

A 13-year-old male is brought to the physician for evaluation of intermittent left knee pain that arose three months ago. He does not remember any trauma to his knee. The pain worsens after basketball games, but improves some with rest. He has been taking non-steroidal anti-inflammatory medications with some relief. On physical examination, he has edema and tenderness over the proximal tibia at the site of the patellar tendon insertion. Examination of the knee joint is normal and no effusion is present. His knee pain is reproducible by extending the knee against resistance. A lateral radiograph of his knee is shown below.



Which of the following is the most likely cause of this patient's knee pain?

- ☐ A. Prepatellar bursitis
- ☐ B. Traction apophysitis
- ☐ C. Patellar tendonitis
- ☐ D. Tibial osteomyelitis
- ☐ E. Patellofemoral stress syndrome

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Which of the following is the most likely cause of this patient's knee pain?

- ☐ A. Prepatellar bursitis [8%]
- ☒ B. Traction apophysitis [44%]
- ☐ C. Patellar tendonitis [20%]
- ☐ D. Tibial osteomyelitis [4%]

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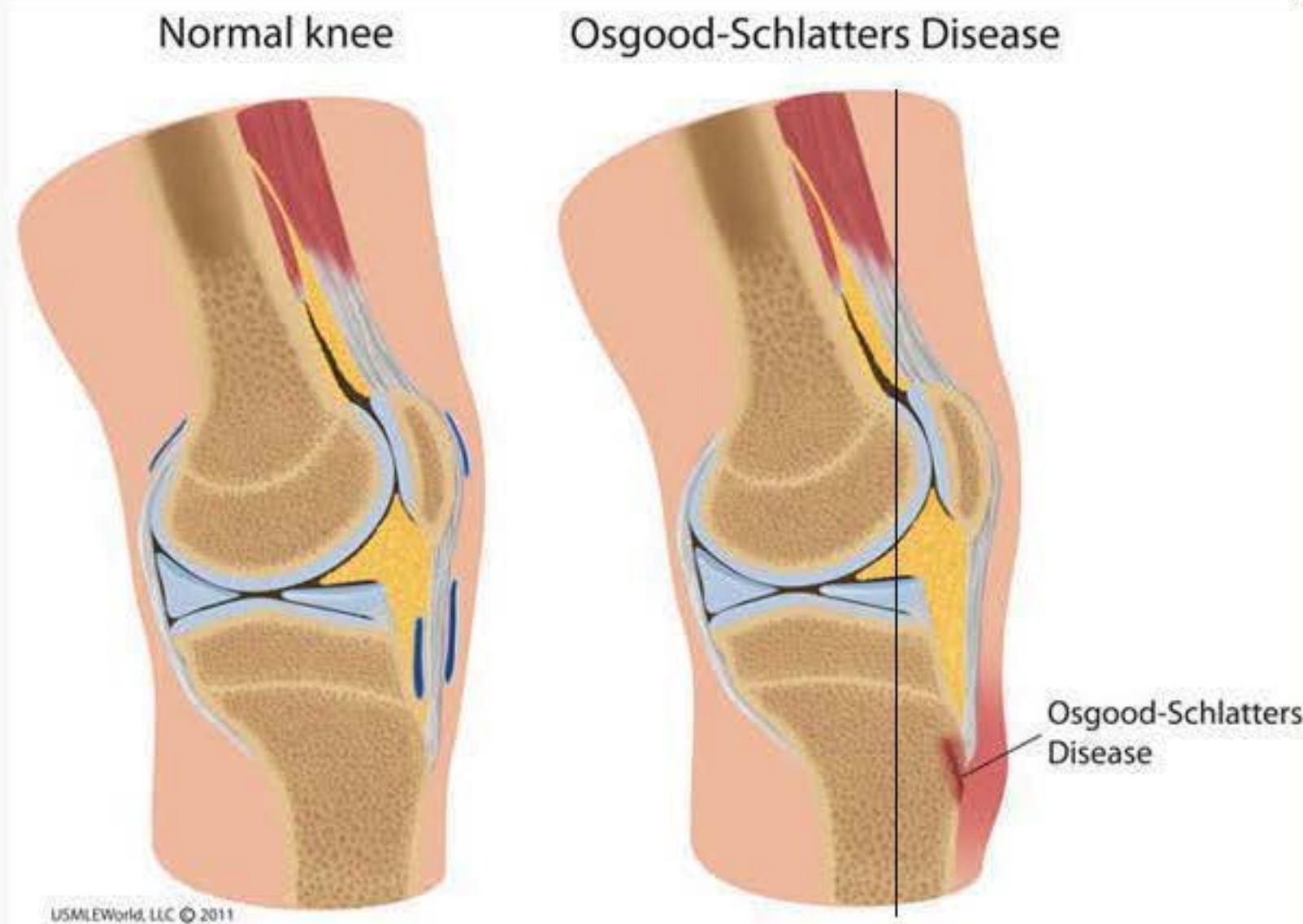
Explanation:

User Id: [REDACTED]



Explanation:

User Id: [REDACTED]



Osgood-Schlatter disease is a common cause of knee pain, particularly in adolescent male athletes. During early adolescence (typically ages 13-14 for affected males, and ages 10-11 for affected females), there are periods of rapid growth in which the quadriceps tendon puts traction on the apophysis of the tibial tubercle where the patellar tendon inserts. This traction apophysitis is worsened by sports that involve repetitive running, jumping, or kneeling, and it improves with rest. Approximately one fourth of affected individuals have bilateral disease. On physical examination, there is edema and tenderness over the tibial tubercle. A firm mass can sometimes be felt due to heterotopic bone formation. Pain can be reproduced by extending the knee against resistance. Radiographic findings are nonspecific and include anterior soft tissue swelling, lifting of tubercle from the shaft, and irregularity or fragmentation of the tubercle. Treatment consists of activity restriction, stretching exercises, and non-steroidal anti-inflammatory medications.

(Choice A) Prepatellar bursitis occurs with chronic irritation of the anterior knee. Symptoms include pain with direct pressure and superficial swelling over the patella.

(Choice C) Patellar tendonitis is an overuse syndrome resulting from repetitive jumping or kicking. Patients present with anterior knee pain after exercise. Unlike



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(Choice A) Prepatellar bursitis occurs with chronic irritation of the anterior knee. Symptoms include pain with direct pressure and superficial swelling over the patella.

(Choice C) Patellar tendonitis is an overuse syndrome resulting from repetitive jumping or kicking. Patients present with anterior knee pain after exercise. Unlike Osgood-Schlatter disease, patients have point tenderness at the inferior pole of the patella.

(Choice D) Tibial osteomyelitis is a bone infection, usually bacterial in origin. Symptoms include pain, swelling, tenderness, and erythema. Patients classically present with refusal to bear weight on the affected extremity. Systemic symptoms may also be present. The pain from osteomyelitis does not remit with rest.

(Choice E) Patellofemoral stress syndrome is an overuse injury commonly seen in runners. Patients present with anterior knee pain that worsens upon descending steps or hills. Pain is localized to the patella and radiographs do not demonstrate separation at the tibial tubercle.

Educational objective:

Osgood-Schlatter disease is a traction apophysitis of the tibial tubercle. Radiographic findings include anterior soft tissue swelling, lifting of tubercle from the shaft, and irregularity or fragmentation of the tubercle.