

A 6-year-old boy is brought to the pediatrician with leg pain. Over the last few months, he has complained of pain in both legs that occurs only at night. The pain is worst in his thighs although he occasionally has pain in his calves as well. The episodes last a few hours each and improve with massage and over-the-counter medications. The pain has remained unchanged over the past few months. The patient is able to walk, run, and play at school without any complaints, and his mother has noticed no change in his activity level. He has no fever, chills, or weight loss and there is no history of recent trauma. On examination, the boy has full range of motion of the hips and knees bilaterally. No swelling or tenderness to palpation is noted and he has a normal gait. His mother is very worried because his 9-year-old cousin died of leukemia 6 months earlier. Which of the following is the most appropriate next step in management of this patient?

- ☐ A. Blood cultures
- ☐ B. Bone scan
- ☐ C. Complete blood count
- ☐ D. Observation and reassurance
- ☐ E. Plain radiographs
- ☐ F. Psychiatric evaluation

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- ☐ A. Blood cultures [0%]
- ☐ B. Bone scan [1%]
- ☐ C. Complete blood count [13%]
- ☒ D. **Observation and reassurance** [73%]
- ☐ E. Plain radiographs [11%]
- ☐ F. Psychiatric evaluation [2%]

Proceed to Next Item

Explanation:

User Id: [redacted]

Growing pains are a common musculoskeletal complaint in children, occurring in approximately 10%-30% of children age 2-12 years. The etiology of growing pains is unknown, but they are unrelated to growth, despite their name. The diagnosis of growing pains can be made clinically (Table) in the absence of systemic symptoms and abnormal examination findings. Laboratory studies and radiographs are not necessary.

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|-------------------|--|
| Clinical features | <ul style="list-style-type: none">Occurs primarily at night & resolves by morningAffects lower extremities (eg, thighs, calves), usually bilateralNormal physical examination & activity |

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| Clinical features | <ul style="list-style-type: none"> Occurs primarily at night & resolves by morning Affects lower extremities (eg, thighs, calves), usually bilateral Normal physical examination & activity |
| Treatment | <ul style="list-style-type: none"> Parental education & reassurance Massage, stretching exercises, heat & analgesics |

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Treatment of growing pains consists of parental education and reassurance along with massage, muscle-stretching exercises, and administration of over-the-counter analgesics. Children with growing pains should be followed closely to monitor for pain that increases in frequency or intensity, which may warrant further evaluation.

(Choice A) Blood cultures are indicated in children with osteomyelitis or septic arthritis, which are bone and joint infections that present with fever, localized pain, and decreased range of motion. None of these are present in this patient.

(Choice B) Bone scans are used in the diagnosis of metastatic bone disease or osteomyelitis, both of which typically present with unilateral pain and systemic symptoms such as fever or weight loss. Bone scans are not indicated in children suspected of having growing pains.

(Choice C) A complete blood count can be used to diagnose leukemia, which can be a cause of limb pain in children. Leukemia classically presents with fever, weight loss, pallor, and other systemic symptoms that are not present in this patient.

(Choice E) X-rays can be used to diagnose both benign (eg, **osteoid osteoma**) and malignant (eg, **osteosarcoma**) bone tumors. Although osteoid osteomas frequently present with limb pain that is worse at night and responds to treatment with nonsteroidal anti-inflammatory drugs, they are most common in the second decade of life and the pain is often unilateral. Limp and point tenderness may be present on examination. X-rays are indicated in children with systemic symptoms, unilateral limb pain, limp, limitation of activities, or abnormal physical examination findings. This patient has none of these

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(Choice F) The etiology of growing pains is unknown; although psychogenic illness has been mentioned as a potential cause, it has never been formally studied. Children with growing pains often have a **lower pain threshold** and more depressive symptoms when compared to other children, but psychiatric evaluation is not required for these patients.

Educational objective:

Growing pains are bilateral, lower-extremity pains that occur at night in children age 2-12 years. Children with growing pains have no systemic symptoms, normal activity levels, and normal physical examinations. Treatment consists of observation, parental reassurance, massage, and over-the-counter pain medications.

References:

1. **Growing pains: a study of 30 cases and a review of the literature.**
2. **Decreased pain threshold in children with growing pains.**
3. **Are growing pains a myth?**

Media Exhibit

d osteoma



Media Exhibit

arcoma

