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100 kV管电压结合电流自动调节技术肺静脉成像的临床应用

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Clinical Application of Pulmonary Vein Imaging Using Tube Voltage of 100 kV with Current Automatic Regulation Technology

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摘要 目的 探讨100kV管电压结合自动毫安调节技术行低剂量CT肺静脉成像的可行性。方法将患者分为100kV组（26例）和120kV组（43例），分别采用100kV和120kV管电压结合自动毫安调节技术肺静脉CT扫描，定量和定性评价两组图像的质量和辐射剂量。结果100kV组的有效剂量较120kV组降低24%，差异具有统计学意义(P＜0.01)。图像质量量化评价显示100kV组与120kV组两组信噪比、对比噪声比差异无统计学意义(P＞0.05)；目测评分为100kV组5分13例、4分11例、3分2例；120kV组为5分31例、4分8例、3分4例，差异无统计学意义(P＞0.05)。100kV组右下肺静脉平均CT值较120kV组升高48.56HU(P＜0.05)。结论100kV与120kV结合自动毫安调节技术，肺静脉成像在能够保证图像质量的同时，降低辐射剂量。

关键词： X线计算机 体层摄影术 双源CT 肺静脉 低剂量

Abstract: ObjectiveTo assess the feasibility of performing enhanced pulmonary vein computed tomography (CT) with low radiation dose using tube voltage of 100 kV combined with current automatic regulation technology. Methodspatients were divided into 100 kV group (n=26) and 120 kV group (n=43) based on the tube voltages, and their pulmonary veins were scanned with current automatic regulation technology. The image qualities of these two groups were compared using quantitative and qualitative approaches. ResultsThe effective dose in 100 kV group was 24% lower than that in 120 kV group (p<0.01) . The image quality was similiar between these two groups (p>0.05) : the contrast to noise ratio was not significantly different (p>0.05) ; for the scores of image quality estimated by the eye, they were 5 in 13 cases, 4 in 11 cases, and 3 in 2 cases in 100 kV group and 5 in 31 cases, 4 in 8 cases, and 3 in 4 cases in 120 kV group (p>0.05) . ConclusionThe enhanced pulmonary vein CT with tube voltage of 100 kV and 120 kV combined with current automatic regulation technology can reduce the radiation dose without sacrificing the image quality.

Keywords: X-ray computed tomography dual-source computed tomography pulmonary vein low dose

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