

## **Achilles Tendon Rupture – Young Adult Female Volleyball Player**

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### ABSTRACT

**CASE HISTORY:** A 25-year-old professional volleyball player, who was playing in a game in Iceland, was transitioning off the net back-pedaling and pivoting as she felt something pop in her right calf. Initially, the athlete denied having any pain but was unable to plantarflex her foot or weight bear. At the time of injury, she was taking Sertraline (HCL 50 mg), Trazodone (50 mg), Wellbutrin XL (Bupropion HCL) 150 mg, Adderall (5mg) and birth control. **PHYSICAL EXAM:** The athlete was evaluated at an emergency room, where a Thompson squeeze test was performed and determined positive for an acute Achilles tendon rupture. The athlete was placed in a soft cast and was scheduled to be treated nonoperatively. **DIFFERENTIAL DIAGNOSES:** Acute Achilles tendon peritendinitis, medial gastrocnemius tear, calf muscle strain or rupture, posterior tibialis stress syndrome, posterior tibialis tendon injury, and peroneal injury. **TESTS & RESULTS:** Approximately one week after her initial diagnosis, she made arrangements to return to the US and to be re-evaluated by an Orthopedic surgeon. During the evaluation, the athlete reported pain over the Achilles tendon. Objectively, another positive Thompson squeeze test was performed. There was swelling over the Achilles tendon and a definite defect on the distal 1/3 of the tendon. There was no pain over the insertion point at the calcaneus or calf pain. An Ultrasound Duplex Doppler scan was performed to confirm the initial diagnosis and assess for deep vein thrombosis (DVT). Gray scale, color and imaging of the deep venous system of the right leg was performed from the level of the common femoral vein down to the level of the popliteal vein. There was no echogenic clot seen within the venous lumen. The veins tested exhibited normal compression and augmentation properties with color flow demonstrated within the tested veins. There was no evidence of DVT in the right leg. Evaluation before surgery showed obvious edema over her Achilles and a definite defect on the distal third of her Achilles. Non-operative and operative options were discussed. Surgery was elected due to nature of her sport. The athlete was made aware of the complications of surgery for this injury and the procedure was scheduled for the next day. **FINAL DIAGNOSIS:** Right Achilles tendon rupture. **DISCUSSION:** The most common mechanism of this injury is a forceful contraction of the calf and when the foot is placed into overpronation. The nature of the athlete's sport made her more susceptible to this type of injury. However, it is relatively unusual for an athlete of her age/sex without previous medical history. Causes of Achilles rupture include tendinopathy, which is associated with overactivity of the sympathetic nervous system (SNS). The combination of those medications could lead to serotonin syndrome, which indicates an overactive SNS. It is possible that the duration and the interaction between this medley of medications may have increased her susceptibility to injury. **OUTCOME OF THE CASE:** Open repair of right Achilles tendon rupture. **RETURN TO ACTIVITY AND FURTHER FOLLOW-UP:** Based on physical therapy notes, there was swelling but the incision was well healed with little tenderness. Slowly, she regained ROM and her strength. The right Achilles was noted to be thicker than the contralateral side. She voluntarily discontinued all medications shortly after the surgery. After several months of extensive rehabilitation and strengthening, she was able to return to the same level of performance.