

Cushing syndrome with ectopic secretion of ACTH by lung carcinoma

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INTRODUCTION

Cushing syndrome due to ectopic ACTH secretion is a form of ACTH-dependent Cushing syndrome caused by excess secretion of ACTH by a benign or, more often, malignant non-pituitary tumor. Prevalence of endogenous Cushing syndrome is 1/26 000. Ectopic ACTH secretion is responsible for 7 to 15% of the cases. The lung is the primary site of 50% of ectopic ACTH secretion cases (bronchial endocrine tumor and small cell lung cancer). Small peripheral bronchial carcinoids can easily be missed on CT chest. MRI and octreotide scintigraphy are of little value to identify small bronchial carcinoid (33% – 44% of tumours missed).

CASE REPORT

We report a case of ectopic ACTH syndrome caused by a lung carcinoma, a 37-year-old male with clinical features of Cushing syndrome, serious hypokalaemia, hypercortisolemia. Endocrinological investigation confirmed the diagnosis of ectopic ACTH production. We performed 2mg dexamethasone suppression test which showed no suppression and 8mg only partial suppression. Results from sampling sinus petrosus inferior pointed at ectopic cause. PET CT scan of chest found solitary deposit (14mm) in upper right lobe of lungs. Deposit showed slight metabolic activity. Consequent thoracotomy histologically confirmed primary lung carcinoma. Time from first endocrine tests to surgical removal of tumor was very short (less than 4 months) and patient showed remarkable good results.

CLINICAL FEATURES



LABORATORY RESULTS

Diurnal profile	8:00	16:00	20:00	24:00	8:00	normal value
Serum cortisol	705,6	910,5	783,0	673,0	623,8	118-618 nmol/l
ACTH	115,0	-	-	-	135,0	0-46 pg/ml

Urinal parameters	I.	II.	normal value
Free cortisol	8232,6	6104,1	153-789 nmol/24h.
Creatinin	16,7	17,1	4-10,5 mmol/24h.

Dexamethasone suppression test	2mg	8mg
Serum cortisol	532,2	791,2
Urine cortisol	4387,9	2362,4

CONCLUSIONS

Localisation of the source of ectopic ACTH can be problematic. Surgery of tumour is normally curative. Our case is fine example. Fast diagnostics and surgery prevented patient from complications connected with hypercortisolemia and also lung tumour.

References

- [1] F. Beuschlein and G. D. Hammer, "Ectopic pro-opiomelanocortin syndrome," *Endocrinology and Metabolism Clinics of North America*, vol. 31, no. 1, pp. 191–234, 2002
- [2] I. Ilias, D. J. Torpy, K. Pacak, N. Mullen, R. A. Wesley, and L. K. Nieman, "Cushing's syndrome due to ectopic corticotropin secretion: twenty years' experience at the National Institutes of Health," *Journal of Clinical Endocrinology and Metabolism*, vol. 90, no. 8, pp. 4955–4962, 2005
- [3] J. L. Doppman, L. Nieman, D. L. Miller et al., "Ectopic adrenocorticotrophic hormone syndrome: localization studies in 28 patients," *Radiology*, vol. 172, no. 1, pp. 115–124, 1989
- [4] D. J. Torpy, C. C. Chen, N. Mullen et al., "Lack of utility of (111) In-pentetreotide scintigraphy in localizing ectopic ACTH producing tumours: follow-up of 18 patients," *The Journal of Clinical Endocrinology & Metabolism*, vol. 84, pp. 1186–1892, 1999

