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# IDEAL与3D FSE-Cube序列正常臂丛节后神经成像对
到：

Title: Comparison of IDEAL and 3D FSE-Cube sequences for normal postganglionic brachial plexus

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摘要: 目的  比较IDEAL序列及3D FSE-Cube序列臂丛节后神经成像图像质量。  方法  利用3.0T磁共振对30名志愿者采用IDEAL序列及3D FSE-Cube序列进行臂丛节后神经成像，每名志愿者在进行3D FSE-Cube序列扫描时均进行两次扫描，第2次使用了自制匀场辅助装置。将所得图像进行MIP、CPR等后处理，计算两种序列臂丛神经各水平显示率，进行神经成像质量评分，测量神经、肌肉、背景噪声信号,并计算神经信噪比（SNR）及对比噪声比(CNR)。  结果  使用辅助装置前3D FSE-Cube序列臂丛神经神经节、锁骨上区神经、锁骨下区神经显示率分别为73.33%、56.67%、40.00%，使用辅助装置后为100.00%、97.67%、93.33%，两组间差异有统计学意义（$P<0.05$）；IDEAL与3D FSE-Cube序列神经节显示率分别为96.67%、100.00%，锁骨上区神经显示率分别为86.67%、96.67%，差异均无统计学意义（$P>0.05$），锁骨下区神经显示率分别为70.00%及93.33%，3D FSE-Cube序列显著高于IDEAL序列（$P<0.05$）；两序列神经节水平成像质量无显著差异（$P>0.05$），斜角肌水平、胸锁关节水平、腋动脉水平3D FSE-Cube序列神经成像质量优于IDEAL序列（$P<0.05$）；IDEAL序列神经节水平神经信号高于3D FSE-Cube序列（$P<0.05$），斜角肌水平、胸锁关节水平、腋动脉水平两组间差异无统计学意义（$P>0.05$）；IDEAL序列信噪比及对比噪声比均高于3D FSE-Cube序列（$P<0.01$）。  结论  IDEAL序列和3D FSE-Cube序列均能清晰的显示节后臂丛神经，3D FSE-Cube序列结合使用匀场辅助装置具有更高的神经成像质量。

Abstract: Objective    To compare the sequences of iterative decomposition of water and

fat with echo asymmetric and least-squares estimation (IDEAL) and 3D FSE-Cube imaging of brachial plexus.　　Methods　　Brachial plexus of 30 health volunteers were imaged on 3.0T MR system with sequences of 3D FSE-Cube and IDEAL respectively. All of the volunteers underwent the same MR scanning for 2 times with 3D FSE-Cube sequence with the assistive device was used in the second time. Images were post-processed with MIP and CPR, and then the display rate was calculated, and image quality was assessed, signal noise ratio (SNR) and contrast-to-noise ratio (CNR) were calculated.　　Results　　The display rates of the ganglion, supra clavicular nerve, and infra clavicular nerve on 3D FSE-Cube sequence were 73.33%, 56.67% and 40.00% respectively, while the rates were 100.00%, 97.67% and 93.33% respectively after use of the assistive device, with statistically difference between them ($P<0.05$). The display rate of ganglion were 96.67% and 100.00% on IDEAL and 3D FSE-Cube respectively, and that of supra clavicular nerve was 86.67% and 96.67%, respectively, but there was no significantly difference in both of them ($P>0.05$). The infra clavicular nerve was shown better on 3D FSE-Cube than IDEAL (93.33% $vs$ 70.00%, $P<0.05$）. In levels of ganglion, the imaging quality on IDEAL and 3D FSE-Cube had no significant difference（$P>0.05$）. In the levels of interscalene area, costoclavicular space, and axillary, the quality of 3D FSE-Cube was better than IDEAL ($P<0.05$). In the level of ganglion, the signals of IDEAL were higher than those of 3D FSE-Cube ($P<0.05$). There was no significant difference in other level of brachial plexus between the 2 sequences ($P>0.05$). SNR and CNR were both higher in IDEAL than in 3D FSE-Cube ($P<0.01$).　　Conclusion　　The sequences of IDEAL and 3D FSE-Cube both have the capacity of clearly displaying postganglionic brachial plexus, But the imaging quality of 3D FSE-Cube is better when combined with assistive device.

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