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实时三维斑点追踪显像技术评价心肌缺血患者左心室局部功能

Real-time three-dimension speckle tracking in assessment of left ventricular regional function in patients with myocardial ischemia

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中文摘要:

目的 应用实时三维斑点追踪显像(3D-STI)技术评价冠状动脉左前降支(LAD)不同狭窄程度缺血患者左心室心肌局部应变变化。方法 根据冠状动脉造影(CAG)结果将138例临床疑诊冠心病患者分为对照组(34例)和狭窄组(104例),另将狭窄组分为轻度狭窄亚组(A亚组,*n*=34)、中度狭窄亚组(B亚组,*n*=36)和重度狭窄亚组(C亚组,*n*=34)。测量LAD供血区域心肌的应变指标:峰值径向应变(PLS)、峰值面积应变(PAS)、应变显像舒张指数(SI-DI),分析2D-STI及3D-STI测值的相关性。结果 对照组3D-STI的PLS较2D-STI值偏低(*P*<0.05),相关性良好(*r*值:0.58~0.76)。A亚组PAS与对照组相比差异无统计学意义(*P*>0.05)。与对照组比较,C亚组全部节段及B亚组前壁中间段及心尖段、前间隔中间段及前间隔心尖段的PAS值减低(*P*<0.05),C亚组全部节段及B亚组前壁基底段及心尖段、前间隔中间段及前间隔心尖段的SI-DI值减低(*P*<0.05);与B亚组比较,C亚组的前壁中间段及心尖段的PAS值减低(*P*<0.05),前壁中间段及心尖段和前间隔心尖段的SI-DI值减低(*P*<0.05)。结论 3D-STI可有效评估心肌缺血患者左心室局部心肌纤维早期形变特征。

英文摘要:

Objective To assess the alterations of regional strain in left ventricular (LV) ischemic myocardial segments in patients with different extent of left anterior descending artery (LAD) stenosis with real-time three-dimensional speckle tracking imaging (3D-STI). **Methods** One hundred and thirty-eight patients with clinically suspected coronary heart disease (CHD) were divided into control group (*n*=34) or stenosis group (*n*=108) according to coronary angiography (CAG), and those in stenosis group were divided into mild stenosis (A, *n*=34) subgroup, moderate stenosis (B, *n*=36) subgroup and severe stenosis (C, *n*=34) subgroup. STI was performed before CAG, and stain parameters of LV, including segmental systolic peak longitudinal strain (PLS), segmental systolic peak area of strain (PAS) and strain imaging diastolic index (SI-DI) were measured. The relation between 2D-STI and 3D-STI results was analyzed. **Results** Compared with 2D-STI, PLS of 3D-STI decreased (*P*<0.05), while good correlation was found between 2D-STI and 3D-STI in the control group (*r*: 0.58-0.76). Compared with control group, PAS of A subgroup were not statistically different (*P*>0.05), while of all segments in C subgroup, of mid anterior and mid anteroseptal, as well as of apical anterior and apical anteroseptal in B subgroup were lower (*P*<0.05), SI-DI of all segments in C subgroup and basal anterior, mid anteroseptal, apical anterior and apical anteroseptal in B subgroup were lower (*P*<0.05). Compared with B subgroup, PAS of mid anterior and apical anterior in C subgroup were lower (*P*<0.05), SI-DI of mid anterior, apical anterior and apical anteroseptal in C subgroup were lower (*P*<0.05). **Conclusion** 3D-STI can effectively evaluate early changes of deformation characteristics of LV regional myocardial ischemia.

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