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面神经损伤致周围性面瘫患者的背侧丘脑¹H-MRS的

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Title: ¹H-MRS in dorsal thalamus in patients with peripheral facial paralysis resulting from facial nerve injury

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关键词: 面神经麻痹; 丘脑; 磁共振波谱学

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摘要:

目的 用氢质子磁共振波谱成像(¹H-magnetic resonance spectroscopy, ¹H-MRS)探讨桥小脑角区听神经瘤切除术后周围性面瘫患者背侧丘脑代谢的改变。
方法 对24例桥小脑角区听神经瘤切除术后周围性面瘫患者(将其分为面神经损伤手术侧组及非手术侧组)和24例健康志愿者(对照组)行背侧丘脑的二维点分辨波谱序列(point-resolved surface coil spectroscopy, PRESS)扫描,获得N-乙酰天门冬氨酸(N-acetyl aspartate, NAA)、胆碱复合物(Choline, Cho)和肌酸复合物(Creatine, Cr)的峰下面积值及NAA/Cr、Cho/Cr值。先将对照组左、右侧的NAA、Cho、NAA/Cr、Cho/Cr进行比较,然后将面神经损伤手术侧组、非手术侧组的NAA、Cho、NAA/Cr、Cho/Cr分别与对照组进行比较,并将有统计学差异的指标与面瘫时间长短行相关分析。结果 对照组左、右侧间及面神经损伤非手术侧组与对照组间的NAA、Cho、NAA/Cr、Cho/Cr差异均无统计学意义($P>0.05$),面神经损伤手术侧组在背侧丘脑外后份及内前份的NAA/Cr较对照组高($t=3.338, P<0.05$; $t=2.944, P<0.05$),但其与术后面瘫时间无显著性相关($P>0.05$)。结论 桥小脑角区听神经瘤切除术后致周围性面瘫患者手术侧背侧丘脑的神经元功能增强,这种改变可能与非面瘫侧面部本体感觉传入冲动代偿性增强有关。

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Abstract: **Objective** To investigate the metabolic alteration in the dorsal thalamus of the peripheral facial paralysis patients resulting from resection of acoustic neuroma in cerebellopontine angle with ^1H -magnetic resonance spectroscopy (^1H -MRS). **Methods** ^1H -MRS in the thalamus was performed by point-resolved surface coil spectroscopy (PRESS) sequence in 24 patients with peripheral facial paralysis and 24 healthy controls (control group) in our department from January 2013 to February 2014. These patients were divided into 2 groups, facial nerve injury operation group and non-operation side group. Point-resolved surface coil spectroscopy (PRESS) was used to compute peak area of each metabolite, including N-acetyl aspartate (NAA), choline (Cho), creatine (Cr), and their ratios to Cr. First, the NAA, Cho, NAA/Cr, Cho/Cr between the left side and the right side of control group was compared. Then, NAA, Cho, NAA/Cr, Cho/Cr between the operation side, non-operation side of facial nerve injury group and control group was compared respectively. Last, the correlation between the index of statistical difference and the duration of peripheral facial paralysis was evaluated. **Results** No statistical difference was observed in the level of NAA, Cho, NAA/Cr, and Cho/Cr between the left side and the right side of control group ($P>0.05$), and between the non-operation side of facial nerve injury group and control group ($P>0.05$). In lateral posterior part (LP) ($t=3.338$, $P<0.05$) and medial anterior part (MA) ($t=2.944$, $P<0.05$) of the thalamus, compared with the controls, the operation side of facial nerve injury group showed significantly increased NAA/Cr. But correlation analysis displayed that there was no correlation between the index of statistical difference and the duration of peripheral facial paralysis. **Conclusion** Patients with peripheral facial paralysis resulting from resection of acoustic neuroma in cerebellopontine angle have abnormal metabolic changes in the thalamus, which may suggest there is a compensatory enhancement of proprioception afferent in facial non-paralysis side.

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李宗芳, 张振光, 蒋元明, 等. 面神经损伤致周围性面瘫患者的背侧丘脑 ^1H -MRS的研究[J]. 第三军医大学学报, 2014, 36(17):1842-1846.

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