



Clinical Group

International Journal of Clinical Endocrinology and Metabolism

DOI CC BY

Zehra Pınar Koç^{1*}, Pelin Özcan Kara¹ and Emel Sezer²

¹Mersin University, Medical Faculty, Nuclear Medicine, Turkey

²Department of Oncology, Mersin, Turkey

Dates: Received: 09 June, 2017; **Accepted:** 04 July, 2017; **Published:** 05 July, 2017

***Corresponding author:** Zehra Pınar Koç, Assoc Prof Mersin University Nuclear Medicine Department, 33343 Mersin/Turkey, Tel: +903242410000/2524; Fax: +903242410098; E-mail: zehrapinarokoc@gmail.com

<https://www.peertechz.com>

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 (Hepatocellular, 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.

References

1. Jeong SY, Lee SW, Lee HJ, Kang S, Seo JH, et al. (2010) Incidental pituitary uptake on whole-body 18F-FDG PET/CT: A multicentre study Eur J Nucl Med Mol Imaging 37: 2334-2343. [Link: https://goo.gl/hsmdVv](https://goo.gl/hsmdVv)
2. Hyun SH, Choi JY, Lee KH, Choe YS, Kim BT (2011) Incidental focal 18F-FDG uptake in the pituitary gland: clinical significance and differential diagnostic criteria. J Nucl Med 52: 547-550. [Link: https://goo.gl/fvmcgA](https://goo.gl/fvmcgA)
3. Komori T, Martin WH, Graber AL, Delbeke D (2002) Serendipitous detection of Cushing's disease by FDG positron emission tomography and a review of the literature. Clin Nucl Med 27: 176-178. [Link: https://goo.gl/7M88xo](https://goo.gl/7M88xo)
4. Campeau RJ, David O, Dowling AM (2003) Pituitary adenoma detected on FDG positron emission tomography in a patient with mucosa-associated lymphoid tissue lymphoma. Clin Nucl Med 28: 296-298. [Link: https://goo.gl/rMFsGz](https://goo.gl/rMFsGz)
5. Soussan M, Wartski M, Ezra J, Glaisner S, Pecking AP, et al. (2008) Non-Hodgkin lymphoma localization in the pituitary gland: diagnosis by FDG-PET/CT. Clin Nucl Med 33: 111-112. [Link: https://goo.gl/dFbWNJ](https://goo.gl/dFbWNJ)

0016

6. Agarwal KK, Sharma P, Singla S, Suman Kc S, Bal C, et al. (2014) A rare case of non-small cell lung cancer metastasizing to the pituitary gland: detection with (18)F-FDG PET-CT. Clin Nucl Med 39: 318-319. [Link: https://goo.gl/3AVS9C](https://goo.gl/3AVS9C)
7. Mukherjee A, Dhull VS, Karunanithi S, Sharma P, Durgapal P, et al. (2014) Pineal gland involvement in Erdheim-Chester disease detected on (18)F-FDG

PET-CT imaging: a case report and review of literature. Clin Imaging 38: 367-371. [Link: https://goo.gl/cUwPTV](https://goo.gl/cUwPTV)

8. Van der Hiel B, Blank CU, Haanen JB, Stokkel MP (2013) Detection of early onset of hypophysitis by (18) F-FDG PET-CT in a patient with advanced stage melanoma treated with ipilimumab. Clin Nucl Med 38: 182-184. [Link: https://goo.gl/H4Ws3F](https://goo.gl/H4Ws3F)