

# Episodes 7 & 8

This week, the CPSers introduce a schema for hypercalcemia in Episode 7 and then apply it to an fascinating unknown case from guest Dr. Bob Centor in Episode 8.

## **Problem Representation - episode 8**

Dr. Centor presented the case of a 50-year-old man with a history of Crohn's disease treated with a total colectomy who presented with subacute increased ileal output, tachycardia, and hypercalcemia.

## **Schemas**

The CPSers' schema for hypercalcemia classifies the causes into PTH and non-PTH mediated etiologies.

## **Diagnosis - episode 8**

They eventually cracked the case when thyroid studies confirmed a diagnosis of hyperthyroidism - a rare cause of hypercalcemia!

## **Teaching points**

- The combination of **constipation and polyuria** is much more specific for hypercalcemia than classically described symptoms (bones, stones, groans, and psychiatric overtones).
- A **chloride/phosphate ratio** ( $\geq 33$ ) suggests a PTH or PTHrP-mediated cause of hypercalcemia.
- 1,25-OH Vitamin D is the biologically active form of Vitamin D and can lead to hypercalcemia, but don't forget to look at its precursor, 25-OH Vitamin D.
  - If both are elevated, this suggests **excessive Vitamin D intake**.
  - If just 1,25-OH Vitamin D is elevated, then search for an **underlying granulomatous process**.

## **Clinical Reasoning Pearl**

In certain scenarios, a "normal" value may be **abnormal**.

### For example

In patients with hypercalcemia, the parathyroid gland should completely suppress PTH production.

If the PTH returns in the normal range, the problem must lie with the parathyroid gland.