Minimal Invasive Reconstruction of Neglected Achilles Tendon Rupture
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Category: Sports

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Introduction/Purpose: Recently minimal invasive reconstruction using semitendinosus tendon autograft was shown to be safe and successful for neglected Achilles tendon ruptures. We hypothesized that allograft could also result in similar result like in the reconstruction of anterior cruciate ligament of the knee joint.

Methods: Between December 2013 and September 2015, 19 consecutive neglected Achilles tendon rupture cases underwent minimally invasive reconstruction using semitendinosus allograft tendon regardless of rupture time and gap. Out of them, 5 patients had flexor hallucis longus tendon transfer additionally. Thirteen were male, and the average age at the time of surgery was 63(30~82). MRI was checked to confirm the diagnosis in all cases. The Achilles tendon total rupture score (ATRS) was measured for clinical outcome at both pre and post surgery. Thompson squeezing test, knee flexion test, and single-heel-rise test were recorded. Isokinetic strength of plantar flexion by peak torque with plantar flexion at speeds of 30 and 120°/sec was measured to check triceps muscle power after surgery.

Results: The mean follow-up period was 13.6(6~26) months. The ATRS was improved from 34(7~72) to 70(48~97) after the surgery(p<0.0001). At the latest visit, all patients showed negative Thompson squeezing test, and in knee flexion test 16 patients showed normal ankle plantar flexion. Thirteen patients could raise their affected heel at the time. In the affected leg at speeds of 30 and 120°/sec, the isokinetic strength was 14.9(6.0~31.9) and 10.0 Nm (2.8~ 19.0) Nm preoperatively, and 37.3(12.1~90) and 19.6(7.8~47) Nm at the latest follow-up. (P=0.012, 0.017) There was no wound problem, rerupture or other complications related to the surgery.

Conclusion: Minimally invasive reconstruction using semitendinosus allograft tendon seems to safe and effective for the treatment of neglected Achilles tendon without sacrificing other healthy tissues. We think that this technique can provide a significant improvement of symptoms and function with fewer complications.

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