

ANSWERS TO MEDICAL QUIZ

Rickets

Healed Rickets (Normal)

- A1. Marked swelling of the wrist.
- A2. The following conditions should be considered in the the differentiate diagnosis:
1. Rickets with widening of the wrist
 2. Hand-Foot Syndrome (vaso-occlusive crisis in a patient with sickle cell disease)
 3. Swelling associated with traumatic surgery
 4. Intrinsic bone disorders resembling rickets (Hypophosphatasia, Metaphysial Dysostosis)
- A3. Detailed nutritional history is mandatory in this condition. However, history of trauma and sickle cell disease will be helpful.
- A4. The most likely diagnosis is Vitamin D deficiency Rickets manifesting by enlarged epiphyses and widening of the wrist, because there was no history of trauma, the swelling was not painful and history of sickle cell disease in this child and the family was negative. History of poor nutrition was obvious. The child also had evidence of iron deficiency anaemia giving another clue to the over all nutritional problem.
- A5. Black children are singularly susceptible to rickets, owing to either pigmentation of their skin or inadequate penetration of sunlight.

With plenty of sunshine in this part of the world and relative availability of food one would think that Vitamin D deficiency rickets is extinct and that students will have no chance to see actual cases. Unfortunately this is not true and we still see florid cases of nutritional rickets.

In rickets there is failure of mineralisation of rapidly growing bone or osteoid tissue. Ends of long bones become widened and these changes are seen clinically and on the x-ray. Evidence of rickets is also seen in the shafts of long bones in the form of demineralisation. The osteous changes of rickets appear after several months of Vitamin D deficiency. Ricketic changes however may appear earlier in a breast-fed infant whose mother has osteomalacia.

Craniotables, bossing of forehead, delayed closure of anterior fontanelle "rachitic rosary", (scoliosis, kyphosis, lordosis), "Pigeon breast"; Harrison's Sulcus bowing of the legs are features of florid rickets that appear between end of 1st year and 2nd year of life.

The diagnosis of Vitamin D deficiency rickets can be made mainly on the basis of a history of inadequate intake of vitamin D or poor nutrition in general. Confirmation is done rhoentgenographically and bio-chemically.

REFERENCES

1. Barness LA. Nutritional disorders. In: Behrman RE, Kleigman RM, Nelson WE, et al, eds. Nelson Textbook of Pediatrics. 14th ed. Philadelphia: WB Saunders Co, 1992: 130-46.
2. Norman ME. Metabolic bone disease. In: Behrman RE, Kleigman RM, Nelson WE, et al, eds. Nelson Textbook of Pediatrics. 14th ed. Philadelphia: WB Saunders Co, 1992: 1748-57.