

# Vitamin D deficiency Rickets from A Malaysian Urban Household: A Case Report

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## INTRODUCTION:

Rickets is a metabolic bone disease affecting mineralization at the physis secondary to deficiencies of Vitamin D, calcium and phosphorus. The most common type is nutritional rickets and it is emerging in Malaysia. We report a two-year-old presenting with bowlegs as a case example with the purpose to increase awareness about rickets recognition and prevention.

## CASE SUMMARY:

A two-year-old Malay boy presented with bowlegs when he started walking at twelve months. The bowing gradually worsened and was also associated with in-toeing gait. The developmental milestone was according to age. He was on exclusive breastfeeding for twelve months with no added Vitamin D fortified food. He had gluten allergy and eczema. This limited his nutritional options. He was also mostly indoors at the daycare centre.

Clinically, his height and weight was at the 15<sup>th</sup> and 3<sup>rd</sup> centile. He had no dysmorphic features. He had normal dentition. There was symmetrical genu varum and in-toeing gait. The intercondylar distance was 12cm. No limb length discrepancy was noted. His rotational profile was within normal limits for his age; no metatarsus adductus, thigh-foot ankle -30° and hip internal rotation 75°. He had painless bony swelling over the wrists and ankles. Spine and ribs examination were normal.

He had low vitamin D 18 nmol/L (>50nmol/L) and increased alkaline phosphatase (ALP) 1097 U/L (54-369U/L) with normal calcium and phosphate level. Parathyroid hormone was normal at 7.7 pmol/L (1.96-8.49pmol/L). He was diagnosed as rickets and started on oral vitamin D and calcium. After three months, his blood parameters improved with Vitamin D at 55 nmol/L and reducing ALP at 800 U/L. A

repeat radiograph at six months showed healing of the growth plates and improved appearance of the metaphysis ends.



**Figure 1: Lower limb radiographs and clinical photographs at presentation and 6 months after treatment.**

## CONCLUSION:

Early recognition and prompt treatment of nutritional rickets could reverse the clinical presentation. Surgical intervention to correct lower limb alignment is reserved for persistent coronal deformity.

## REFERENCES:

1. Munns CF, et al. Global Consensus Recommendations on Prevention and Management of Nutritional Rickets. The Journal of clinical endocrinology and metabolism. 2016;101(2):394-415.