

The *t*-score GAS median was 40 before the procedure and 50 to 3 months ($p < 0.001$). Three complications have been reported resolute without treatment.

Conclusion This new technique, simple and minimally invasive, significantly improves the functional consequences of muscle stiffness for severely disabled and frail patients.

Keywords Tenotomy; Muscle contracture; Needle

Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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Management of the spastic wrist: Shortening wrist arthrodesis versus radial extensors tenodesis



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Background Wrist stabilization for patient with spastic hand is an important issue with consequences on hygiene cares and pain but also on functional improvement of the handgrip.

The purpose of this study was the comparison of two wrist stabilization methods.

Methods We included 43 adults, 14 women and 29 men, with a mean age of 50.4 years (14–68 years), with a severely spastic hand who underwent wrist stabilization, by tenodesis arthrodesis in 23 cases and shortening wrist arthrodesis in 20 cases, with an averaged follow-up of 67 months.

The assessment criteria were: correction of wrist and fingers deformities, hygiene and pain improvement, the Fugl Meyer (FM) score and the House grasp score.

Results The results showed a good correction of the wrist deformity, 96° for arthrodesis and 75° for tenodesis ($P = 0.07$), a good correction of fingers deformity with a correction of the palmar digital angle of 101,3° for tenodesis and 93,2° for arthrodesis ($P = 0.11$). If both techniques are so similar in terms of hygiene (VAS = 8.8) and post-operative pain (VAS = 0.3 for tenodesis, 1.5 for arthrodesis, $P = 0.12$), there is however a difference in favour of wrist arthrodesis for the FM score both proximal subscore (1.9 vs 0.5, $P = 0.04$) and distal subscore (1.3 vs 0.3, $P = 0.04$) and the House grasp score (1.4 vs 0.8, $P = 0.19$).

Conclusions The results of arthrodesis did change our wrist stabilization technique because it presents several advantages: no conflict with the extensor tendons, no need to remove hardware when using dorsal plates, a systematic wrist correction with extension of 20°, no loss of correction by tenodesis dropping, a better functional gain for grasping and proximal and distal function.

Keywords Spastic wrist; Arthrodesis; Radial extensor tenodesis
Disclosure of interest The authors have not supplied their declaration of conflict of interest.

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The percutaneous needle tenotomy in the treatment of tendon contractures in brain damaged patients: Pilot study



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Objective Assessment of the feasibility and efficacy of percutaneous needle tenotomy in patients with neuro-orthopedic disorders secondary to impairment of the central nervous system.

Material and method Fourteen patients were followed in the Physical medicine and rehabilitation Department from September 2014 to March 2015. The average age was 58.7 years (29–86 y). The origin of neuro-orthopedic disorder was stroke ($n = 7$), parkinsonism ($n = 2$), head trauma ($n = 2$), cerebral palsy ($n = 1$), Little's disease ($n = 1$) and Alzheimer's disease ($n = 1$). The indication of percutaneous needle tenotomy was selected during a medical-surgical consultation. Twenty-one goals were identified: hygiene ($n = 6$), pain ($n = 4$), sitting ($n = 3$), standing ($n = 4$), transfers ($n = 1$), walking ($n = 2$), grasping ($n = 1$). A total of 31 sites were covered: the finger flexors ($n = 9$), the semitendinosus, biceps femoris and tensor fascia lata ($n = 7$), the Achilles tendon ($n = 5$), the biceps and brachioradialis ($n = 3$), the wrist flexors ($n = 2$), flexor digitorum longus (7 claw toes) and hip adductors ($n = 1$). In 10 patients the treatment involved several sites. Tenotomy was performed with a 18G needle (1,2 × 40 mm), under local or regional anesthesia. A plaster cast was associated with hamstring tenotomy if the objective was functional. A cast was always associated with Achilles tendon, elbow flexor and wrist flexor tenotomy. The Goal Attainment Scale (GAS) was used to assess the effectiveness of treatment.

Results The targets were achieved in all cases ($GAS \geq 0$). No side effects were noted.

Discussion Percutaneous needle tenotomy is a technique which can be used as treatment of some neuro-orthopedic disorders in brain-damaged patients. Percutaneous tenotomy of the Achilles' tendon has already been described by Minkowitz. Our study shows the feasibility and effectiveness of needle tenotomy, sometimes multi-site, performed in this type of patient.

Keywords Brain damage; Tendon contracture; Tenotomy; Needle
Disclosure of interest The authors have not supplied their declaration of conflict of interest.

Further reading

Minkowitz B, Finkelstein BI, Bleicher M, Percutaneous tendo-Achilles lengthening with a large gauge needle: modification of the Ponseti technique for correction of idiopathic clubfoot, *J Foot Ankle Surg* 2004;43(4):263–5.

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Results and complications of transfer of the flexor digitorum superficialis tendons to the flexor digitorum profundus tendons in the spastic patient: A series of 26 patients



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Introduction The hand of the brain damaged patient combines motor deficit, abnormal muscle tone causing spasticity, and sensory defect. The purpose of surgical program could be functional by restoring grasp or non-functional by resolving hygienic problems, and improving cosmetic appearance due to the clenched fist deformity.

The superficialis-to-profundus tendon transfer, first described by Braun and al., allows the opening of non-functional hands.

The aim of our study was to confirm the efficacy of this technique to correct vicious attitudes, to highlight a possible functional gain and finally to identify any complications.

Materials and methods Patients (9 women and 17 men, aged 36–79 years) were evaluated by a team of rehabilitation physicians and orthopedic surgeons. Palliative transfer of the flexor digitorum superficialis tendons to the flexor digitorum profundus tendons has been achieved. Pictures were taken both preoperatively and during