MAR Pediatrics (2025) 6:2

Case Report

Hypervitaminosis D-Induced Hypercalcemia and Nephrocalcinosis: Strategies for Prompt Resolution

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Received: 23 Aug 2025

Published: 01 Sep 2025

Introduction

Hypercalcemia secondary to vitamin D intoxication has been rising with the availability of several formulations over the counter. We report on the management of one such case.

Case Details

A 6-month-old baby presented with failure to thrive. Initial lab investigations revealed hypercalcemia (serum calcium: 18.2 mg/dL), low intact parathyroid hormone (6.2 pg/mL), and elevated 25(OH) vitamin D levels (>100 ng/mL). Additional labs showed normal levels of phosphorus (6.5 mg/dL), alkaline phosphatase (146.5 U/L), blood urea nitrogen (16.2 mg/dL) and creatinine (0.3 mg/dL). The urine calcium/creatinine ratio was elevated to 1.89 (>0.4). Ultrasonography showed bilateral echogenic renal pyramids suggestive of nephrocalcinosis. On further questioning, the mother reported giving regular vitamin D supplementation obtained through an online store (Arachitol Nano 60,000 IU/5 mL) since birth—administering half a dropper (approximately 0.5 mL) daily for at least 3 months and on and off over the next 3 months. This resulted in a daily intake of at least 6,000 IU of vitamin D for around 3- 6 months. Child was treated with hyperhydration, IV pamidronate, calcitonin, and a single dose of furosemide. Calcium levels normalized over the next 3 days.

Discussion

Vitamin D toxicity has been well reported in literature. The management of hypercalcemia includes intravenous hydration, loop diuretics, calcitonin, and intravenous bisphosphonates. IV bisphosphonates cause prompt normalization of serum calcium levels. Adverse effects of bisphosphonates include allergic reactions, fever, hypocalcemia, or hypophosphatemia. Our child developed hypophosphatemia requiring phosphorus supplementation. While we preferred pamidronate over zoledronic acid due to prior experience, literature suggests zoledronic acid may be easier to administer with lesser side effects.

Conclusion

This report highlights:

1. The need for public and professional awareness regarding the risks of unsupervised vitamin D supplementation.
2. Combined use of calcitonin and bisphosphonates is effective for prompt reduction in calcium levels.

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