CASE REPORT
RESPIRATORY DISTRESS: A RARE PRESENTATION OF RICKETS

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Nutritional rickets has multiple presentations like skeletal deformities, tetany, hypocalcemic seizures, recurrent diarrhea, dental abnormalities, developmental delay and floppiness. Here a rare presentation of nutritional rickets is reported in five months old baby who had respiratory distress since two months and signs of respiratory distress resolved after start of vitamin-D supplementation.

Keywords: Nutritional Rickets, Respiratory Distress, Vitamin D.

INTRODUCTION

Nutritional rickets remains a problem in a country like Pakistan with plenty of sunshine.[1] Nutritional calcium deficiency has been reported as an important contributing factor recently in North American infants[2] with normal serum 25-hydroxy vitamin D levels, however vitamin D deficiency remains a major cause of morbidity[3] in children with nutritional rickets. Though termed nutritional, ultraviolet sun rays cause synthesis of vitamin D in the skin.[4] In addition to malnutrition,[5] vegetarian,[6] dark skin and limited sun exposure due to staying indoor or extensive covering of the skin[7] are predisposing factors. Nutritional rickets has multiple clinical presentations. In this case report five months old baby presented with signs of respiratory distress since two months which resolved after start of vitamin D supplementation.

CASE REPORT

In this case report a five months old baby from Afghan refugee camp presented with signs of respiratory distress since two months. Baby was exclusively breast fed and weighed six kilograms. Illness started at three months of age when a diagnosis of bronchopneumonia was made on the basis of fast respiratory rate and oral antibiotics were prescribed. After ten days baby was admitted for intravenous antibiotics due to little improvement on oral medicine. Antibiotics were changed after four days when clinical condition remained the same. After seven days baby was discharged with some improvement. After ten days baby was brought again in respiratory distress and parents complained that baby remained unwell after discharge. This time baby was prescribed anti-tuberculous drugs on empirical basis, again no improvement was found after fourteen days when treatment was discontinued and physician was changed. This time baby was started on third generation oral cephalosporine for seven days but without much improvement. Baby was taken to adult physician who referred the baby to a third child physician when baby was five months old. On clinical examination baby had wide open anterior fontanalle, widened wrist and ricketic rosary. X-ray wrist showed findings of florid rickets in the form of cupping at the lower end of radius and ulna (Figure.1). Serum alkaline phosphatase was markedly raised. Baby was started on vitamin-D therapy. Signs of respiratory distress improved. X-ray wrist two months later showed healing rickets (Figure.2).Baby gained one kilogram weight.

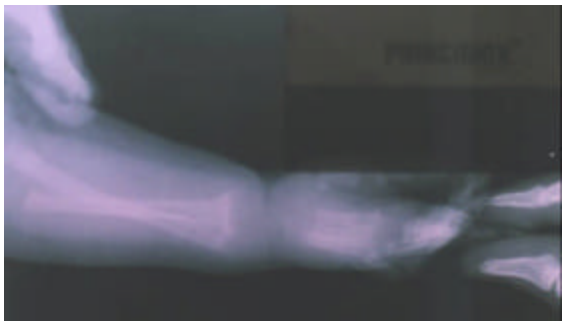

Fig.1: Florid rickets before Vitamin-D treatment in 5 months old child

Fig.2: Healing rickets 2-months after Vitamin D treatment in 7 months old child

DISCUSSION

Nutritional rickets is still common and can be a crippling disease[8].Nutritional rickets is multifactorial condition and multiple risk factors (pigmented skin, inadequate sunlight, decrease calcium intake by the

nursing mother and the baby, inadequate weaning practices[9]) contribute to rickets in children.[8,10] Breast milk is also poor source of vitamin D.[11] Nutritional rickets has well known clinical presentations in the form of skeletal deformities, delayed development, seizures, recurrent diarrhoea. In this case report baby had respiratory distress for two months which was relieved after starting vitamin D.$1,25(OH)_2$ has important biological role in immune system. Activated T- and B-lymphocytes have vitamin D receptors. These cells also have enzymes required for production of $1,25(OH)_2D$[12].In children with vitamin D deficiency risk of bacterial pneumonias is increased.[13]

CONCLUSION

Diagnosis of rickets should be considered in many clinical situations in countries like Pakistan having plenty of sunshine, where multiple risk factors still predispose children to rickets thus increasing morbidity and mortality due to a preventable illness.

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