Diagnostic Challenge

Answer

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The diagnosis is "c." Rupture of the quadriceps tendon is an uncommon and easily missed knee injury.

An anterior cruciate ligament tear is usually associated with a twisting injury, such as in a fall while on snow skis. Physical examination reveals an acute effusion due to hemarthrosis. If the knee is examined soon after the injury an anterior drawer sign or Lachman knee might be elicited. Patellar dislocation is obvious from physical examination and it is almost always in the lateral position. Patients with patellar dislocation are apprehensive with any approach toward the knee and they will not attempt knee flexion. Tibial plateau fractures occur following falls in older patients or in association with motor vehicles striking pedestrians. Physical examination may reveal an effusion, but the diagnosis is made by imaging of the knee.

In the case of a patient with quadriceps tendon rupture, the mechanism of injury is usually a sudden contraction of the quadriceps muscle with the knee slightly flexed, as occurs with a misstep while walking down a staircase.[1] The typical patient is older than 40 years and often has microvascular disease associated with conditions such as diabetes mellitus and chronic renal failure. Quadriceps tendon rupture is also associated with chronic systemic corticosteroid use and knee joint injections. The rupture almost always occurs just proximal to the superior pole of the patella. Acute onset of pain above the patella and an inability to bear weight on the affected leg are the classic symptoms. However, the patient may be able to bear weight when the knee is locked in full extension.

Physical examination may reveal a defect just proximal to the patella and a low-lying patella, but this may be obscured by swelling.[2] The most significant finding, however, is the inability of the patient to extend the knee against gravity. Ultrasonography can confirm the physical findings, although this is not always necessary.

Orthopedic referral for early surgical repair is indicated in suitable candidates with complete tendon disruption. Nonoperative management can be initially considered in patients with partial tears.

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