

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

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### Acid-Base Balance-Electrolyte Quiz – Case 39

A 24-year-old woman was admitted to the clinic with a two weeks-long history of polyuria, anorexia, constipation and abnormal gait. X-ray of the thorax showed bilateral reticulonodular infiltrates and hilar lymphadenopathy. Laboratory investigation showed urea 80 mg/dL, creatinine 1.5 mg/dL, sodium 144 mEq/L and potassium 3.6 mEq/L.

All the following tests should be performed except:

- Determination of serum magnesium levels along with a CT scan of the head
- Contrast CT of the thorax
- Determination of serum angiotensin converting enzyme levels
- Determination of serum calcium and PTH levels

#### Comment

*The patient presented with symptoms and laboratory findings suggestive of hypercalcemia associated with volume depletion*

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*(increased urea/creatinine ratio). Furthermore, CT scan of the thorax is mandatory in view of the findings of the X-ray. In fact, serum calcium levels were elevated (13.5 mg/dL) and the contrast CT of the thorax showed hilar, and mediastinal lymphadenopathy, finding suggestive of sarcoidosis. The increased serum angiotensin converting enzyme levels (205 U/L, normal value 20–70 U/L) can support the diagnosis.*

*In contrast, since the calcium levels are available, the CT brain scan can be avoided. Thus, serum calcium levels should be determined in patients with neurological signs. However, in such cases to exclude the diagnosis of lymphoma lymph-node biopsy is mandatory. It is worth mentioning that sarcoidosis should be considered in the differential diagnosis of hypercalcemia associated with low PTH levels (the PTH levels in our case was 15 pg/mL).*

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*Answer: Determination of serum magnesium levels along with a CT scan of the head*

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