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基于体素的形态学测量分析脑卒中后残障手的机制 [点此下载全文](#)

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摘要:

摘要目的: 采用基于体素的形态学测量 (voxel-based morphometry, VBM), 分析脑卒中后全脑内华勒变性的状态, 揭示残障手的发生机制。方法: 23例脑卒中后右侧偏瘫患者分为两组: 残障手组11例, 非残障手组12例。12例健康人进入健康对照组。采用3.0T核磁共振仪对所有受试者进行弥散张量成像扫描, 利用SPM软件进行VBM分析, 用双样本t检验对平滑后的参数图分别进行两组间比较。提取出残障手组和非残障手组之间FA图存在显著差异的脑区, 把存在差异的脑区分别应用到所有受试者的FA图上, 然后计算每位受试者对应脑区的平均FA值。MD、AD、RD参数图分析与此一致。结果: 与非残障手组相比, 残障手组病变同侧的脑干、基底核和丘脑、中央前回、额内侧回、辅助运动区、颞上回、顶叶、枕叶和病变对侧的中央后回FA值显著减小; 病变同侧基底核和丘脑的MD、AD值显著增加; 病变同侧的基底核和丘脑、脑干的RD值显著增加。残障手组FA较小的脑区 (或MD、AD、RD较大的脑区) 明显比非残障手组的相应脑区范围广。结论: 病变同侧脑干、基底核和丘脑、中央前回、额内侧回、辅助运动区、颞上回、顶叶、枕叶和对侧中央后回华勒变性在残障手形成中起重要作用。

关键词: [脑卒中](#) [残障手](#) [弥散张量成像](#) [基于体素的形态学测量](#)

The study of mechanism on the completely paralyzed hands of chronic stroke patients by voxel-based morphometry [Download Fulltext](#)

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Abstract:

Abstract Objective: In order to explore Wallerian degeneration in the whole brain and reveal the mechanism on the completely paralyzed hands of chronic stroke patients, we perform this study using voxel-based morphometry (VBM). **Method:** Twenty-three chronic stroke patients were divided into two groups: the CPH group (completely paralyzed hands, 11 patients) and the PPH group (partially paralyzed hands, 12 patients). Twelve healthy people were included in the HC group (healthy control). All the subjects underwent diffusion tensor imaging by 3.0T MRI. The VBM analysis was performed by the software SPM. The regions with significant differences of FA map were made as binary masks, which were applied to all participants respectively. Then, individual ROI value of each region was obtained by averaging FA value of all voxels within each mask. The procedure of processing MD, AD and RD was the same as FA. **Result:** Compared with the PPH group, it was found that in the CPH group there were significant decreases of the FA in the ipsilateral brainstem, sub-lobar, precentral gyrus, medial frontal gyrus (MFG), supplementary motor area (SMA), superior temporal gyrus, parietal lobe and occipital lobe, and the contralateral postcentral gyrus. There were significant increases of the MD and AD in the ipsilateral sub-lobar. In addition, there were significant increases of the RD in the ipsilateral sub-lobar and brainstem. Compared with the HC group, the range of the regions with significant differences of DTI parameters in the CPH group were significantly wider than in the PPH group. **Conclusion:** The Wallerian degeneration of the ipsilateral brainstem, sub-lobar, precentral gyrus, MFG, SMA, superior temporal gyrus, parietal lobe, occipital lobe and the contralateral postcentral gyrus played an important role in the completely paralyzed hands after stroke.

Keywords: [stroke](#) [completely paralyzed hands](#) [diffusion tensor imaging](#) [voxel-based morphometry](#)

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