

Eda Demir Önal¹, Oğuzhan Oğuz², Burçak Polat¹, Zühal Kandemir², Nurettin Karaoğlanoğlu, Reyhan Ersoy¹, Bekir Çakır¹

¹ Yıldırım Beyazıt University Medical School, Ankara Atatürk Education and Research Hospital, Endocrinology and Metabolism Department, Bilkent, Ankara, TURKEY

² Yıldırım Beyazıt University Medical School, Ankara Atatürk Education and Research Hospital, Nuclear Medicine Department Bilkent, Ankara, TURKEY

³ Ankara Atatürk Chest Disease and Chest Surgery Education and Research Hospital, Keçiören, Ankara, TURKEY

INTRODUCTION

- Cushing's syndrome may be either corticotropin (ACTH)-dependent or -independent.
- Ectopic secretion of ACTH by nonpituitary tumors accounts for 10 to 15 percent of ACTH dependent Cushing syndromes.
- Generally it is difficult to localize the ACTH secreting tumor by conventional imaging methods because these tumors are often small in size.
- Neuroendocrine tumor cells exhibit somatostatin receptors on their cell surfaces. By using this feature 111-In-octreotide scan is an alternative diagnosing method. Here we present a case of ectopic ACTH syndrome diagnosed with octreotide scan.

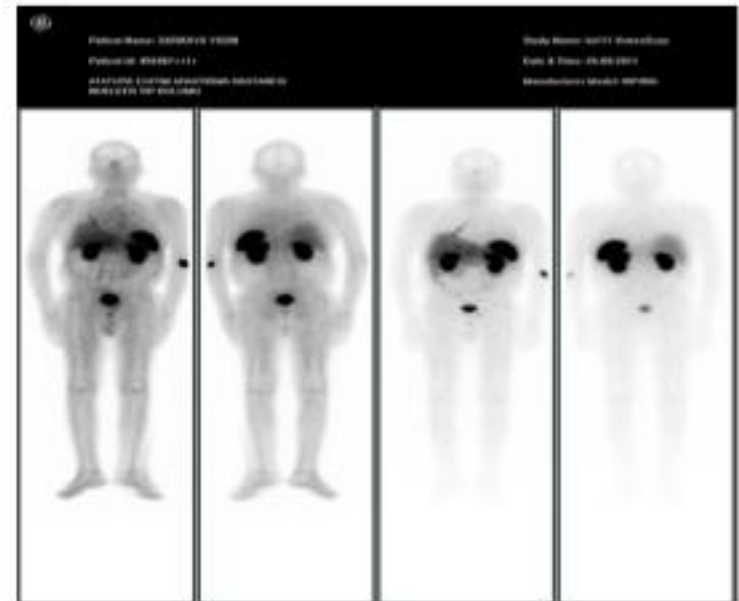
CASE PRESENTATION

- A 26 year old male patient presented with moon face, purplish striae, supraclavicular fat pads and proximal muscle weakness.
- Laboratory tests were as follows:

	Normal values	Patient results
Sodium	136 – 145 mmol/L	144
Potassium	3,5 – 5,1 mmol/L	2,4
06:00 cortisol	µg /dL	33
23:00 cortisol	µg /dL	39
24 hour urinary free cortisol	0.0 – 60 µgr/gün	258
Cortisol after 1 mg Dexamethasone supression test	<1,8 µg /dL	31,2
Cortisol after 2 day 8 mg Dexamethasone supression test	<1,8 µg /dL	30,6
ACTH	0 – 60 pg/mL	92

- Pituitary magnetic resonance imaging (MRI) revealed no mass.
- Inferior petrosal sinus sampling was negative with no increase in ACTH after CRH administration.

- On thorax computerized tomography (CT) there was a 14 mm nodule in the middle lobe of the right lung. The patient was a heavy smoker. .
- There was no pathology on 18-FDG positron emission tomography scan.
- But 111-In -Octreotide scan depicted the neuroendocrine tumor located in the right lung.



- Following surgery there was no need for antihypertensive treatment or insulin therapy any more and hypokalemia did not recur.

CONCLUSION

- The last step of approaching to a patient with ACTH dependent Cushing Syndrome is to detect the source of ACTH secretion. As most of the ACTH secreting tumors arise from thorax it is important to start evaluation from this anatomic localisation. CT or MRI is the first imaging modality of choice. The sensitivity of CT to detect a small tumor such this is 53 % whereas it is 37 % in MRI. The sensitivity of octreotide scan in detecting ACTH secreting tumor is approximately 30-53 %. It is the last but not least choice of non invasive procedure on the way going to surgery as in our case.