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## 超声二维斑点追踪技术评价心尖肥厚型心肌病左心室扭转运动

### Evaluation of left ventricular torsion in patients with apical hypertrophic cardiomyopathy with two-dimensional ultrasound speckle tracking imaging

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中文摘要:

目的 探讨应用超声斑点追踪成像技术(STD)评价心尖肥厚型心肌病(AHCM)患者左心室扭转运动(LVtor)的临床应用价值。方法 对34例AHCM患者与21名健康志愿者行二维超声检查。获取左心室短轴二尖瓣环水平、心尖水平二维图像,应用STI软件测定左心室短轴心底水平、心尖水平心肌旋转角度峰值及达峰时间、旋转速度峰值;测定左心室整体扭转角度峰值(Ptw)、达峰时间、左心室舒张期解旋减半时间(HTU);计算舒张期解旋率(Untw R);比较两组间各参数差异。HTU分别与二尖瓣口舒张早期峰值(E)、舒张晚期峰值(A)及E/A值行相关分析。结果 AHCM组左心室短轴心尖水平心肌收缩期旋转角度峰值和旋转速度峰值均较对照组增加,达峰时间延长( $P < 0.05$ );AHCM组左心室整体Ptw及扭转速度峰值较对照组显著增大( $P < 0.05$ );AHCM组舒张期HTU较对照组延迟,Untw R降低,解旋速度峰值减低( $P < 0.05$ )。AHCM组HTU与E/A值呈负相关。结论 AHCM患者在左心室收缩功能正常时,心尖部旋转及左心室扭转运动增强,Untw R降低。STI可敏感地反映出AHCM患者的心肌功能变化。

英文摘要:

**Objective** To explore the value of two-dimensional ultrasound speckle-tracking imaging (STI) in assessing the left ventricular torsion (LVtor) in patients with apical hypertrophic cardiomyopathy (AHCM). **Methods** Thirty-four patients with AHCM and 21 healthy volunteers underwent two-dimensional echocardiography. High frame rate two-dimensional images of left ventricular short-axis views at the levels of mitral annulus and apex were obtained. Peak rotation (Prot) and the time to Prot, peak rotation velocity on basal and apical plane in left ventricular short-axis views, the peak twist (Ptw) and time to peak twist, half time of untwisting (HTU) were measured using two-dimensional strain software while twisting rate (Untw R) was calculated. All the above indices were compared between patients and healthy volunteers. Correlation was analyzed between HTU and E, A, E/A ratio. **Results** Compare with healthy volunteers, Prot and time to Prot and peak rotation velocity on apical plane in AHCM significantly increased, so did Ptw and peak rotation velocity of left ventricular (all  $P < 0.05$ ). HTU delayed with the Untw R and peak untwisting velocity decreased in the AHCM group (all  $P < 0.05$ ). There was negative correlation between HTU and E/A ratio in patients with AHCM. **Conclusion** When the left ventricular systolic function maintained normal in patients with AHCM, the peak rotation on apical plane and the LVtor increased with Untw R decreased. STI can sensitively evaluate the function alteration of myocardium in patients with AHCM.

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