Benign sleep myoclonus in neonate: a diagnostic dilemma for neonatologist

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DESCRIPTION

Case

A preterm female neonate of 26 weeks with a birth weight of 540 g was born to G2 mother. The baby was put on a ventilator in view of her severe respiratory distress and respiratory acidosis. On day 6 during the morning rounds, while the baby was sleeping, it was noticed that she had jerky movements of both upper limbs followed by both lower limbs (video 1). The movements lasted for 20 s and were not associated with tachycardia or desaturation. The movements did not stop even after restraint. There was neither any increase in ventilator requirement nor any autonomic instability. Baby was evaluated with necessary investigations for seizures, which revealed a blood sugar of 84 mg/dL, serum calcium of 8.2 mg/dL, serum sodium of 137 meq/dL, potassium of 3.8 meq/dL, packed cell volume of 42%. The head ultrasound was not suggestive of any intraventricular haemorrhage or malformations. The baby did not have any recurrence of these abnormal movements.

DISCUSSION

Benign neonatal sleep myoclonus (BNSM) was first reported by Coulter and Allen in 1982 and the term seizure is a misnomer for this benign entity.[1] BNSM is usually seen in neurologically healthy neonates. Benign sleep myoclonus (as reported in the literature) is known to occur mainly in term or near term neonates whereas our case is unique in which preterm baby had sleep myoclonus. BNSM onset happens mostly in first 2 weeks of life, and the majority resolve by 3 months age and it is seen to occur in all stages of sleep.[2] BNSM usually presents as myoclonic jerks which may be focal, multifocal or generalised, with a frequency of 1 to 15/s, and are not stopped with restraint and hence closely mimic neonatal seizures.[3] The typical characteristics of BNSM:[4]

- Usually seen in non-rapid eye movement sleep (non-REM sleep)
- Absence in REM sleep
- Ceases abruptly when infant wakes
- EEG is usually normal
- There are no neurological abnormalities
- Can be provoked or exacerbated with administration of benzodiazepine
- No neurological sequeale

The differential diagnosis of BNSM:[5 6]

- Neonatal seizure
- Benign familial neonatal seizures
- Benign non-familial neonatal seizures
- Benign idiopathic neonatal seizures
- Benign myoclonus of early infancy
- Early myoclonic encephalopathy
- Hyperplaxia

Video 1 Showing brief erratic myoclonic jerks occurring in both upper and lower limbs during sleepiness in preterm infant. The myoclonus mainly involves flexor group of muscles. Also note the infant is sleeping.

Learning points

- Benign sleep myoclonus is not neonatal seizure and must be differentiated from neonatal seizures as misdiagnosis can lead to detrimental effects on the infant.
- The benign nature of this condition should be explained to parents to allay any anxiety about this condition.
- The neurological outcomes are normal in these babies and manoeuvres which provoke myoclonus must be avoided.

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