Dokumenttyp: journal article

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Titel des Beitrags:
[Return of sensitivity after digital nerve reconstruction in children: how does age affect outcome?]

Abstract:
The regenerative capacity after nerve reconstruction in children is believed to be superior compared to that in adults. However, the available data on this topic are limited. The aim of this work is to improve the age-dependent assessment of the prognosis after surgical treatment of peripheral nerve injuries of the hand. 44 of 147 children with complete transections of proper and common digital nerves who were treated from 2000 to 2009 and who were currently 6 years or older, could be included for follow-up (mean time, 7.5 years). In total there were 60 nerve injuries, of which 56 were directly coaptated, 4 needed grafting. Sensitivity of the fingertips was assessed using the 2-point discrimination (2PD) test and the Semmes-Weinstein monofilament test. We also recorded hypersensitivity, sensitivity to cold, and paresthesia. To account for inter-individual differences in normal 2PD, the difference of the 2PD to the uninjured contralateral side was calculated as delta-2PD. The age at the time of the injury, divided into groups of 0-5, 6-10 and 11-15 years was correlated with the clinical outcome (2PD, monofilament test). Taking into account the results classified by age presented by Lohmeyer et al. and Mailänder et al., we assessed the correlation between age at injury (0-85 years) and clinical outcome. After 52 of the 56 direct nerve coaptations (93%) normal sensitivity was found with a 2PD<6 mm, 4 times the 2PD was 6 mm.
Following nerve grafting a static 2PD of 6-7 mm was measured. Disturbing paresthesia, sensitivity to cold or hypersensitivity were not reported by any patient. The 2PD of the fingers of the opposite uninjured side showed great inter-individual differences. Patient's age and 2PD significantly correlated with significantly poorer results already in the second decade of life. In relation to adults, children have an excellent prognosis after nerve reconstruction. The high inter-individual differences in regular sensitivity, depending on age, co-morbidities, etc., suggest putting the results of the injured and uninjured sides into relation. Estimation of the \( \Delta 2PD \) may solve this problem.