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**Figure 1.** Gross deformity to knees noted at bedside.



**Figure 2.** Left knee radiograph, lateral projection.



**Figure 3.** Right knee radiograph, lateral projection. Used with permission of Steven Dorsey, MD, Department of Emergency Medicine, Emergency Services Institute, Cleveland Clinic, Cleveland, OH.

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A 68-year-old college professor presented to the emergency department, complaining of the inability to ambulate and gross deformity to both knees after stumbling down a staircase (Figure 1). He felt a distinct popping sensation in both knees as he fell. He had no history of knee injuries and was an avid cyclist. His only significant medical history included atrial fibrillation, and his only medication was a daily aspirin. On examination, there was mild tenderness to palpation of both quadriceps, and the patient could not actively extend his knees. However, the knees could be passively moved through a full range of motion, and distal pulses were intact.

*For the diagnosis and teaching points, see page 207.*

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### DIAGNOSIS:

*Bilateral rupture of quadriceps tendons.* Radiographs of both knees were remarkable for soft tissue defects and calcific densities near the musculotendinous junctions, consistent with quadriceps rupture (Figures 2 and 3). Orthopedic surgery was consulted, and they admitted the patient and performed bilateral open repair later that same day. The remainder of his hospitalization was unremarkable, and he was discharged to acute rehabilitation on postoperative day 3.

Rupture of the quadriceps tendons is rare. It is associated with advanced age, steroid use, and chronic medical conditions, including hyperparathyroidism, renal insufficiency, systemic lupus erythematosus, and diabetes mellitus.<sup>1,2</sup> The usual mechanism for quadriceps rupture is deceleration with the knee semiflexed and the foot planted, as can occur from missing a step while descending a staircase. Bedside diagnosis may be limited because extension can still be intact with partial ruptures. Although partial ruptures can be managed conservatively with immobilization and rehabilitation, complete ruptures require open repair.<sup>3</sup>

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