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POST-OPERATIVE CLINICAL ASSESSMENT OF THE DONOR SIDE FOLLOWING THE CONTRALATERAL C7 NEUROTIZATION FOR THE TREATMENT OF INJURIES OF THE BRACHIAL PLEXUS

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OBJECTIVES: To detect the likelihood of significant neurological impairment related to the donor upper limb.

METHODS: Between February 1997 and December 2003, nineteen patients were operated on. All patients suffered from a complete injury to the brachial plexus with at least three nerve root avulsions from the spinal cord. The neurotization using the posterior division of the contralateral C7 nerve root was performed in all cases. Ten adults along with three children underwent clinical evaluation, including the monofilament test, two-point discrimination test, grip strength, thumb-finger pinch strength test and motor function assessment of the donor limb for the adults, as well as the wrinkle test associated with an inspection of the motor function of the healthy superior member for the children. The post-operative period varied between 1 year and 6 years and 9 months among the patients.



RESULTS: None of the cases exhibited any motor alteration.

A decrease in the fine sensitivity affecting the median nerve area was detected in seven adults, interpreted as the blue color in the monofilament test.

One child showed a subtle reduction of the skin wrinkles in the thumb, index and ring finger in the wrinkle test.

Average results within the normal range were found in the grip strength test and in the thumb-finger pinch strength test.

CONCLUSIONS: According to our clinical evaluation, the technique using the posterior division of the contralateral C7 nerve root proved to be a safe procedure, leaving no significant neurological alteration on the donor side.