[1]荣晶晶,李七渝,谭立文,等.基于可视人的帕金森病手术靶点核团定位初步研究[J].第三军医大学学报,2012,34(06):500-503.

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基于可视人的帕金森病手术靶点核团定位初步研究(PDF)

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Title: A preliminary study on operation target localization of Parkinson’s disease based on Chinese visible human

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摘要: 目的　利用中国首例女性可视人（Chinese visible human Ⅱ，CVH2）头部连续断层图像数据集，为帕金森病深部脑电刺激术前的底丘脑核定位提供参考。　方法　选取CVH2头部连续断层彩色图像并建立大脑标准空间坐标系，通过颅内常用定位标志-前后连合将21例健康成年人头部横断位和冠状位3.0T核磁共振成像T2序列图像配准到CVH2大脑标准空间中，利用与底丘脑核毗邻的红核中心坐标来检验配准精度以及该定位方法的可行性。　结果　使用该方法定位21例核磁共振成像图像中左右红核的X、Y、Z坐标平均误差（及标准差）为：X方向上为0.33 mm（0.21）、0.40 mm（0.25），Y方向上为0.52 mm（0.39）、0.44 mm（0.36），Z方向上为0.64 mm（0.43）、0.64 mm（0.41）。经配准后两者红核中心的X、Y、Z坐标值均无显著性差异（*P*>0.05）。　结论　利用CVH2头部连续断层图像数据集，经与核磁共振成像图像进行空间配准后对定位与底丘脑核毗邻的红核中心具有较高精度，能够为帕金森病深部脑电刺激术前的底丘脑核定位提供参考。

Abstract: Objective　To develop and validate a new approach for locating operation target of Parkinson’s disease (subthalamic nucleus, STN) based on the data set of Chinese visible human Ⅱ (CVH2).　Methods　Continuous transverse-section images of CVH2 head were chosen and a CVH2 stereotactic space was established. Transverse and coronal T2-weighted magnetic resonance images (MRI) of the brain (3.0 T) were obtained from 21 healthy adults. Then the anterior commissures (AC) and posterior commissures (PC) were used as intracranial localization markers to register all the MRI sequences into CVH2 stereotactic space. Accuracy of the registration was tested by comparing the centers of bilateral red nuclei (RN) in the CVH2 with those in the MRI.　Results　After registration, the mean deviations were 0.33 and 0.40 mm in X axis, 0.52 and 0.44 mm in Y axis, and 0.64 and 0.64 mm in Z axis with standard deviations of 0.21 and 0.25 mm, 0.39 and 0.36 mm, and 0.43 and 0.41 mm, respectively. There was no significant difference of RN coordinates between the registered MRI and CVH2 (*P*>0.05).　Conclusion　The space registration method based on CVH2 provides an accurate means to locate RN which is adjacent to STN, and can be used for indirectly locating STN before deep brain stimulation for Parkinson’s disease treatment.

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