P19. [79] Paraneoplastic manifestation of severe hyponatremia caused by Syndrome of inappropriate antidiuretic hormone secretion (SIADH) in small cell lung carcinoma

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Introduction

Paraneoplastic syndromes are a group of clinical disorders, associated with malignant diseases, not directly related to the localization of primary or metastatic tumors. These syndromes are described in lymphoma, thymoma, mesothelioma, Ewing's sarcoma, and a variety of carcinomas. Approximately 70% of malignancy-related cases are as result of small cell lung cancer (SCLC). Associated with lung cancer, include: neurologic, endocrine, dermatologic, rheumatologic, hematologic, ophthalmological syndromes, glomerulopathy and coagulopathy (Trousseau's syndrome). Small-cell lung carcinoma is an aggressive form of lung cancer, strongly associated with cigarette smoking, usually presents in central airways, infiltrating the submucosa. Common symptoms: cough, dyspnea, weight loss, fatigue. Over 70% of patients present with metastatic disease: liver, adrenals, bone, brain. Due to its neuroendocrine nature, small-cell carcinomas can produce ectopic hormones, adrenocorticotropic hormone and anti-diuretic hormone (ADH, also called vasopressin). Lambert-Eaton myasthenic syndrome is paraneoplastic condition linked to small-cell carcinoma. Published data suggest that the average incidence of clinically manifested SIADH in patients with newly diagnosed small cell lung cancer is only 4%. Syndrome of inappropriate anti-diuretic hormone secretion (SIADH) was first associated with malignancy when described in two patients with bronchogenic carcinoma in 1957.

Case Presentation

A 60 year old male, smoker for 30 years (48 pack-per-year smoking history), was hospitalized because of one month history of weakness, dry cough, chest pain, syncope. Physical examination - normotensive, afebrile, heart rate 100/min, weight 79 kg. Rhythmic heart action. Lung auscultation revealed diminished breath sound in right lung. Abdomen: bowel sounds present, with no organomegaly. Extremities: no edema, warm, pulses positive. Initial 12 lead ECG was normal. Laboratory results - hyponatremia 117mmol/L, with normal potassium, calcium, magnesium, phosphorus, urea, creatinin, uric acid, proteins in serum and urine, tumour markers (normal CEA, CA-19-9, AFP, PSA, Cyfra 21-1), mildly elevated NSE, reduced plasma osmolality 248,3mosm/kg and urine sodium below 40mEq/L/24 hours.

Chest X-ray presented parenchymal consolidation in right lung in communication with enlarged right hilus (Figure 1).

The patient undrewent bronchoscopy and biopsy. Bronchoscopy revealed paresis of right vocal cord, shortened main carina, left bronchial tree was normal. Right bronchial tree with edematous carina superior lat.dex., submucous infiltration with stenosis of anterior branch of upper lobe and intermediate bronchus (Figure 3, 4).

Patohystology morphologic features were consistent with small cell lung carcinoma (Figure 5).

Lung CT scan presented hypodense parenchimal change next to right hilus with compression of right bronchus and atelectasis, with mediastinal lymhadenopathy (Figure 2).

Also for staging abdominal ultrasound was performed, organs were normal, only enlarged adrenal glands were detected.

After hyponatremia was corrected, restricted fluid intake (maximum 1000ml/day), and health status improven, further treatment was continued at Institute of Oncology.

Discussion

Ectopic production of large amounts of ADH leads to syndrome of inappropriate antidiuretic hormone hypersecretion (SIADH), defined by hyponatremia, water retention, hypo-osmolality. ADH plays an important role in regulating the balance of fluids. It lowers the amount of urine the and increases the amount of water the kidneys take up. SIADH is characterized by neurological and psychiatric symptoms attributable to cerebral edema. Symptoms may be mild and vague at first, but tend to build. Severe cases may involve these symptoms: irritability and restlessness, loss of appetite, cramps, nausea and vomiting, muscle weakness, confusion, hallucination, personality changes, seizures, stupor, coma. The goal of treatment is very gradual coorrection of hyponatremia and fluid restriction. Hyponatremia inoncology practice, may be a negative prognostic factor in cancer patients based on a systematic analysis of published studies.

Keywords - small cell lung carcinoma, SIADH, hyponatremia, Lambert-Eaton myasthenic syndrome, paraneoplastic syndrome

FIGURE 1.

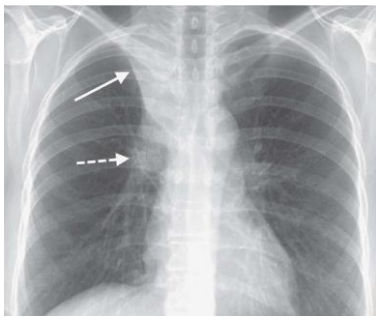

FIGURE 2.

FIGURE 3.

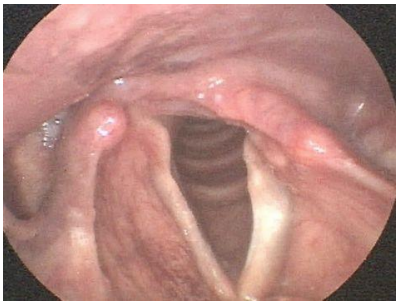

FIGURE 4.

FIGURE 5.