

A 10-year-old white boy is brought to the office by his foster parents for the evaluation of severe pain in his left knee for the last few days. His left knee has been hurting so badly that he is now unable to play with his peers. The pain is continuous and non-radiating. His knee appears swollen, but he denies any history of trauma. His family history is unknown. His vital signs are stable. Physical examination reveals a pale young boy. The left knee is tender, erythematous and swollen. Blood tests reveal:

WBC	12,600mm ³
Hemoglobin	9.3 g/dL
Hematocrit	29%
Platelets	201,000mm ³
ESR	40

X-ray of the knee reveals that the distal femur has a central lytic lesion, onion skinning, and a moth-eaten appearance with some extension into the soft tissue. What is the most likely diagnosis?

- ☐ A. Osteomyelitis
- ☐ B. Ewings sarcoma
- ☐ C. Chondrosarcoma
- ☐ D. Glomus tumor
- ☐ E. Fibrosarcoma

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- ☐ A. Osteomyelitis [4%]
- ☒ B. Ewings sarcoma [89%]
- ☐ C. Chondrosarcoma [5%]
- ☐ D. Glomus tumor [1%]
- ☐ E. Fibrosarcoma [1%]

Proceed to Next Item

Explanation:

User Id: [REDACTED]

Ewing's sarcoma is a highly malignant tumor that is found in the lower extremity more than the upper extremity. The most common sites are the metaphysis and diaphysis of the femur, followed by the tibia and humerus. The tumor is very aggressive and metastasizes early to the lungs and lymph nodes. Patients are typically white males in their first or second decade of life. The clinical presentation includes pain and swelling for weeks or months. Erythema and warmth of the local area are sometimes seen. Patients may initially be diagnosed with osteomyelitis, based on the misleading presentation of intermittent fevers, leukocytosis, anemia, and an increased ESR. Nevertheless, Ewing's sarcoma can be distinctly characterized radiologically with

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(Choice A) Osteomyelitis is usually mistaken in such a scenario since it also presents with fever, malaise, local joint pain, and swelling. X-ray findings in chronic osteomyelitis show a central lytic bone defect with surrounding sclerosis termed as Brodie's abscess.

(Choice C) Chondrosarcoma as a primary tumor is not very common. It occurs in the fifth or sixth decade of life. People with disorders like multiple enchondromas and hemangiomas are at a higher risk than the general population. X-ray typically reveals a fusiform defect with scalloping.

(Choice D) Glomus tumor is a common vascular benign tumor characterized by the triad of severe intermittent pain, tenderness, and sensitivity to touch. The most common site is subungual in 70% of the cases; the other sites are the palm and wrist. These are usually found in the fourth decade, and affect females more than males.

(Choice E) Fibrosarcoma is a malignant spindle cell neoplasm found mostly in patients 30-60 years of age. The clinical presentation is usually a painful mass. The radiological picture is that of an osteolytic lesion whose margins can be well-defined or ragged and moth-eaten.

Educational Objective:

Ewing's sarcoma is often confused with osteomyelitis; however, characteristic x-ray findings can point to the diagnosis.

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