Retroperitoneal Pleomorphic Liposarcoma Mimicking Adrenal Cancer in F-18 FDG PET/CT

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Abstract Liposarcoma is the second most common type of soft tissue sarcoma, but pleomorphic liposarcoma is the least common subtype. We present the case of a 42-year-old man who had experienced intermittent left flank pain for a month. A large soft-tissue mass was detected by ultrasonography in a local clinic, and he was referred for further evaluation. Positron emission tomography/computed tomography (PET/CT) with F-18 fluoro-2-deoxy-D-glucose (F-18 FDG) showed intense uptake in the retroperitoneal mass, which mimicked an adrenal cancer. The patient underwent left radical nephroadrenalectomy, and the tumor was revealed to be a pleomorphic liposarcoma upon pathological examination. When there is a large retroperitoneal mass with intense F-18 FDG activity, the possibility of a pleomorphic liposarcoma should be considered.

Keywords Liposarcoma · Retroperitoneal · Pleomorphic · F-18 FDG · PET/CT · Adrenal cancer

A 42-year-old man presented with intermittent left flank pain that had lasted a month. A large soft-tissue mass was detected by ultrasonography in a local clinic. F-18 FDG PET/CT of the patient shows intense uptake in the left adrenal region and contrast-enhanced CT also shows a retroperitoneal tumor that mimics left adrenal cortical cancer (Fig. 1) [1, 2]. The patient underwent left radical nephroadrenalectomy, and the tumor was revealed to be a pleomorphic liposarcoma upon pathological examination [3, 4]. Liposarcoma is the second most common type of soft tissue sarcoma [4]. There are four types of liposarcoma based on morphological features and cytogenetic aberrations [3]. The pleomorphic liposarcoma confirmed in this case is the least common subtype. There are some kinds of tumors that demonstrate increased F-18 FDG-activity in the retroperitoneal space as follows: adrenal cortical cancer [1], pancreatic cancer [5], advanced renal cell carcinoma [6], neurogenic tumors [7], and retroperitoneal metastasis [8]. When there is a large retroperitoneal mass with intense F-18 FDG-activity, the possibility of a pleomorphic liposarcoma should be considered.

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Fig. 1 F-18 FDG PET/CT of the patient shows intense uptake in the left adrenal region in anterior maximum intensity projection (a) and transverse (b) images. The maximum standardized uptake value of the lesion is 28.3. Contrast-enhanced computed tomography (c) also shows a heterogeneous retroperitoneal tumor without fat density that mimics left adrenal cortical cancer

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