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Acquired Craniosynostosis in a Patient with Iatrogenic Vitamin D Intoxication

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Introduction
Craniosynostosis, which refers to premature fusion of cranial sutures, is an uncommon diagnosis in the pediatric patient, occurring with an incidence of approximately 1 in 2,000 individuals. It is most often associated with X-Linked hypophosphatemic rickets. The implications of craniosynostosis, especially with a delayed diagnosis, are severe.

Case Report
MJ is an African American male born at term via cesarean section with an unremarkable immediate postnatal period. He was diagnosed with rickets at the age of 7 months but was not appropriately treated. He presented again at age 9 months with upper respiratory infection and failure to thrive. He had a 1 month hospital stay at that time and was started on appropriate treatments for hypertension, failure to thrive, hypophosphatemia and hypocalcemia, in addition to Vitamin D 4000 IU daily for Vitamin D deficiency. At age 11 months his serum Vitamin D had normalized at 38 ng/ml but by age 14 months he was diagnosed with iatrogenic Vitamin D intoxication with serum Vitamin D greater than 120 ng/ml. His mother had overconcentrated his Vitamin D and was giving excessive supplementation inadvertently. Vitamin D supplementation was discontinued and the level normalized again.

When he presented for his 18 month well child exam it was noted that his head circumference was at the 3rd percentile for his age and growth had stagnated over the past several visits. His sutures were not mobile and a bony prominence was noted at the site of the anterior fontanelle.

Subsequent workup revealed craniosynostosis of the sagittal, bilateral coronal, and squamosal sutures. Cranial vault reconstructive surgery was done at age 28 months. He is currently awaiting further genetic testing.

Discussion
Acquired craniosynostosis is most commonly found in association with X-linked hypophosphatemic rickets. This patient demonstrated the clinical findings of this condition and is currently awaiting further testing to confirm this diagnosis. As Vitamin D plays such an important role in bone growth, it is possible the vitamin D intoxication contributed to the development of craniosynostosis. Review of literature did not reveal any cases of Vitamin D intoxication alone causing craniosynostosis. Vitamin D intoxication in pediatrics is rare, but the exact incidence is not known. The cause is normally inadvertent administration of large doses of Vitamin D.

Conclusion
This case illustrates the importance of serial well child examinations where growth abnormalities can be detected. It also illustrates the importance of patient education on medication administration.

References