

# Functional Evaluation of Acute Achilles Tendon Rupture Treatment Using the Dresden Technique: A Case Series

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To evaluate functional outcomes, quality of life, and complications after repair of acute Achilles tendon rupture using a minimally invasive Dresden technique. Achilles rupture is common, and management remains debated; minimally invasive approaches aim to preserve functional outcomes while reducing soft-tissue complications and sural nerve injury risk. Single-center case series (2015–2024) at a tertiary orthopedic institute. Adults with noninsertional acute ruptures ( $\leq 2$  weeks) underwent repair with the Dresden technique, using minor instrument modifications and a standardized rehabilitation protocol. Outcomes included Foot and Ankle Outcome Score (FAOS), Achilles Tendon Total Rupture Score (ATRS), EuroQoL 5-Dimension 5-Level questionnaire (EQ-5D-5L), Patient Reported Outcomes Measurement Information System (PROMIS), heel-rise test, calf circumference, maximum plantarflexion/dorsiflexion, and gravitational equinus angle. Thirty-one patients (mean age  $37.0 \pm 10.55$  years; 64.5% male) completed follow-up. Mean scores: FAOS  $99.03 \pm 1.73$ , ATRS  $98.29 \pm 2.64$ , EQ-5D-5L  $0.98 \pm 0.03$ , PROMIS  $61.0 \pm 0.51$  (range 60.3–61.5). Heel-rise: 24/31 (77.4%) maintained single-leg support. Complications: none for infection, wound dehiscence, rerupture, or deep vein thrombosis; two transient sural nerve-related symptoms resolved by 2 months. Plantarflexion:  $25.42^\circ$  (operated) vs  $25.45^\circ$  (nonoperated), mean difference  $0.03^\circ$  (SD 0.18),  $p > 0.05$ . Dorsiflexion and gravitational equinus: no significant side-to-side differences. Calf circumference difference 1.08 cm ( $p < 0.05$ ), not correlated with functional scores ( $p > 0.05$ ). Very strong, statistically significant intercorrelations were observed among FAOS, ATRS, EQ-5D-5L, and PROMIS. The modified minimally invasive Dresden repair yielded excellent functional outcomes, high quality-of-life scores, and very low complication rates, with no meaningful deficits in ankle range of motion. Calf atrophy was small and not functionally relevant.

**Keywords:** Achilles tendon rupture; Complications; dresden.

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