History solves the mystery: an unusual cause of hypercalcemia

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To the Editor,

Primary hyperparathyroidism and malignancy are by far the most common causes of hypercalcemia, though the differential diagnosis is usually broad. Determining the etiology of hypercalcemia is the cornerstone of its management and prevention/treatment of the associated acute kidney injury. Herein, we describe the case of a patient who developed severe hypercalcemia as a result of ‘pica’, which in turn was secondary to iron deficiency anemia.

A 66-year-old White man with a history of hypertension and diabetes mellitus type 2 has presented with fatigue, diarrhea, frequent urination and hand tremors for 3 days. His vital signs were stable. Laboratory studies demonstrated acute kidney injury with a serum creatinine of 2.2 mg/dL (baseline ~1), hypercalcemia with a serum calcium of 14.8 mg/dL, and metabolic alkalosis with a serum bicarbonate level of 39 mmol/L. His hemoglobin was 10.7 g/dL. Patient denied taking any calcium or vitamin D supplements or antacids. His serum parathyroid hormone (PTH) level was at the lower end of normal range (15 pg/mL); PTH-related peptide and vitamin D level were not elevated. Serum protein electrophoresis was negative for paraproteinemia and age-appropriate cancer screening was apparently negative. The serum creatinine and calcium levels improved with intravenous hydration. He was later found to have iron deficiency with an iron saturation of 6% and on detailed questioning, he admitted to having an irresistible urge to eat small white stones from his backyard, which were found to be chalks, i.e., calcium carbonate (Fig. 1). This is the most likely cause for both his hypercalcemia and metabolic alkalosis. The patient was managed with counseling and iron replacement. He was referred to gastroenterology for further work up of iron deficiency.

Fig. 1 Calcium carbonate stone from the patient’s backyard

Pica is a disorder characterized by an appetite for non-nutritive substances, such as ice, paper, metal, paint, stones, etc. Though the pathophysiology is uncertain, it has been often linked to iron deficiency and mental disorders of obsessive–compulsive spectrum [1, 2]. In our patient, pica has turned out to be the cause for hypercalcemia. Through this case, we would like to emphasize the importance of ‘most inexpensive’ investigation in the evaluation of hypercalcemia, i.e., ‘careful history taking’.

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