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Reserapport Börje Gabrielssons Minnesfond

Syfte och resmål:

att presentera en sammanfattning av översiktsartikeln: *Integrated nerve and tendon transfer approach to restore functional balance of the hand in tetraplegia* vid FESSH kongressen i Basel, Schweiz, juni 2026.

Det var en stor ära men också ett krävande arbete att skriva den här översiktsartikeln inom ett område som genomgår en så dramatisk utveckling, inte minst vad avser nervtransfereringar. Mottagandet av artikeln blev mycket gott och då känns ju besväret värt.

Övriga reflexioner: FESSH-kongressen var större än någonsin och de många presentationerna blev för korta och diskussionerna ofta avhuggna. Vid flera sessioner saknades sittplatser. Det var ofta trångt och lokalerna var inte optimala.

Trots ovanstående punkter är det ju alltid stimulerande att möta kollegor och utbyta idéer och erfarenheter.

Ett varmt tack till Fonden för det generösa resebidraget

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Integrated nerve and tendon transfer approach to restore functional balance of the hand in tetraplegia

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Abstract

Introduction: The primary goal for many individuals with tetraplegia is restoration of hand and arm function. Recent advancements in surgical techniques for upper extremity reconstruction have significantly progressed motor control and postural stability to restore functional balance of the hand and upper limb. The integration of nerve and tendon transfers has enabled improvements in essential activities of daily living.

Key considerations: It is crucial to ensure that surgical interventions are tailored to the unique functional needs and wishes of each patient, related to self-care, mobility, vocational aspirations and social engagement. Comprehensive evaluation of preoperative hand use for specific tasks is an essential component of surgical planning. Also, patients should be thoroughly informed about both preoperative and postoperative rehabilitation protocols, critical to optimizing functional outcomes. Preoperative preparation may involve strengthening existing key functions, enhancing donor muscle strength, preserving or improving passive joint range of motion, utilizing surface electrical stimulation where indicated and addressing spasticity when necessary. Postoperative rehabilitation should focus on structured, supervised motor retraining to facilitate effective restoration of motor balance and functionality.

Reconstructive options: There are pros and cons for nerve vs. tendon transfers, although these can be combined for optimal results, to reconstruct either different functions or the same function. Tendon transfers can be used secondarily; in the same way, reanimated muscles through nerve transfer can also be transferred at a later stage. Strong consideration should be given to a nerve transfer reconstruction when surgery is performed early. Secondary surgery may be required to further adjust the hand position to optimize balance and maximize function if it is suboptimal after primary surgery.

Keywords

Electrodiagnostics, functional balance, kinetic chain, nerve transfer, patient-tailored treatment goals, tendon transfer, tetraplegia, upper extremity surgery

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Introduction

Restoring hand and arm function remains the primary objective for many individuals with tetraplegia. Over the past five decades, a range of surgical interventions has significantly enhanced independence and mobility within this patient population. Greater involvement from patient communities, rehabilitation experts, and surgeons has ensured that surgical reconstructions are tailored to each patient's upper extremity needs and personal goals in self-care, mobility, work and social activities.

The importance of balance is increasingly recognized in upper limb surgery for patients with tetraplegia. For example, surgical restoration initially

aimed to restore grasp and pinch function, but it soon became clear that the standard of using the brachioradialis (BR) for wrist extension or thumb flexion required an extensor to stabilize the elbow and counteract the strong flexion force of the BR. In patients without triceps function, posterior deltoid-to-triceps

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