

Sensory recovery and Meissner corpuscle number after toe-to-hand transplantation

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摘要

Abstract

This study investigated the possible relationship between sensory recovery and receptor number after toe-to-hand transplantation. Moving two-point discrimination was measured after a course of sensory re-education. Meissner corpuscle number was then quantified by light microscopic examination of multiple sections of glabrous skin obtained at pulp reduction and from site-matched normal toe and fingertip skin. Meissner corpuscle number per millimeter was 0.94 in normal toe skin ($n = 4$), and 0.37 after toe-to-hand transplantation ($n = 34$). A significant correlation existed between moving two-point discrimination and Meissner corpuscle number ($r = -0.62$; $p < 0.001$). No significant relationship was found between moving two-point discrimination and patient age or interval from injury to reconstruction. The results suggest that despite sensory re-education, there may be a level of receptor reinnervation below which good sensory recovery may not be obtained