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Editorial

A Rare Entity Pituitary FDG Uptake; What Should We Expect?

Editorial

F-18 fluorodeoxyglucose (FDG) positron emission tomography/computed tomography (PET/CT) is widely accepted modality in order to evaluate the cancer patients for staging, restaging and treatment response evaluation. The increasing trend towards application of this modality and growing number of cancer patient population concluded by increased number of FDG PET/CT studies performed. Incidental detection of various important findings unrelated to the first disease presentation is inevitable and frequent than expected. These findings contribute significant gain in patient management and sometimes prevent second malignancies. One of these secondary findings is incidental pituitary FDG uptake which is a rare situation. The clinical significance of this entity is not well established. This finding may represent malignant involvement rarely or benign causes like pituitary adenoma.

Incidental pituitary FDG uptake is a rare entity; reported to be 0.073% in a large series (40967 patients) [1]. However in another series researchers reported 0.8% rate for this finding whereas we found 4 cases in analysis of 2572 patients (0.2%) [2]. The patients (2F, 2M; 62.75±6.7 years old) were all referred for staging or treatment response evaluation of a previously diagnosed malignancy (Hepatocelullar, stomach, lung carcinoma and mesothelioma). The estimated SUVmax levels of the lesions on FDG PET/CT were mean: 13.99±8.4. Two of the patients were diagnosed to have malignant involvement of primary malignancy according to MR results. These patients' F-18 FDG PET/CT images also have shown disseminated metastatic disease and one of these patients died five months follow up. The other two patients' primary malignant disease were limited to the first cite (no distant metastasizes according to the PET/CT and one of these patient three month follow up PET/CT showed stabile FDG uptake in pituitary region.

Previous studies have reported increased FDG uptake in pituitary micro or macroadenomas [3,4], One of these cases was an uptake related to nonfunctioning adenoma of a patient with mucosa-associated lymphoid tissue [4], Also Jeong et al., have found no significant relationship between hormone secretion potential of adenomas [1], In a previous series Hyun et al. have reported that the incidental pituitary uptake may be related to a pathologic lesion in 40.8% of patients and 89.7% of these patients was diagnosed as adenoma [1], Besides adenoma these lesions might be malignant involvement of a known malignancy like in two of our cases. Soussan et al. have reported malignant involvement of pituitary gland by Nonhodgkins lymphoma in a patient with FDG PET/CT [5], another case report has shown metastasizing Non-small cell lung cancer to pituitary gland [6], Additionally there are case reports of patients with Erdheim-Chester disease involvement and hypophysitis due to ipilimumab treatment [7,8].

According to the findings of this observation; in patients with disseminated metastases the FDG uptake in pituitary region may be related to metastases and in patients without metastases this uptake might be related to a benign cause.

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