

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Acid-Base Balance-Electrolyte Quiz – Case 37

A 62-year-old man with polyuria and constipation was admitted in the outpatient clinic. Biochemical evaluation revealed hypercalcemia (serum calcium 11.5 mg/dL), with normal PTH levels 44 pg/mL (normal value 10–65 pg/mL) and creatinine levels (1 mg/dL).

Which of the following is correct?

- a. The patient exhibit primary hyperparathyroidism
- b. The indices of renal calcium excretion should be checked for the correct diagnosis
- c. Serum phosphate levels can be useful for the diagnosis of hyperparathyroidism
- d. The normal PTH levels can exclude the diagnosis of primary hyperparathyroidism

Comment

The patient presented with hypercalcemia associated with inappropriately normal PTH levels, a finding suggestive of primary

ARCHIVES OF HELLENIC MEDICINE 2013, 30(5):640
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2013, 30(5):640

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hyperparathyroidism. However, the evaluation of renal calcium excretion is necessary for the differentiation between primary hyperparathyroidism and familial hypocalciuric, hypercalcemia (FHH), a genetic disorder generally resulting in mild hypercalcemia with minimal clinical consequences. The calcium/creatinine clearance index (CCCR) calculated from the equation: (24h urine calcium/serum calcium)/(24h urine creatinine/serum creatinine) is the preferred test to differentiate between the two diseases. A value of less than 0.01 is suggestive of FHH (as it was the case in our patient, CCCR=0.005), while a value of 0.002 or higher is suggestive of primary hyperparathyroidism. It should be mentioned that serum phosphate levels are of limited value in the differential diagnosis of hypercalcemia.

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Answer: The indices of renal calcium excretion should be checked for the correct diagnosis
