Service de médecine physique et de réadaptation
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spasticity and active range of elbow extension of at least 30
extensor torque and elbow angular position relative to angular velocity. The
involving elbow extension is mainly determined by spasticity or the motor deficit.
The principal aim is to determine whether the velocity of reaching movements
reaching movements.

Objectives

Isokinetic dynamometer

Reaching; Hemiparesis; Spasticity; Function; Kinematics;
Keywords:

Results

will be assessed. Surface electromyography will be recorded for each of the

The kinematics of reaching movements will be evaluated using three-
humerus, ulna and radius insertion. By moving the probe down, the flexor
digitorum superficialis and the flexor digitorum profundus.

Material and method

Tracking sonography was performed in each patient’s healthy side, in the ana-
was used for the ultrasonographic tracking.

Results

Tracking sonography was performed in each patient’s healthy side, in the ana-

Discussion

Goal setting and attainment pertaining to upper and lower
limb function in post-stroke spasticity (PSS) patients: The
Botox® Economic Spasticity Trial (BEST)

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Keywords: Ultrasound tracking; Spasticity; Flexor digitorum superficialis and profundus stroke

Introduction.– Hemiplegia is often associated with a pattern of upper limb spas-
ticity with adduction, internal rotation and flexion of the shoulder, pronation, flexion of the elbow, wrist and fingers flexion making it difficult to identify and to treat flexor digitorum superficialis and profundus with botulinum toxin. The progress of high-frequency ultrasound probes has for many years allowed a precise location of osteo-articular structures.

Objectives.– Our study aimed at assessing the feasibility of tracking flexor digitorum profundus and superficialis by ultrasound system in stroke patients.

Material and method.– Ten post-stroke patients with an Ashworth modified score of at least two on the main upper limb muscles and with the upper limb spontaneously placed with elbow flexion, pronation of the forearm and finger flexion were included. An ultrasound probe with a high frequency of 10 MHz was used for the ultrasonographic tracking.

Tracking sonography was performed in each patient’s healthy side, in the anatomical position and then flexion and pronation of the elbow and finger flexion. Then, each patient underwent an ultrasound tracking in the hemiplegic side of the flexor digitorum superficialis and the flexor digitorum profundus.

Results.– The first set of ultrasounds allowed us to establish key benchmarks. Thus, from an axial section enabling to identify the biceps brachial artery, then the pronator teres. The flexor digitorum superficialis was viewed from humerus, ulna and radius insertion. By moving the probe down, the flexor digitorum profundus could be identified. These two muscles, as well as the accompanying noble structures can be tracked until their distal end.

For patients with moderate spasticity, this technique allows a precise anatomical location of the flexor superficialis and profundus muscles. However, for patients with high spasticity this technique requires an assistant’s help.

Discussion et conclusion.– This identification technique with ultrasound system is simple and allows us to consider highly selective and safe injections of botulinum toxin injections could benefit from this technique.


CO16-005–EN

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