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Radiology Quiz

Bone with stripes

Ganesh Singh Dharmshaktu, M.S. (Orthopedics,)

Department of Orthopedics, Government Medical College, Haldwani, Uttarakhand, India

***Corresponding author:**
Ganesh Singh Dharmshaktu, Department of Orthopedics, Ganga Vihar (Near Panchakki Chauraha), Malli Bamori, Haldwani-263139, Uttarakhand, India

drganeshortho@gmail.com

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HISTORY

An adolescent girl complained of bilateral knee pain on sports activities, more on the left side. She had an asthenic built and belonged to low socioeconomic status. She had a history of erratic dietary habits and poor nutritional intake.

- What is the finding?
- What is the differential diagnosis?

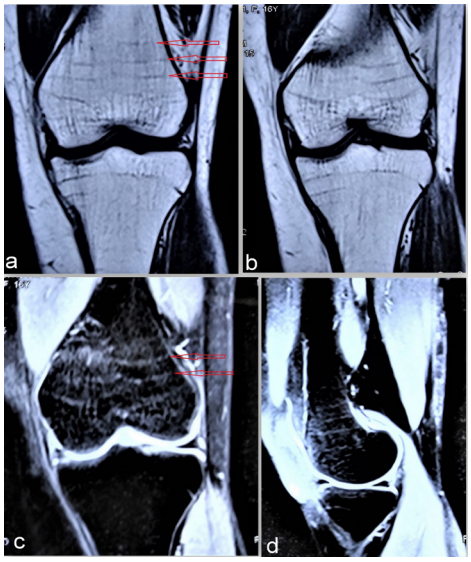

Figure 1: The MRI coronal plane images show multiple parallel transverse dark lines in the distal femur metaphysis (arrows), with few present in upper tibia metaphysis (a, b). In contrast the images (c, d) show these bands in the fat-suppressed sequence in the coronal and sagittal plane, respectively.

FINDING

The MRI of the knee showed subtle transverse lines in the metaphyseal area of the distal femur [Figure 1].

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DIAGNOSIS

Harris lines or Harris–Park lines

DIFFERENTIAL DIAGNOSIS

Bisphosphonate therapy

Osteogenesis imperfecta, on cyclic pamidronate treatment ("zebra stripes sign")

Osteopetrosis

Rickets (on prolonged vitamin D treatment)

Chemotherapy

Chronic anemia, e.g., Thalassemia and sickle cell disease

PEARLS AND DISCUSSION

The transverse radiopaque lines, related to growth arrest, visible on radiographs over the metaphyseal or diaphyseal region of long bones are called Harris lines (HL). These are known as growth arrest lines or growth resumption lines.[1] Temporary growth arrest may result from varied etiologies, and at the top of the list would be disorders like malnutrition, protein and vitamin deficiency.[2] Localized trauma or generalized infections are less common causes. The living bone undergoes constant remodeling and resultant changes may help appear, alter, or disappear these lines.[3] Though readily identified in radiographs, HL may also be appreciated in computerized tomography (CT) or magnetic resonance imaging (MRI).[4] Careful follow-up is required apart from treatment of causative etiology. Proper sun exposure and food rich in protein, calcium and vitamin D are essential to manage most of the cases with unusual skeletal growth. Careful compliance is also crucial to prevent fractures in weaker bones.

AUTHOR'S CONTRIBUTION

The author has critically reviewed and approved the final draft and is responsible for the manuscript's content and similarity index

Declaration of patient consent

The author certifies that he has obtained all appropriate patient consent forms. In the form, the patient's parent has given his consent for the patient's images and other clinical information to be reported in the journal. The parent understands that the patient's name and initials will not be published, and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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