

论著

双源CT在主动脉夹层腔内隔绝术后的应用及辐射剂量研究

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摘要:

目的: 探讨双源CT在Standford B型主动脉夹层术后随访中的价值, 并比较双能量与单能量扫描模式的辐射剂量。方法: 共40名主动脉夹层术后患者行双源CT扫描。双能量组20例, 采用100 kV和140 kV, 螺距1.0; 单能量组20例, 采用120 kV, 螺距2.0。两组均采用CareDose4D自动追踪电流法。观察与分析支架状况、有无内漏、血栓吸收程度等情况。记录双能量组及单能量组的辐射剂量、采集时间、扫描长度, 观察两种扫描模式的差异。结果: 双能量组和单能量组扫描长度差异无统计学意义($P>0.05$); 双能量组采集时间明显长于单能量组($P<0.05$); 单能量组受辐射剂量明显低于双能量组($P<0.05$)。结论: 双源CT可以客观地评价主动脉夹层腔内隔绝术后情况, 全面观察术后疗效和并发症。单能量中等螺距扫描模式辐射剂量低于双能量模式。

关键词: 主动脉夹层 血管造影术 腔内隔绝术 体层摄影术 X线计算机

Application and radiation dose research of dual-source CT in aortic dissection after endovascular exclusion

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Abstract:

Objective: To evaluate dual-source CT in the Standford B aortic dissection in the postoperative follow-up and to compare radiation dose of dual-energy mode with single-energy scanning. Methods: A total of 40 patients with aortic dissection after endovascular exclusion underwent dualsource CT. Tweny patients took the dual-energy scanning mode (100 kV and 140 kV, pitch 1.0); the other 20 patients had single-energy mode (120 kV, pitch 2.0). In both groups CareDose4D technology was used to track the current method. All images were analyzed to observe the stent shape, with or without endoleaks and the rate of thrombosis absorption. Radiation dose, scan length, and scan time were recorded for all patients, and then compared between dual-energy mode and single-energy scanning. Results: The difference in scan length and image quality was not significant between the dualenergy group and the single-energy group. The acquisition time of the dual-energy group was longer than that of the single-energy group, with significant difference. Radiation dose of thesingle-energy group was lower than that of the dual-energy group, with significant difference. Conclusion: Dual-source CT can objectively evaluate the conditions after the endovascular exclusion of aortic dissection. The operative effect and complications may be analyzed comprehensively. The radiation dose of the single-energy scan mode with medium pitch is lower than that of the dual-energy mode.

Keywords: aortic dissection angiography endovascular exclusion tomography, X-ray computed

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