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Vitamin D Deficiency in a Breastfed Child – A Case Report

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***Abstract*—** *Vitamin D deficiency in an exclusively breastfed child is increasingly high in prevalence. However it is still not widely reported. Surprisingly, it is still possible for this deficient to occur even in an asymptomatic growing child. Nevertheless, failure to diagnose it earlier, the child can succumb into failure to thrive and developmental delay. Therefore, we would like to share our case report for learning point in primary care assessment for exact detection of features of vitamin D deficiency that almost be missed. This child benefits the prompt detection and treatment of his condition.*

***Keywords*—** *Developmental delay, Vitamin D deficiency.*

I. INTRODUCTION

Vitamin D deficiency in infant is rarely reported even though commonly associated in exclusively breastfed children. Nevertheless, if left untreated, the child can suffers from hypocalcemic seizures, growth failure, lethargy, irritability and a predisposition to respiratory infections (1-3).

Rather than screening all child with blood investigation, adequate history taking with clinical examination to look for early pathognomonic features is really an important approach (1-3). This can be manifested by role of early detection of developmental delay and growth delay by primary care providers. It is part of routine examination to be done when dealing with growing child.

We share a case of failure to thrive (FTT) diagnosed at six months of age associated with atypical gross motor delay detected at health clinic which later gives clue towards possible vitamin D deficiency from clinical assessment.

II. CASE REPORT

We report an infant with failure to thrive (FTT) diagnosed at six months of age associated with atypical gross motor delay detected at our health clinic.

The child started to have poor weight gain since weaning as he did not tolerate semisolid food well. He persistently thrive below two standard deviation. With objective measure to increase the nutrition intake, the child's condition improved however his weight gain remains minimal.

We also realized his physical movement disorder is atypical for isolated gross motor delay in which his weakness is only confined to the proximal muscles mainly over his bilateral shoulders. This is obvious since his age at nine months old when he would like reach an object.

In view of normal thyroid function test, we referred this child for further paediatric assessment in tertiary hospital including possible nutrition deficiency in view of concomitant lymphadenopathy.

The result showed very low level of serum vitamin D of 1.3nmol/l. Subsequent vitamin D supplementation has improved his appetite and his motor development tremendously.

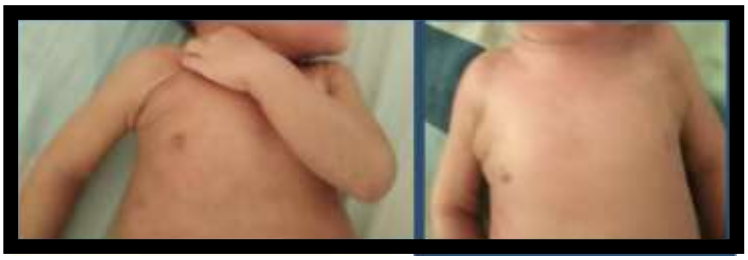

Fig. 1: Shows the atypical presentation of the child's upper limb motor weakness in which there is limited movement of the proximal muscles.

III. DISCUSSION

Studies have shown that milk even of healthy lactating women contains relatively small amount of vitamin D. Nevertheless, for South East Asia country especially Malaysia, we are adequately exposed to sunlight throughout the year and rich with high vitamin D diet, in which supplementation in lactating mother is rarely an issue (1-3). Other nutrients, which can occasionally be deficient in some fully breast fed infants includes riboflavin, iron, vitamins A and vitamin B12 (4).

However, role of adequate weaning for nutrition intake should be emphasized to all parents as a delay or inadequate weaning would put the child at risk of growth failure and nutrient deficiency (1-3), even though the child adequately consumed the mother's breast milk. There is a strong evidence showing that micronutrient deficiency will lead to growth failure of the child in which adequate amount of food intake is really important for the child (5).

Routine weight monitoring with developmental assessment by primary care providers is helpful in identifying possible manifestation of underdiagnosed diseases with alarming features. Severe vitamin D deficiency (<20nmol/l) will cause proximal myopathy as in this child who clinically manifested by atypical isolated motor delay which warrant further assessment at tertiary center (1-3).

This child has indeed benefit a routine simple assessment at primary care that leads to the accurate diagnosis and prompt treatment.

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IV. Conclusion

This case has proven that a focused and proper history taking, a directed and appropriate physical examination with a high index of suspicion, as well as a simple supportive assessment in a primary care setting play an important role in identifying uncommon presentations of underdiagnosed conditions, which led to a timely intervention.

References

[1] S. Balasubramanian, "Vitamin D deficiency in breastfed infants & the need for routine vitamin D supplementation." *Indian Journal of Medical Research*, vol 133, issue 3, pp.250-252, 2011.
[2] D. Daniel, R. B. Bikle, "Vitamin D and Bone and Beyond." *Bone Reports*, issue 9: 120-121, 2018.
[3] H. J. J. Mohamed, A. Rowan., B. Fong, S. L. Loy. "Maternal Serum and Breast Milk Vitamin D Levels: Findings from the *Universiti Sains Malaysia Pregnancy Cohort Study*, 2014.
[4] K. D. Foote, L. D. Marriott. Weaning of Infants. BMJ Journals: Archives of Disease in Childhood. 2003;88(6).
[5] Juan A. Rivera CHTGl-Co, Lynnette Neufeld Armando García-Guerra. The Effect of Micronutrient Deficiencies on Child Growth: A Review of Results from Community-Based Supplementation Trials. The Journal of Nutrition. 2003;133(11):4010-4020

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