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双源CT对冠状动脉狭窄与左室功能及心肌缺血关系的分析

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Analyzing the Correlation between Coronary Artery Stenosis and Left Ventricular Function and Myocardial Ischemia Using Dual-source Computed Tomography

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摘要 目的 应用双源CT（DSCT）冠状动脉造影并和常规冠脉造影、超声、心电图对照，探讨冠状动脉病变与心肌缺血和左室功能受损之间的关系。方法 32例患者在1周内同时行DSCT冠状动脉造影与常规冠状动脉造影检查，对冠脉狭窄进行分析，比较两种方法 对冠状动脉评估有无差异；并采用心电图诊断心肌缺血；使用DSCT心功能软件计算左心室心肌质量（LVMM）、左心室射血分数（LVEF）、左心室每搏输出量（LVSV）值。将冠脉狭窄的支数、狭窄程度、狭窄的不同血管与LVMM、LVEF、LVSV值及临床心肌缺血改变对照分析。结果 DSCT冠状动脉造影与常规冠状动脉造影两种检查方法 对诊断冠状动脉狭窄差异无统计学意义。在三支与双支病变组和中与重度狭窄时LVMM、 LVEF、LVSV及心肌缺血率差异均有统计学意义（$P<0.05$）；而在单支与双支和轻度与中度间LVEF、LVSV差异无统计学意义，LVMM及心肌缺血率差异具有统计学意义（$P<0.05$）。在左前降支、右冠状动脉、左回旋支呈单支血管中、重度狭窄时，只有左前降支组LVMM、 LVEF、LVSV值差异具有统计学意义（$P<0.05$）。结论 冠状动脉狭窄的支数越多、狭窄程度越重，心肌缺血的发生率越高，左心室功能损害越大，左前降支狭窄对心功能损失最大。LVMM在冠状动脉狭窄时是较敏感的心肌缺血指标。

关键词： X线计算机 体层摄影术 双源CT 左心室功能

Abstract: ObjectiveTo study coronary artery stenosis, myocardial ischemia, and left ventricular dysfunction in dual source computed tomography (DSCT) coronary artery angiography. MethodsTotally 32 patients underwent both DSCT and X-ray coronary angiography within one week to detect coronary artery stenosis separately. Meanwhile, the values of left ventricular myocardial mass (LVMM) , left ventricular ejection fraction (LVEF) , and left ventricular stroke volume (LVSV) were calculated using cardiac function software in DSCT. Electrocardiography was carried out to diagnose myocardial ischemia. The coronary artery stenosis, values of LVMM, LVEF, and LVSV, and myocardial ischemia were compared. ResultsThe results of DSCT and X-ray coronary angiography were not significantly different. LVMM, LVEF, LVSV, and myocardial ischemia were significantly different between two- or three-branch groups or between middle or severe groups (both$P<0.05$) . However, no such significant difference was observed between single and two branch groups and between mild and middle groups. There were no statistically different findings for LVEF and LVSV, but there was statistical deference between LVMM and myocardial ischemia ($P<0.05$) . For single branch and middle to severe stenosis in left anterior descending (LAD) coronary artery, right coronary artery, left circumflex coronary artery, only the values of LVMM,LVEF,and LVSV in LAD group showed significant difference ($P<0.05$) . ConclusionsMore stenotic branches and severer stenosis in coronary artery often are associated with higher incidence of myocardial ischemia and severer left ventricular dysfunction. The stenosis of LAD coronary artery has especially severe impact on cardiac functions. LVMM is a sensitive indicator for myocardial ischemia in coronary artery stenosis.

Keywords: X-ray computed tomography dual-source computed tomography left ventricular function

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