孙凯,韩瑞娟,王利军,王臣,陈楠,杜祥颖,李立刚,李坤成*.大螺距双源CT心脏与头颈血管一站式联合扫描的可行性[J].中国医学影像技术,2014,30(1):136~140

大螺距双源CT心脏与头颈血管一站式联合扫描的可行性

Feasibility of high-pitch dual-source CT coronary combined with carotid and cerebrovascular angiography

投稿时间： 2013-07-22 最后修改时间： 2013-12-07

DOI:

中文关键词：体层摄影术,X线计算机 冠状血管 脑血管

英文关键词:Tomography, X-ray computed Coronary vessels Cerebrovascular

基金项目:包头市社会发展科技支撑项目（2012S2006-03-05）；新疆兵团科技医药卫生专项重点项目（2012AB015）。

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中文摘要:

目的 评价Flash双源CT前瞻性心电门控螺旋扫描模式（Flash Spiral模式）心脏与头颈血管一站式联合成像的图像质量、辐射剂量。方法 选择246例连续性患者，分为3组，每组82例：A组采用Flash Spiral模式行心脏与头颈血管联合扫描；B组采用Flash Spiral模式心脏成像；C组采用双能量扫描模式行头颈部CTA。分别测量主动脉根部CT值及CNR，测量颈总动脉起始部、颈内动脉起始部、大脑中动脉M1段、椎动脉V4段CT值及图像噪声，评价图像质量、有效辐射剂量。结果 A组与B组冠状动脉平均图像质量评分差异无统计学意义（*P*>0.05），A组与C组头颈部血管图像质量评分差异无统计学意义（*P*>0.05），A组头颈部ED显著低于C组（*t*=24.215，*P*<0.01）。结论 大螺距双源CT Flash Spiral模式心脏与头颈部血管一站式联合扫描图像质量好，成功率高，对比剂用量少，辐射剂量低。

英文摘要:

Objective To investigate image quality and radiation doses of prospectively ECG-triggered spiral acquisition mode (Flash Spiral mode) coronary CTA combined with carotid and cerebrovascular angiography by high-pitch dual-source CT. **Methods** Totally 246 consecutive patients were retrospectively included and equally divided into three groups (each *n*=82). Patients in group A underwent coronary CTA combined with carotid-cerebrovascular angiography using Flash Spiral mode, in group B underwent coronary CTA, while in group C underwent carotid-cerebrovascular CTA used dual-energy mode. The mean CT attenuations and CNR of ascending aorta root were measured. The mean CT attenuations and image noise of proximal parts of common carotid artery, proximal parts of the internal carotid artery, M1 segment of middle cerebral artery and V4 segment of the vertebral artery were measured. The effective radiation doses of all groups were calculated. **Results** There was no significant difference of mean image quality grading of coronary artery segments between group A and group B (all *P*>0.05), nor of image quality grading in carotid-cerebrovascular between group A and group C (all *P*>0.05). The effective radiation doses of carotid-cerebrovascular scanning in group A were significantly lower than that in group C (*t*=24.215, *P*<0.01). **Conclusion** Flash Spiral mode of high-pitch dual-source can provide high image quality and success ratio along with significant reduction of radiation exposure as well as less contrast material in coronary CTA combined with carotid and cerebrovascular angiography.

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