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Diffuse Large B-Cell Non-Hodgkin Lymphoma Involving Multiple Different Organs in a Young Adult with ^{18}F-FDG PET/CT

Genç Erişkinde ^{18}F-FDG PET/BT ile Farklı Organları İçeren Diffüz Büyük B-Hücreli Non-Hodgkin Lenfoma Tutulumu

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Abstract

Extranodal-multiorgan involvement is rarely presented in diffuse large B-cell non-Hodgkin lymphoma. ^{18}Fluorine-fluorodeoxyglucose positron emission tomography/computed tomography findings of a 22-year-old female patient with supra/infra-diaphragmatic nodal and skeletal involvements and thyroid, pancreas, right breast, bilateral renal, and ovarian involvements were presented.

Keywords: Extranodal-multiorgan involvement, ^{18}F-FDG, PET/CT, diffuse large B-cell non-Hodgkin lymphoma

Öz

Ekstranodal-multiorgan tutulumu, diffüz büyük B-hücreli non-Hodgkin lenfomada (DBBHNHL) nadiren görülmektedir. Yirmi iki yaşındaki kadın olguda ^{18}flor-florodeoksiglukoz pozitron emisyon tomografi/bilgisayarlı tomografi ile DBBHNHL'nin supra/infra-diyafragmatik lenf nodu, kemik tutulumu ile tiroid, pankreas, sağ meme, bilateral renal ve over tutulumu gösterildi.

Anahtar kelimeler: Ekstranodal-multiorgan tutulumu, ^{18}F-FDG, PET/BT, diffüz büyük B hücreli non-Hodgkin lenfoma

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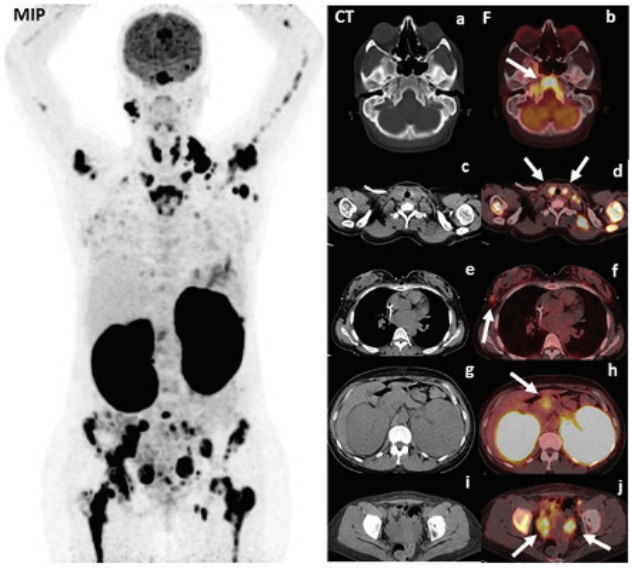

Figure 1. A 22-year-old female patient was admitted to the hospital with weakness and shortness of breath. Dialysis was started when the creatinine level was 10.95. Ultrasonography was performed, which revealed a significantly increased size of both kidneys without calculus, mass, and ectasia. A kidney biopsy was performed and reported as diffuse large B-cell non-Hodgkin lymphoma (DLBCNHL). Bone marrow biopsy was performed and large B-cell atypical mononuclear cell infiltration was detected. ^{18}Fluorine-fluorodeoxyglucose (^{18}F-FDG) positron emission tomography/computed tomography (PET/CT) imaging was performed for staging. The maximum intensity projection (MIP) image and transaxial slices revealed focal ^{18}F-FDG uptake in the upper outer right quadrant of the right breast and at the head of the pancreas and diffuse intensive ^{18}F-FDG uptake in the thyroid, kidneys, and ovaries. Along with multiple tumoral involvements in the supra/infra-diaphragmatic lymph nodes, diffuse and focal increased multiple ^{18}F-FDG accumulations were observed in the skeleton in favor of bone marrow involvement. Axial fusion (F) images revealed increased ^{18}F-FDG uptake at skull base bone marrow, thyroid lobes, head of the pancreas, bilateral kidneys, and ovaries F (b, d, f, h, j), and corresponding CT slices (a, c, e, g, i) revealed accompanying morphological findings MIP images.

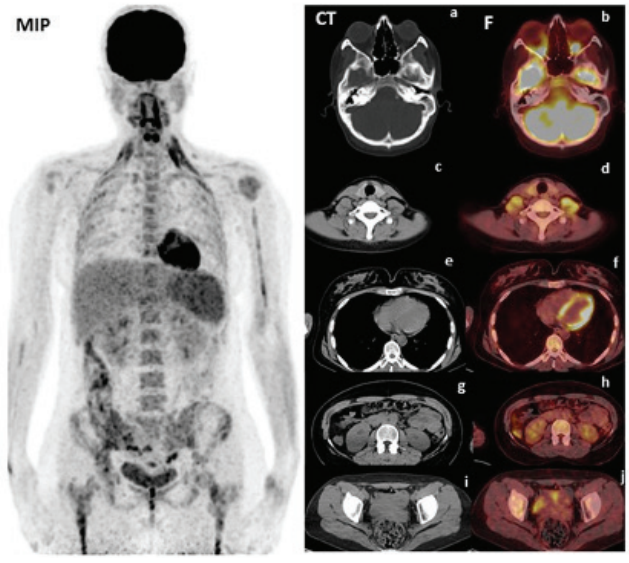

Figure 2. The rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone protocol was initiated by an adjusted renal cyclophosphamide dosage. After three cycles of chemotherapy, MIP image and axial F images (b, d, f, h, j) demonstrated a significant decrease in all nodal and extranodal involvements, and corresponding CT slices (a, c, e, g, i) revealed accompanying morphological improvements.

^{18}F-FDG PET/CT was established as the best technique for monitoring patients with extranodal involvement in HL and most NHL and must be taken into account in every stage of the disease since it can change the prognosis and treatment (1,2). A study that evaluated extranodal involvements in PET/CT among lymphomas revealed that the most common organ involvements were found in DLBCNHL, and the most common organ involvement in NHL has been reported in the gastrointestinal tract (3). Uccella et al. (4) systematically reviewed the morphological, immunohistochemical, and genetic characteristics of lymphoproliferative disorders of different endocrine organs. ^{18}F-FDG PET/CT findings of Burkitt's lymphoma involved the spleen, brain, bones, and 4 organs in the endocrine system, including thyroid, adrenal, pancreas, and testicle, which was presented in a 21-year-old patient (5). An 11-year-old female patient with anaplastic large cell lymphoma had seven different organ involvements with ^{18}F-FDG PET/CT, which presented the muscle, bone, kidney, pancreas, ovary, lymph nodes, and central nervous system (6). Another extranodal involvement of DLBCNHL, involving left orbit and ethmoid sinus, was shown with ^{18}F-FDG PET/CT (7). Puranik et al. (8) reported a case of NHL with four rare extranodal sites, including the adrenal, peripheral nerves, pancreas, and prostate, detected with ^{18}F-FDG PET/CT.

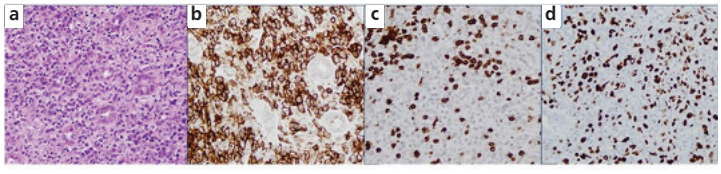

Figure 3. Renal biopsy revealed interstitial infiltration by large atypical lymphoid cells hematoxylin and eosin (a). Immunohistochemically atypical cells were positive for CD20 (b) and negative for CD3 (c). Ki67 proliferation index was high (d).

Ethics

Informed Consent: Written informed consent was obtained.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Y.Ö., G.Y., N.E., Concept: E.A., T.A., G.A., T.F.Ç., Design: E.A., T.F.Ç., Data Collection or Processing: E.A., T.A., G.A., Analysis or Interpretation: E.A., T.F.Ç., Literature Search: T.A., E.A., Writing: E.A., T.A., T.F.Ç., N.E.

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