Acute adrenal insufficiency as a fist sign of metastatic pulmonary carcinoma

Adina Manolachie1, Constantin Volovat2, Cristina Grigorescu3, Gina Bodnariu4, Bogdan Gafon5, Ioana Armasu6, Leitia Leustean1, Carmen Vulpoi1

1-Department of Endocrinology, University of Medicine and Pharmacy ‘Gr.T.Popa’, Iasi; 2- Department of Oncology, Victoria Hospital, Iasi; 3- Department of Thoracic Surgery, University of Medicine and Pharmacy ‘Gr.T.Popa’, Iasi; 4- Department of Diabetes, nutrition and metabolic diseases, University of Medicine and Pharmacy ‘Gr.T.Popa’, Iasi; 5 - Department of Oncology, Regional Institute of Oncology, Iasi.

INTRODUCTION

Adrenal insufficiency:
- a relatively rare disease
  - incidence - now cases: 0.5-1.0/100,000 population per year
  - prevalence - 4-11 cases /100,000 population
  - the tuberculous form is most often seen in man: M:F 1.29:1 and the autoimmune in woman F:M ratio 2.6:1
  - 60-70% of cases is diagnosed between 50-59 de ani years of age
- etiology:
  - most frequent autoimmune or infectious
  - sometimes caused by metastatic lesions, genetic disorders and bilateral adrenal hamartoma.

- The adrenal glands are a common site for secondary lesions derived from malignant melanoma, lymphoma, renal, breast, colon and breastepulmonary tumours.
- Adrenal metastasis, at the initial diagnosis of non-small cell lung cancer, occurs in less than 10% of lung cancer patients.
- Most cases involve solitary, unilateral, small asymptomatic lesions.
- Bilateral adrenal metastases are observed in less than 3% of patients with lung cancer.

CLINICAL CASES

Patient C. E. 65 years old
- severe asthenia
- aracne
- digestive disorders
- weight loss
- hypotension

- no remission of symptoms after administration of macromolecular solutions raised the suspicion of primary adrenal insufficiency, confirmed by functional corticotrop balance:
  - increased ACTH = 344 pg/ml and
  - low-normal cortisol levels = 6.38 ug/dl.

- Steroid replacement (hydrocortisone 15 mg /per day) determined significantly clinical improvement, normalization of blood pressure and electrolyte imbalances.

Patient B. V. 57 years old
- heavy smoker and alcohol consumer

- in July 2014, after an intervention for Dyspnea retraction, he decompensated a primary adrenal insufficiency (anamnestic, confirmed at that time by the biological data).

- Steroid substitution was started with a good initial evolution.

- After 3 months he stopped the treatment and was hospitalized with adrenal crisis:
  - weight loss
  - important dehydration
  - weakness
  - anaemia
  - digestive disorders

- Abdominal ultrasound (fig. 4) revealed large left adrenal lesion (50x26 mm)

- Corticosteroid replacement therapy ameliorated the status but the persistence of anorexia, asthenia, and inflammatory syndrome (ESR 115 mm, CRP 3.59 mg/dl, C3:280 mg/ml) suggested a severe underlying cause.

- Pulmonary radiography (figure 5) showed right apical lung nodule (35x45 mm) confirmed by thoraco-abdominal CT, which revealed a bilateral adrenal invasion.

CONCLUSIONS

- The frequency of adrenal metastasis of primary lung cancer increases with disease progression, from 10 to 40%.
- Although adrenal metastases are usually unilateral, bilateral adrenal metastases are seen in 10% of all lung cancer patients.
- Clinical manifestations of adrenal insufficiency are significantly less frequent.
- Patients with adrenal secondary lesions are typically asymptomatic, probably because a destruction of more than 90% of adrenal cortex is needed for clinical symptoms.
- Patients usually present with adrenal insufficiency as a first manifestation.
- Adrenal crisis was, in our two cases, the first symptom of advanced pulmonary cancer, leading to its diagnostic and therapeutic solutions.

REFERENCES:

1. Management of Adrenal Metastases in Cancer Patients
   Harry McGirt, MD, Howard Chadwick, MD, James C. Crotzer, MD, John Rhyff, MD, John S. Delaney, MD, and W. Brynford Caves, MD

2. Large bilateral adrenal metastases in non-small cell lung cancer
   Chusung Kang, MD, Apolline de Venne, Svenne Metz, Emilien Debruyne, Koenraad Haebel.