

Spontaneous bilateral quadriceps tendon rupture in a patient with renal failure

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DESCRIPTION

A 45-year-old man with history of chronic renal failure had sudden onset of severe pain in both his knees following which he was unable to walk and had severe pain in both lower thighs and knee joints. On examination he was pale looking and asthenic. Local examination revealed swelling of bilateral knee joints with restricted extension of knee joints. On palpation small defect was noted in the suprapatellar region, indicating the discontinuity of quadriceps tendon. MRI of bilateral knee joints was done, revealing patella baja (low-lying patella), moderate-joint effusions and full-thickness defect in quadriceps tendons at site of patellar attachment (figures 1 and 2). The patient did not have any other tendon ruptures at the time of presentation to hospital. Due to poor renal function status, the patient was not fit for surgical repair and was immobilised with long leg cast in extension for 8 weeks followed by crutch walker support and advised for follow-up.

Bilateral quadriceps tendon tear is a very rare clinical entity. In 1949 Steiner and Palmer first reported a case of quadriceps tendon tear in a patient with renal failure. Trivial trauma can rupture bilateral quadriceps in patients with chronic renal failure, systemic lupus erythematosus, gout, diabetes, secondary hyperparathyroidism, pseudogout, alkaptonuria, severe osteomalacia and in patients with

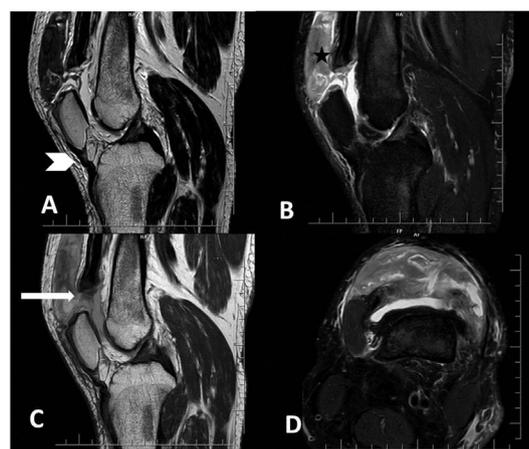


Figure 2 Sagittal T2 (A), sagittal PDFS (B), sagittal T1 (C) and axial PDFS (Proton Density Fat Saturation) (D) MRI of left knee showing full-thickness tear of quadriceps tendon at patellar attachment site (white arrow), wavy patellar tendon (chevron) and moderate suprapatellar hemarthrosis (star).

systemic steroid treatment. The cause of tendon tear has not been well established and various causative factors have been proposed like diminished local circulation, disturbed collagen synthesis, repeated microtrauma and reduced tendon elasticity by calcification.¹ Diagnosis of quadriceps tendon tear is mainly based on history and clinical examination. Characteristic finding on clinical examination is the suprapatellar gap. Radiographs are not sufficient to make an accurate diagnosis. USG (Ultrasound) is the screening investigation, whereas MRI is essential to assess the extent of rupture, site of rupture, associated osteotendinous injury and preoperative planning.¹ Erosions of superior pole of patella, calcification within the tendon and patellar enthesophytes are signs of chronic tendinopathy.² Due to the rare incidence of this injury, early clinical diagnosis is essential, which is a challenging task to the physician; one of the clues is the partial defect in the suprapatellar region felt clinically as a small gap. MRI has high sensitivity and specificity with high positive predictive value in diagnosing quadriceps tendon tear compared with USG.

The rarity of bilateral spontaneous quadriceps tendon tear makes the diagnosis difficult. In view of chronic renal disease, the clinician should have high index of suspicion of this entity and early imaging, especially MRI, is essential. Partial tendon ruptures are managed conservatively with physiotherapy, whereas complete ruptures warrant surgical

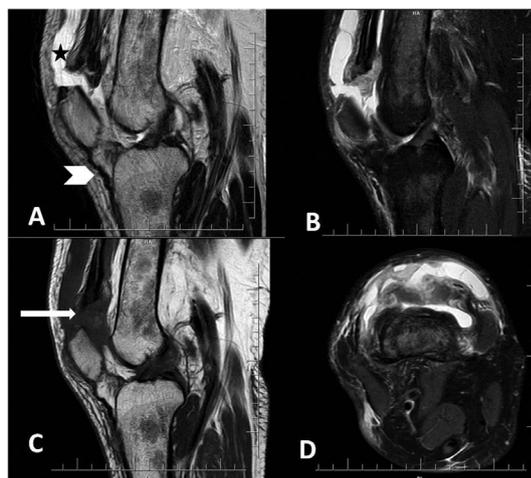


Figure 1 Sagittal T2 (A), sagittal PDFS (B), sagittal T1 (C) and axial PDFS (Proton Density Fat Saturation) (D) MRI of right knee showing full-thickness tear of quadriceps tendon at patellar attachment site (white arrow), wavy patellar tendon (chevron) and moderate suprapatellar joint effusion (star).



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Images in...

intervention. After surgery both knee joints are immobilised usually for 6 weeks followed by gait training with knee braces.³

Learning points

- ▶ Bilateral ruptures are very rare and strongly associated with hyperparathyroidism, renal failure, rheumatoid arthritis, gout, obesity, systemic lupus erythematosus, steroid use and diabetes mellitus.
- ▶ Common site of rupture is 0–2 cm from upper pole of patella.
- ▶ MRI is the key imaging modality for proper management of quadriceps tendon rupture.

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that all questions regarding the accuracy or integrity of the article are investigated and resolved. VK: final approval of the version published.

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