Lymphomatous Involvement of the Kidneys in Mantle Cell Lymphoma

Carina Mari Aparici¹, Tianye Liu¹* and Gerald Hsu¹

¹University of California San Francisco, USA

*Corresponding author: Tianye Liu, University of California San Francisco, Tel: 415-680-4593; Email:tianyeliu@gmail.com

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Abstract

Mantle cell lymphoma rarely shows kidney involvement. We report the case of a 41 year-old man diagnosed with stage IV mantle cell lymphoma. Staging FDG PET/CT showed mild FDG activity in enlarged lymph nodes on both sides of the diaphragm as well as remarkably enlarged bilateral kidneys, with mild diffuse FDG activity in the renal cortex. After chemotherapy, the sizes of the kidneys and lymphadenopathy dramatically decreased. We recommend careful assessment of kidney involvement in patients with lymphoma during staging/surveillance with FDG-PET/CT. Although patchy or high diffuse FDG activity in the cortex can be more clear patterns of possible renal involvement, mild cortical FDG activity, such as seen in this case, is also a plausible pattern. The sizes of the kidneys can become a very important clue for accurate diagnoses of involvement.

Figure 1. A 41 year-old man with mantle cell lymphoma underwent FDG PET/CT before and after chemotherapy. Before chemotherapy, the MIP image (a) and the hybrid FDG-PET/CT images (b) showed diffused mildly hypermetabolic enlarged lymphadenopathy on both sides of the diaphragm as well as mild diffuse FDG cortical activity in remarkably enlarged kidneys. The patient was considered stage IV and received chemotherapy treatment. After chemotherapy, the MIP image(c) and the hybrid FDGPET/CT images (d) demonstrated marked decreased in sizes of the kidneys and lymphadenopathy. Renal lymphoma occurs commonly with non-Hodgkin lymphoma. The majority of these cases happen in intermediate or high-grade lymphomas including Burkitt and histiocytic varieties [1]. Mantle cell lymphoma (MCL), a rare type of non-Hodgkin’s lymphoma comprising only 6% of NHL cases[2, 3], is very rare to show kidney involvement with very few reported cases [4-6] There are few papers describing primary renal lymphoma involvement [7] and even fewer papers describing the imaging characteristics of lymphomatous renal involvement with FDG PET/CT. To the best of our knowledge, our case is the first case of MCL with kidney enlargement characterized with FDG-PET/CT. One prior case of lymphoma with renal involvement characterized by FDG-PET/CT was published by Navalkissoor et al in 2010 [8]. The pattern of renal involvement in both cases was very different, which could be hypothesized to be related to different types of non-Hodgkin’s lymphomas. Navalkissoor et al’s case showed a patient with high grade diffuse large B-cell lymphoma (DLBCL), mildly enlarged kidneys and intense diffuse FDG activity in the renal cortex. Our case on the other hand presents a patient with mantle cell lymphoma, very enlarged kidneys, and mild diffuse FDG activity in the renal cortex. We hypothesize that the imaging pattern of lymphomatous renal involvement by FDG-PET/CT imaging may vary depending on the type of lymphoma. Although intense patchy or diffuse
renal cortical FDG activity could raise suspicion for involvement, mild FDG cortical activity can also be seen and in these cases (like in our case) and increase in size can be an important clue. More information is needed about the different patterns of renal involvement in lymphoma for proper staging/surveillance with FDG-PET/CT imaging.

References


