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三维双回波稳态序列观察正常腕关节软骨

Three dimensional dual-echo steady state sequence in observation of normal wrist joint cartilage

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中文摘要：

目的 探讨3.0T MR三维双回波稳态（3D-DESS）序列在正常腕关节软骨成像中的价值。方法 对12名健康志愿者采用3D-DESS、常规T1W自旋回波（SE-T1W）序列、T2W脂肪抑制快速自旋回波（FS-FSE-T2W）序列、质子加权脂肪抑制快速自旋回波（FS-FSE-PDW）序列行腕关节扫描。测量并计算各序列上腕关节三角纤维软骨复合体（TFCC）、腕骨间软骨及腕骨骨髓SNR及CNR，比较3D-DESS与常规SE序列图像SNR、CNR的差异。结果 3D-DESS图像上TFCC、腕骨间软骨SNR均高于SE-T1W、FS-FSE-T2W、FS-FSE-PDW序列（P均<0.05），而3D-DESS上骨髓SNR与FS-FSE-T2W、FS-FSE-PDW序列差异无统计学意义（P均>0.05）。3D-DESS显示腕骨间软骨/骨髓CNR明显高于SE-T1W、FS-FSE-T2W、FS-FSE-PDW序列（P均<0.05），3D-DESS图像TFCC/骨髓CNR与FS-FSE-PDW序列差异无统计学意义（P>0.05）。结论 与常规SE序列相比，3D-DESS序列能更为清晰地显示腕关节软骨，对诊断腕关节软骨病变具有潜在价值。

英文摘要：

Objective To explore the value of 3.0T MR three dimensional dual-echo steady state (3D-DESS) sequence for evaluation of the wrist joint cartilage. **Methods** Totally 12 healthy volunteers underwent wrist MR scans, including SE-T1W, FS-FSE-T2W, FS-FSE-PDW and 3D-DESS sequence. SNR and CNR of triangular fibro cartilage complex (TFCC), intercarpal cartilage and carpal bones marrow in each sequence were measured and calculated, and the difference of SNR and CNR between 3D-DESS sequence and conventional SE sequence were compared. **Results** SNR of TFCC and intercarpal cartilage on 3D-DESS sequence images were higher than that on SE-T1W, FS-FSE-T2W and FS-FSE-PDW (all P<0.05), while SNR of carpal bones marrow between 3D-DESS and FS-FSE-PDW, FS-FSE-T2W were not statistically different (all P>0.05). CNR between intercarpal cartilage and carpal bones marrow on 3D-DESS sequence images was significantly higher than that on SE-T1W, FS-FSE-T2W and FS-FSE-PDW (all P<0.05), while CNR between TFCC and the carpal bones marrow of 3D-DESS were not statistically different compared with FS-FSE-PDW (P>0.05). **Conclusion** Compared with conventional SE sequence, 3D-DESS sequence can display wrist joint cartilage more clearly, having potential value for diagnosis of changes of wrist joint cartilage.

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