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A Rare Case of Alveolar Rhabdomyosarcoma with Pancreatic Metastases and Pancreatitis Detected on FDG PET-CT Imaging

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Abstract

FDG PET-CT (F18-Flourodeoxyglucose Positron Emission Tomography-Computed Tomography) imaging is very useful in detection, staging, re-staging and monitoring therapy in various tumors. Rhabdomyosarcoma is known as an aggressive tumor and have a tendency of metastasize. Herein we report an alveolar rhabdomyosarcoma case in a 22 year old male patient with a very rare pancreatic metastases.

***Keywords*:** *rhabdomyosarcoma, fluorodeoxyglucose, positron emission tomography.*

Case Report

FDG PET-CT imaging was performed for staging purposes in a 22-year-old male patient who was diagnosed with alveolar type rhabdomyosarcoma as a result of biopsy taken from the mass found in the right forearm. On PET-CT imaging, a hypermetabolic (SUVmax: 19) mass with biopsy proven rhabdomyosarcoma was seen on the right forearm in the axial plane, with a size of approximately 14x7.5 cm, surrounding the bone structures. A few hypermetabolic metastatic lymph nodes medial to the right elbow joint (SUVmax: 5.5) and a separate nodular intramuscular synchronous lesion approximately 2 cm in size were detected (SUVmax: 12) within the muscle planes medial to the right humerus distal part. Approximately 5-10 metastatic hypermetabolic (SUVmax: 10) lymphadenopathies were detected in the right axillary and pectoral areas, the largest of which was 37 mm in size, some of which included central necrosis areas. In the thymus localization in the anterior mediastinal area suspicious milimetric hypermetabolic soft tissue lesions (SUVmax: 6) compatible with metastatic lymph node or intratimic lesion were detected. Increased metabolic activity (SUVmax: 7.6) was detected in the area of increased metastatic sclerosis at the anterior level of the right iliac crest.

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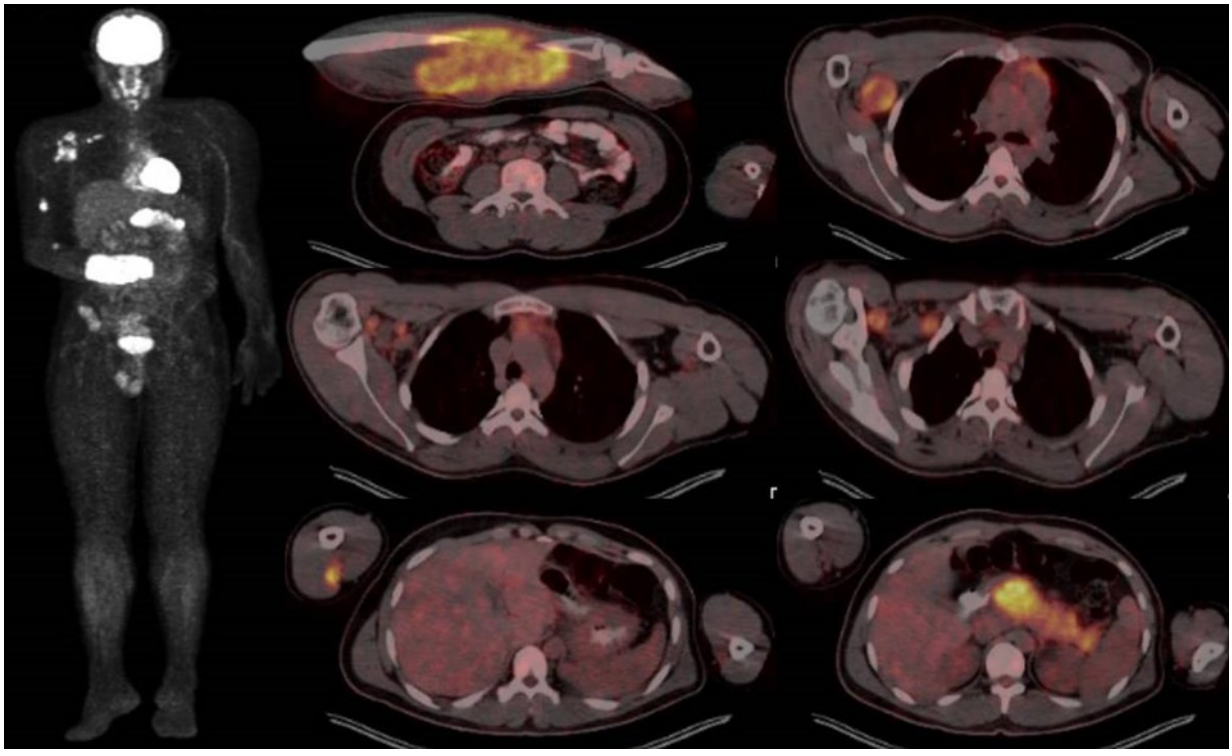
In addition to all these findings, an irregularly shaped hypermetabolic mass of approximately 48x47 mm in the axial plane at the level of the pancreatic corpus (SUVmax: 16) and heterogeneously increased FDG activity at the level of the other parts of the pancreatic corpus and the tail of the pancreas (SUVmax: 12) were noted. The findings described in the pancreas were reported as consistent with rhabdomyosarcoma metastasis and accompanying pancreatitis (Figure 1).



Discussion

Soft tissue sarcomas are rare cancers especially in adult population (1). Rhabdomyosarcomas (RMS) arise from myogenic precursor cells of various anatomical sites. RMS is the most common soft tissue tumor in childhood and adolescence whereas it is rarely seen in adults (1). RMS was described for the first time by Webner in 1854 (2). The primary common site is head and neck in childhood. Although in adults it is mostly seen in the extremities. RMS is composed of botryoid, embryonal, alveolar, and pleomorphic subtypes (3) and most commonly arises in the neck, trunk, and extremities, however, primary pancreatic RMS (P-RMS) is a rare entity (4,5). Primary rhabdomyosarcoma of pancreas which is an extremely rare entity is reported in a case report of a female aged 20 years (6). The authors concluded that however, RMS is frequent in childhood, but the pancreatic location is extremely rare. The physician should keep in mind the primary pancreatic location of rhabdomyosarcoma in young patients. RMS represents 3% of all the soft tissue sarcomas (7). Pancreatic location is extremely rare and represents around 0.5% (8). Common sites of metastases are lungs, sceletal system, lymph nodes and brain. Metastases to pancreatic tissue is very rare and only a few reports was found in the literature . In an interesting image report relating to an 8-year-old boy with embryonel

rhabdomyosarcoma metastatic to the pancreas the authors concluded that pancreatitis can accompany malignancy or be related to the obstruction caused by tumor, and patient's response to therapy for acute pancreatitis does not rule out malignancy (9). In this current case report FDG PET-CT findings of pancreatic metastases and accompanying pancreatitis in an alveolar rhabdomyosarcoma case in a 22 year old male patient. FDG PET-CT, with the advantage of being a whole body imaging method, has been useful in detecting all metastatic foci of RMS with a single imaging method.

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Authorship Contributions

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