responded to anticoagulant therapy and his temperature returned to normal within a few days. FUO was described in 1961 by Petersdorf and Beeson as a fever above 38.3 °C that lasts more than three weeks and cannot be diagnosed despite a one-week hospitalized examination. The differential diagnosis of FUO includes approximately 200 potential causes that can be

Fig. 1. Whole-body 18F-FDG PET/CT revealed linear FDG uptake (SUVmax: 4.2 g/ml) in bilateral femoral, popliteal, tibial and peroneal veins on maximum intensity projection image (A), coronal (B1–4) and transaxial fused images (C1–3).

∗ Corresponding author.
E-mail address: dr.serkan81@hotmail.com (S. Gungor).

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classified into four major categories: infectious, malignant, aseptic inflammatory processes, and miscellaneous such as DVT. Acute thrombosis is associated with endothelial cell activation and increased expression of cell adhesion molecules. Saha et al. reviewed that these events subsequently promote leukocyte adhesion with accumulation of neutrophils and macrophages, which are metabolically active and avidly take up 18F-FDG, within the developing thrombus. Although the PET/CT findings of DVT were presented before, a case with DVT as a cause of FUO has not been demonstrated by FDG PET/CT. FDG PET/CT may play an important role in the diagnosis of FUO and DVT should be kept in mind when interpreting whole-body FDG PET/CT images in patients with FUO.

**Conflict of interest**

All the authors state that there were no conflicts of interests when the manuscript was written.

**References**