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Long-term Follow-up after Tibialis Anterior Tendon Shortening in Combination with Achilles Tendon Lengthening in Spastic Equinus in Cerebral Palsy

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Research highlights:

- Satisfactory long-term (5.8 years) results.
- Active ankle dorsiflexion was possible in all patients.
- All 20 included patients were able to walk without Ankle Foot Orthosis.
- Significant improvement of Movement Analysis Profile dorsiflexion / Gait Profile Score.
- Recurrence rate of 13% and no overcorrection could be shown.

Abstract

Using Tibialis Anterior Shortening (TATS) in combination with Achilles Tendon Lengthening (TAL) to treat spastic equinus in children with cerebral palsy (CP) was described in 2011. Short-term results have indicated a good outcome, especially an improvement of the drop foot in swing phase and the correction of equinus in stance phase. The aim of this study was to analyse the results of the long-term follow-up and to determine the relapse rate of TATS and TAL.

The kinematics of the sagittal, frontal and transversal planes were measured by using instrumented 3D gait analysis at three defined time points and then described using the Gait Profile Score (GPS) and Movement Analysis Profile (MAP). The data was exported into Gaitabase and then the preoperative (T0), short- term (T1) and long-term (T2) follow-up data was statistically compared.

23 patients (mean age at index-surgery = 14.9 years) were included, there was a mean follow-up time of 5.8 years. 3 children (13%) have shown a relapse. The data of 12 children with