

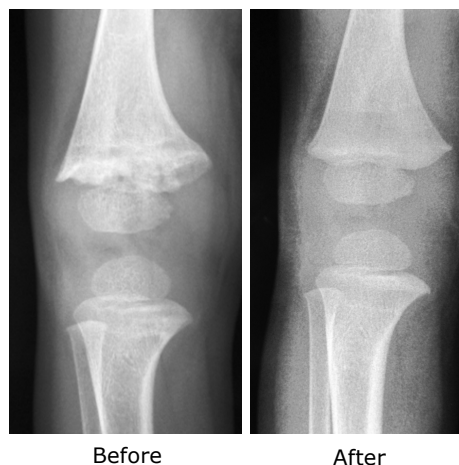
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Answer: Rickets

Bowing of the lower extremities is common and is a frequent cause of orthopaedic referral. It is important to differentiate between physiologic and pathologic bowing to reassure the parents of children with bowlegs. The various causes of bowing include developmental bowing, congenital bowing, tibia vara (Blount disease), neurofibromatosis, osteogenesis imperfecta, rickets, camptomelic dysplasia, and achondroplasia. ¹

The radiological features in this case are consistent with rickets. Rickets is a metabolic bone disease in children caused by deficiency of vitamin D and characterized by failure of mineralisation of growing bone and cartilage. While nutritional deficiency is most common, other causes of vitamin D deficiency must be investigated.

Symptoms of rickets can range from none to bone pain, varying degrees of irritability, and delay in motor development. Clinical examination can reveal widening of the wrists and ankles, genu varum or valgum, prominence of the costochondral junctions (rachitic rosary), delayed closure of fontanelles, craniotabes, frontal bossing and dental problems. The growth of the child may be retarded and there is increased susceptibility to infections. ²



The diagnosis of rickets depends on the presence of the clinical, radiologic and laboratory features. A useful mnemonic to remember the radiological features of rickets seen is shown below: ³

- R:** Reaction of the periosteum (may occur)
- I:** Indistinct cortex
- C:** Coarse trabeculation
- K:** Knees, wrists and ankles affected predominantly
- E:** Epiphyseal plates: widened and irregular
- T:** Tremendous metaphysis: cupping, fraying and splaying
- S:** Spur (metaphyseal)

In the present case the diagnosis was confirmed by typical radiological features and biochemical tests. Typical changes were seen in the ankle and wrists joints as well. The patient was successfully treated with calcium and vitamin D supplementation. Evidence of healing could be seen on repeat radiograph three months (**Panel:** before and after treatment) later.

REFERENCES

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3: van Rijn RR, McHugh K. Rickets Imaging. Available from <http://emedicine.medscape.com/article/412862-overview>. Accessed on 26th November 2011.