Clinical picture

Spontaneous Achilles tendon rupture in a diabetic neuropathy patient on long-term hemodialysis

A 65-year-old male presented with a slowly-growing mass over the right heel region in previous 6 months. No pain, disability or limited range of motion was reported as compared with usual daily activities. He has history of non-insulin-dependent diabetes mellitus for 20 years. Diabetic neuropathy resulted in progressive decline in his sensory and motor function of lower extremities in recent 6 years. He underwent regular hemodialysis three times per week for end-stage renal disease in past 10 years. On account of tertiary hyperparathyroidism, parathyroidectomy was conducted 3 years ago. Hypercalcemia and elevated intact parathyroid hormone (iPTH) level were resolved after operation. He denied any history of trauma, vigorous exercise or use of corticosteroids or fluoroquinolones. Physical examination revealed a fixed firm mass without tenderness over the Achilles tendon region. The plain radiograph of the right ankle showed rupture of the Achilles tendon with curvilinear calcifications at the margin of the proximal ruptured end of the tendon, and marked vascular calcifications and osteopenia. (Figure 1) The magnetic resonance imaging confirmed rupture of the Achelles tendon (Figure 2).

Achilles tendon rupture in athletes usually occurs at 2–6 cm above the insertion point. Shiota et al.1 reviewed seven spontaneous Achilles tendon ruptures in five patients undergoing long-term hemodialysis. The rupture sites were reported to locate at tendon attachment to the bone. The possible etiology was suggested to be attributed to secondary hyperparathyroidism. The current patient had normal iPTH level after parathyroidectomy and rupture site away from attachment, which might be predisposed by chronic acidosis with connective tissue elastosis.1,2 Calcifications at the rupture site are less common finding of chronic Achilles tendon rupture, which are presumably dystrophic and related to healing. In a series of chronic ruptures, calcifications in the distal end of the proximal stump of the Achilles tendon are identified in three of seven patients.3 In conclusion, regular foot surveillance for diabetic neuropathy patients is crucial for prevention of severe complication. For those patients also receiving long-term hemodialysis, focal mass or bulge at the Achilles tendon, possibly without pain or disability, should raise the concern of spontaneous tendon rupture. Early detection and protection would avoid progressive deterioration and loss of function.

Figure 1. Lateral radiograph of the right ankle shows marked vascular calcification (arrowheads) and curvilinear calcifications (arrow) at the proximal end of ruptured Achilles tendon.
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References


Figure 2. Sagittal T1-weighted MR image of the right ankle reveals Achilles tendon rupture with bulbous appearance of the proximal torn end (arrow).