

Acute stridor and wheeze as an initial manifestation of hypocalcemia in an infant

Sir,

A 4-month-old male infant who was delivered at term with a normal birth weight and uneventful neonatal period was brought with history of cough and noisy breathing of 1-day duration. The baby had been on cow's milk since birth. On examination, the infant was afebrile, alert and interacting with his mother. The heart rate was 130/min, respiratory rate was 36/min and oxygen saturation was 98% in room air. Stridor was present while crying and the infant had a barking cough and occasional wheeze. Other systems were normal. Investigations revealed normal hemoglobin, total and differential counts and normal c-reactive protein. Chest and soft tissue neck X-ray were normal. The child was treated with nebulized adrenaline followed by salbutamol.

While on treatment, child had an episode of multifocal clonic movements involving all four limbs lasting for 2 minutes. Blood sugar checked at that time was normal. Serum calcium was 7.5 mg/dl. In view of hypocalcemia, the child was treated with 2 ml/kg of 10% calcium gluconate followed by maintenance calcium, following which the stridor disappeared and there were no further seizures. Cranial ultrasound was done following the seizures and was reported as normal. Serum vitamin D3 level was found to be low (4.7 ng/ml). There was no evidence of rickets both clinically and radiologically. The child was treated with 600,000 IU of oral vitamin D and discharged on maintenance doses of calcium gluconate and 800 IU of oral vitamin D daily for 3 months.

Hypocalcemia is common in preterm infants, infants born to gestational diabetic mothers and infants on cow's milk. Hypocalcemia has also been shown to occur in exclusively breast fed babies not exposed to sunlight and in infants whose mothers are deficient in vitamin D.^[1] Symptoms of hypocalcemia in children include lethargy, recurrent respiratory tract infections, focal clonic seizures, jitteriness, carpopedal spasm and rarely stridor due to laryngospasm.

Stridor occurring as a consequence of nutritional rickets is reported in literature.^[2] Hypocalcemic laryngospasm causing stridor and tetany in a child with renal dysplasia has also been described.^[3] A fatal case of biphasic wheezing in an infant attributed to hypocalcemia has been described in literature.^[4] Vitamin D by itself has been shown to have beneficial effects in children who wheeze by up regulating antimicrobial proteins or through multiple immune effects. Higher prenatal vitamin D levels are shown to have a protective role against wheezing in young children in epidemiological studies.^[5] The above observations highlight the fact that vitamin D has a key role to play in the pathogenesis of wheezing/asthma.

The infant reported here was managed as a case of acute laryngotracheobronchitis initially as there was no evidence of rickets and the diagnosis of hypocalcemia was made only after he had convulsions. This case report highlights the importance of measuring serum calcium levels in infants with acute stridor and or wheeze. Management consists of correcting hypocalcemia and determining the cause of hypocalcemia and treating it. Prompt resolution of symptoms on correction of hypocalcemia as had happened in our case has also been reported in literature.^[6]

While treating young infants with acute stridor and or wheeze, it would be prudent to consider hypocalcemia especially when one or several risk factors are present. Treatment with calcium usually reverses the symptoms rapidly. Vitamin D therapy may be of benefit in wheezing children.

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Access this article online

Quick Response Code:



Website:
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DOI:
10.4103/2230-8210.93781

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