



"Neonatal seizures due to hypocalcemia secondary to maternal vitamin D deficiency"



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INTRODUCTION

- Vitamin D is an essential hormone homeostasis for phosphorus and calcium metabolism
- Changes in modern lifestyle and migratory movements have led the resurgence of vitamin D deficiency in our environment.
- The maternal deficiency of vitamin D can produce a severe hypocalcemia in the newborn with neonatal seizures
- We report below 3 infants with neonatal seizures due to hypocalcemia secondary to maternal vitamin D deficiency

	CASE 1	CASE 2	CASE 3
Days of life	7	40	10
Maternal Background	Moroccan, 34 years old Graves-Basedow Disease.	Moroccan, 20 years old	Caucasian.
Obstetric Background	Born at term. 38 WG. 2nd gestation. Eutocic. Birth weight 3820g. Breastfeeding	Born at term. 39 WG. 2nd gestation. Eutocic. Birth weight 3230g. Breastfeeding	Dichorionic twins. Born at term. 36 WG. 2nd gestation. Dystocic delivery. Birth weight 3180g. Breastfeeding and formula
Symptoms and signs	Clonic movements of the 4 extremities. 2-minute episode the day before admission.	Tonic-clonic movements of the 4 extremities with ocular deviation of 10 days of evolution.	Clonic movements of the upper limb few seconds duration.
Diagnosis	<ul style="list-style-type: none"> • Plasma calcium 5.4 mg/dl (ion 0.73 mmol/L). • Phosphorus 7.7 mg/dl. • Magnesium 1.4mg/dl. • 25-OH-vitD 8.3ng/dl. • PTH 29.9pg/ml. <ul style="list-style-type: none"> • normal cranial CT , normal brain and heart ecography. • Negative Screening for infectious disease 	<ul style="list-style-type: none"> • Plasma calcium 5.7 mg/dl • Phosphorus 7.1 mg/dl. • Magnesium 2.2mg/dl. • 25-OH-vitD <4ng/dl. • PTH 221pg/ml. <ul style="list-style-type: none"> • normal cranial CT , normal brain and heart ecography. • Negative Screening for infectious disease 	<ul style="list-style-type: none"> • Plasma calcium 6.3 mg/dl (ion 0.65 mmol/L). • Phosphorus 8.5 mg/dl. • Magnesium 1.5mg/dl. • 25-OH-vitD 17ng/dl. • PTH 76 pg/ml. <ul style="list-style-type: none"> • normal cranial CT , normal brain and heart ecography. • Negative Screening for infectious disease
Treatment	Intravenous calcium gluconate + oral supplements of Ca, Mg and vit D3 (2000 IU).	Intravenous phenobarbital (no response). Intravenous calcium gluconate +oral supplements of Ca and vit D3 (2000 IU).	Intravenous calcium gluconate and magnesium + oral supplements of Ca and vit D3 (1000 IU).
Maternal blood analysis	25-OH-vitD 4.9 ng/dl. PTH 129.0 pg/mL.	25-OH-vitD <4 ng/dl. PTH 120 pg/mL.	25-OH-vitD 10 ng/dl. PTH 96 pg/mL.

CONCLUSIONS

- The vitamin D deficiency in the neonatal period may present with life-threatening situation
- The transient neonatal hypoparathyroidism may act as a confounding factor in the diagnosis of hypocalcemia and aggravate their symptoms.
- Would be required screening of vitamin D levels in pregnant patients with risk factors (low sun exposure and dark skinned) in order to avoid complications for their babies.
- All infants should receive prophylaxis with vitamin D at discharge from hospital, and especially the breastfeeding ones during the winter months.