

A case of combined PTH-dependent and PTH-independent hypercalcemia

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Patient D., 74 years old, suffering from type 2 diabetes mellitus, was urgently taken to hospital No. 10 in Minsk with complaints of weakness, nausea and dry mouth. On admission glycemia was 26 mmol/l. Laboratory examinations revealed elevated levels of urea - 34.5 mmol/l, creatinine - 238.2 μ mol/l, calcium - 3.12 mmol/l, extremely low levels of vitamin D - 4.8 ng/ml, high levels of parathyroid hormone - 101.3 pg/ml. The laboratory ratio of calcium and parathyroid hormone was assessed as parathyroid hormone-dependent hypercalcemia. An ultrasound examination of the thyroid and parathyroid glands did not reveal any pathological formations. No focus of high uptake of the ^{99m}Tc MIBI around the parathyroid gland was also identified. Clinical diagnosis: primary hyperparathyroidism in the absence of visualization of the source of parathyroid hormone production. Severe vitamin D deficiency. Type 2 diabetes. Arterial hypertension grade 2. Nephropathy of combined origin. CKD C4 (eGFR 29.4 ml/min/1.73 m²). She was discharged for outpatient treatment after calcium values normalized. After 3 weeks, the patient was again admitted with complaints of severe general weakness, thirst, frequent urination, nausea, vomiting and dizziness. Extremely high values of total calcium were noted – 4.26 mmol/l. The condition was regarded as the onset of a hypercalcemic crisis. Conservative therapy did not lead to normalization of serum calcium. New ultrasound examination of right parathyroid gland revealed a hypoechoic formation 21.5*7.8*11.3 mm similar to

a parathyroid adenoma, in the thickness of the left lobe - an isoechoic node measuring 12.2*14.0*18.6 mm and altered lymph nodes in the supraclavicular areas. A trephine biopsy of the cervical lymph node was performed, and sarcoid-type granulomas were identified. During surgery, the altered lower parathyroid gland on the right and the left lobe of the thyroid gland were removed. By the evening after surgery the level of calcium in serum decreased to 2.32 mmol/l; after 10 days, the level of calcium was above 3 mmol/l with a steady increase to 3.96 mmol/l, while the level of parathyroid hormone decreased. A diagnosis of sarcoidosis was made. The patient received methylprednisolone at a dose of 32 mg daily. A day after starting methylprednisolone, calcium levels gradually began to decrease. In the presented clinical case, a thorough analysis of clinical, laboratory and instrumental data revealed a rare combination of parathyroid hormone-dependent and parathyroid hormone-independent hypercalcemia. The patient was diagnosed with primary hyperparathyroidism and sarcoidosis with involvement of the mediastinal and cervical lymph nodes.

DOI: 10.1530/endoabs.99.EP1332

Endocrine Abstracts

May 2024 Volume 99
ISSN 1479-6848 (online)

26th European Congress of
Endocrinology 2024

11–14 May 2024, Stockholm, Sweden



published by
bioscientifica

Online version available at
www.endocrine-abstracts.org