IMAGEM EM NEUROLOGIA/IMAGE IN NEUROLOGY

A Jittery Newborn with a Treatable Cause

Recém-Nascido com *Jitteriness* de Causa Tratável

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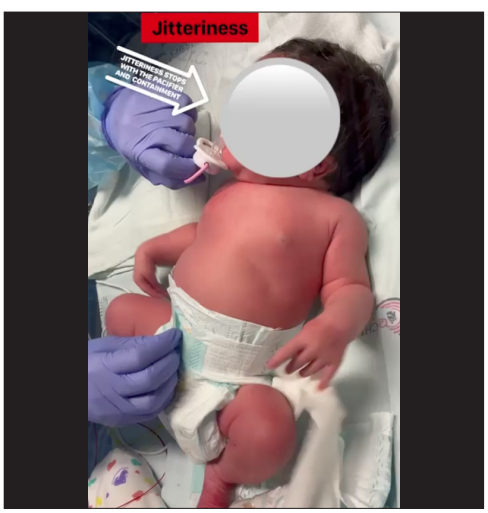
We describe a case of a female newborn, the first child of a non-consanguineous couple. The mother had type 1 diabetes and experienced poor metabolic control during pregnancy. At 33 weeks of gestational age (GA), she was admitted due to preeclampsia, but the remaining pregnancy was uneventful, and she was otherwise healthy. At 36 weeks GA, the baby was born via vaginal spontaneous delivery, weighing 4085 g, and therefore large for gestational age. The cardiotocographic recording was normal throughout labor, the membrane rupture lasted two hours, and the amniotic fluid was clear. The Apgar score was 9 and 10 at the first and fifth minute, respectively. There was no other relevant obstetric, maternal, or family history.

The newborn was asymptomatic until the second hour of life, when cyanosis and respiratory distress were noticed. Pulse oximetry detected hypoxemia (SpO2 85%-88%), with normalization after supplementary oxygen. Glycemic evaluations were normal. She was admitted to the Neonatal Intensive Care Unit and required non-invasive ventilation and oxygen until the seventh hour of life. Echocardiogram was normal. Hemogram and blood gas analysis were normal and septic screening was negative.

On the second day of life, she started exuberant, frequent and rhythmic fine tremor that stopped with containment, ease of stratle, with Moro reflex easily triggered (**Video 1**). Further laboratory investigation revealed hypocalcaemia (total calcium 7.2mg/dL/1.8mmol/L [low: < 8mg/dL/2 mmol/L]; ionized calcium 3.6 mg/dL/0.9 mmoL/L [low: <4.4 mg/dL/<1 mmoL/L]). Cerebral ultrasound was normal. Calcium correction was initiated (calcium gluconate 10% 0.11 mmol/kg [0.5 mL/kg] intravenous) with clinical and analytical resolution after few hours. Follow-up has been uneventful.



Video 1. Newborn with rhythmic fine tremors (jitteriness) that cease with touch. (see the video)

Non-epileptic motor phenomena, such as tremors, jitteriness, and neonatal sleep myoclonus, are common during the neonatal period.[1] Many of these movements are benign, but are frequently misdiagnosed as seizures, leading to extensive and invasive investigation. Jitteriness is a fine tremor described as involuntary, rhythmic oscillatory movements of equal and low amplitude (<3 cm) and high frequency (>6Hz), which are not associated with eye movements, abnormal gaze or hemodynamic modifications.[2] The incidence is variable,

but some studies report that up to 44% of newborns may exhibit jitteriness.[3] Neonatal jitteriness is typically benign; however, it may be associated with underlying conditions such as hypoglycemia, hypocalcemia, sepsis, hypoxic-ischemic encephalopathy, or withdrawal syndrome. In the presence of perinatal complications, symptoms or examination findings suggestive of disease, coarse tremors, or suspected seizures, investigation may be necessary.[3] Exams should be considered based on the clinical suspicion.

The prognosis of physiological jitteriness is generally good, with normal neurodevelopmental outcomes if no perinatal complications are present. However, neonates with perinatal complications, especially those with coarse tremors, have a 30% risk of adverse neurodevelopmental outcomes.[4]

Hypocalcaemia is a known co-morbidity present in infants of diabetic mothers and is a treatable cause of jitteriness to remember. ■

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AF: Direct intellectual contribution, in the design and preparation of the manuscript, writing and final revision.

MN and JM: Direct intellectual contribution, writing and final revision.

All the authors have approved the final version to be published.

AF: Contribuição intelectual direta, no desenho e elaboração do manuscripto, redação e revisão final.

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