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### Hypercalcemia in renal transplant patient with *Pneumocystis jirovecii* pneumonia

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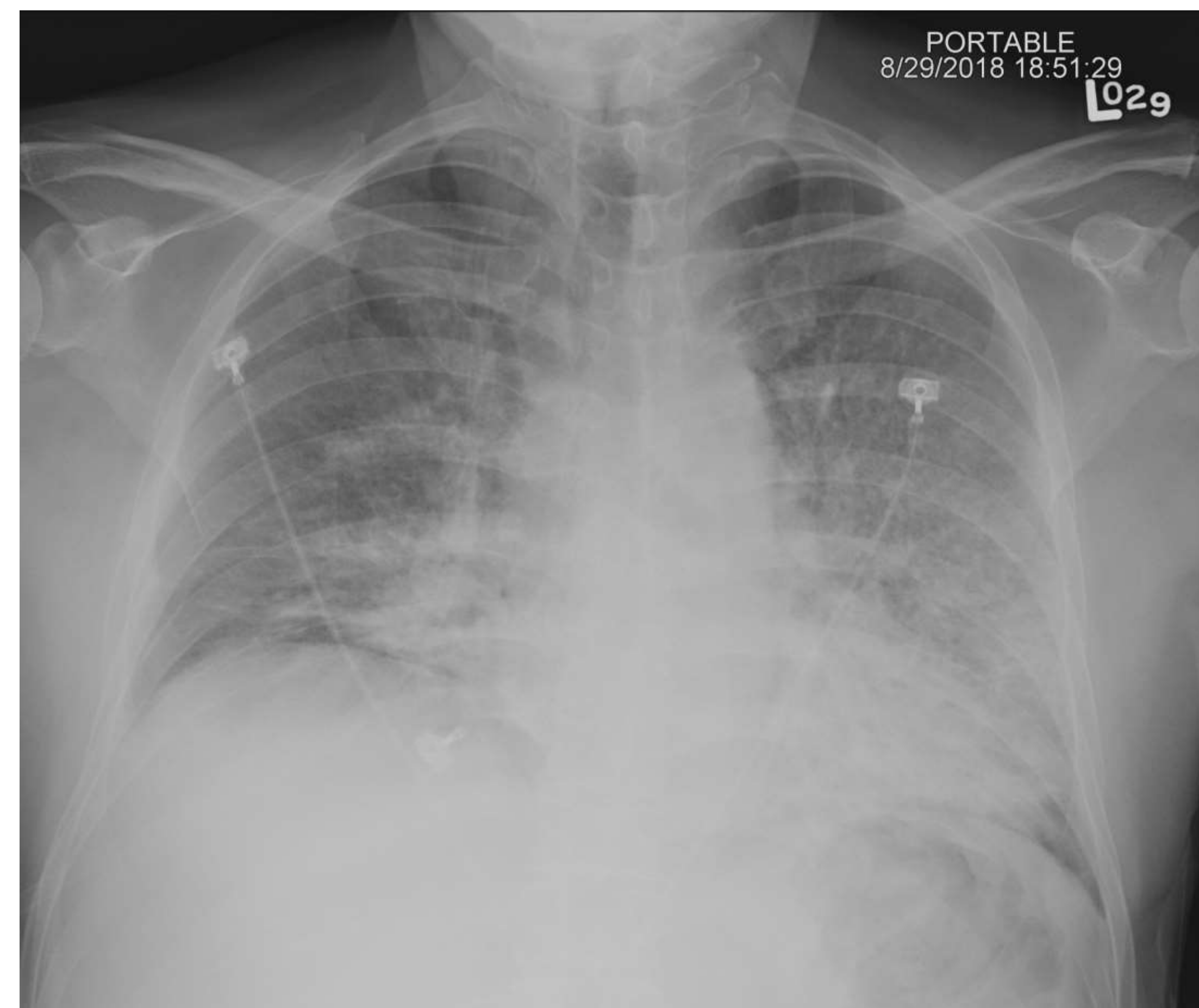
## Learning Objectives

- Recognize PJP as a cause of hypercalcemia in renal transplant recipients
- Identify that treatment of PJP should improve PJP-associated hypercalcemia

## Case Description

- 63-year old male with autosomal-dominant polycystic kidney disease with renal transplant on immunosuppressive therapy who presented with cough and exertional dyspnea. He was hypoxic with coarse breath sounds bilaterally.
- CT chest revealed ground-glass opacities with increased interstitial markings of the left lung
- Labs were significant for hypercalcemia with ionized calcium 1.53 mmol/L, parathyroid hormone 97 pg/mL, 25-hydroxy vitamin D 30 ng/mL and increased 1,25-dihydroxy vitamin D to 156 pg/mL
- Started on intravenous normal saline, furosemide and calcitonin, however, he remained hypercalcemic
- Endocrinology evaluated him and he was started on ketoconazole and received one dose of denosumab, with no improvement in calcium levels
- Bronchiolar lavage cultures obtained from bronchoscopy were positive for PJP
- He was started on intravenous steroids, clindamycin and primaquine due to acute kidney injury, precluding the use of trimethoprim/sulfamethoxazole
- His calcium levels improved with treatment of PJP, and he was discharged home

## Images



**Figure 1: Chest X-ray**



**Figure 2: Lateral Chest X-ray showing interstitial lung opacities**

## Discussion

- We present a case of hypercalcemia in the setting of PJP in a renal transplant recipient
- Although the mechanism is not fully understood, it is thought to be secondary to an increase in 1,25-dihydroxy vitamin D, possibly related to a granulomatous reaction against PJP
- Patients with PJP may have hypercalcemia that improves with treatment
- It is important to consider PJP as the etiology of unexplained hypercalcemia in renal transplant patients

## References

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