

Achilles Tendon Open Repair Augmented with Volar Turndown Tendon Flap and Deep Posterior Crural Fasciotomy

Hamza Özer¹, Hakan Selek¹, Gülcan Harput², Ali Öznur³, Gül Baltacı²

¹ Gazi University, School of Medicine, Dep. of Orthopaedics and Traumatology, Ankara, TURKEY, ² Hacettepe University, Academy of Health Sciences, Dep. of Sports Physiotherapy and Rehabilitation, Ankara, TURKEY, ³ Private Güven Hospital, Clinic of Orthopaedics and Traumatology, Ankara, TURKEY

Objectives: The aim of the study was to investigate the outcomes after open repair of Achilles tendon rupture with augmented volar turndown gastrocnemius flap and deep posterior crural fasciotomy.

Methods: Twenty-three (22male/1female) patients with acute Achilles tendon injury were operated. Open end to end repair and augmentation with a volar turndown gastrocnemius flap and fasciotomy of the deep posterior compartment was performed in each patient. Home physiotherapy program was instructed for each patient. Muscle strength, balance and jump performance were assessed.

Results: All patients returned to their preinjury activity level and repairs healed without any major complication. One patient had serous drainage who did not require surgical intervention (4,3%). There was no significant difference between involved and uninvolved leg in terms of concentric and eccentric muscle strength ($p=0.82$ and $p=0.53$, respectively). In Y balance test, there was no significant difference between involved and uninvolved legs in anterior ($p=0.06$), posteromedial ($p=0.97$) and posterolateral ($p=1.00$). In addition, there were no significant differences between leg in vertical jump ($p=0.16$) and one leg hop ($p=0.15$) tests. AOFAS Hindfoot score was 98.6 ± 2.3 (93-100).

Conclusion: Open end to end repair of the Achilles tendon rupture with augmentation and fasciotomy of the deep posterior compartment healed without any major complication. Fasciotomy of the deep posterior compartment decreased the tension at the skin repair site while decompressing the superficial compartment anteriorly. Additionally, the augmented bulky repair construct of the Achilles tendon cambered volarly through the deep posterior compartment and decreased irritation sense during and after tendon healing.

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