实时三维TEE评价犬二尖瓣对合程度与二尖瓣反流程度的关系

Assessment of relationship between degree of mitral valve coaptation and mitral regurgitation of dogs with real-time three-dimensional transesophageal echocardiography

作者	单位	E-mail
王林林	首都医科大学附属北京安贞医院超声科, 北京　100029;北京大学第一医院超声科, 北京　100034	
何怡华	首都医科大学附属北京安贞医院超声科, 北京　100029	yihua_he@yahoo.cn
陈健	山西省人民医院超声科, 山西　太原　030012	
韩建成	首都医科大学附属北京安贞医院超声科, 北京　100029	
谷孝艳	首都医科大学附属北京安贞医院超声科, 北京　100029	
陈娇阳	首都医科大学附属北京安贞医院超声科, 北京　100029	
李治安	首都医科大学附属北京安贞医院超声科, 北京　100029	

中文摘要:

　　目的　建立急性二尖瓣反流动物模型,应用实时三维TEE(RT-3D-TEE)分析犬心脏出现二尖瓣中度及中度以上反流时所对应的二尖瓣对合指数的截断值。方法　应用15只健康犬建立二尖瓣中度及中度以上反流模型,以Philips iE33超声心动成像仪分别于基础状态下、过度压力状态下及出现二尖瓣中度及中度以上反流状态时获取原始数据,对超声数据进行分析得出二尖瓣对合指数,利用ROC曲线确定截断值。对实验犬二尖瓣前后叶粗糙带进行染色,以获得实体二尖瓣对合指数。结果　基础状态下超声所测二尖瓣对合指数与二尖瓣对合指数实体测量值具有良好的相关性(r=0.76,P<0.05),二尖瓣对合指数与左心室压力呈负相关(r=-0.86,P<0.01);二尖瓣中度及中度以上反流时,二尖瓣对合指数小于基础状态(P=0.045)。二尖瓣出现中度及中度以上反流时,二尖瓣对合指数所对应的ROC曲线下面积为0.89 cm^2,当二尖瓣对合指数的截断值为19.89%时,敏感度为81.25%、特异度为92.00%。结论　RT-3D-TEE测量二尖瓣对合指数可以较好地反映犬二尖瓣的实际对合情况。

英文摘要:

Objective To analyze the cut-off point of mitral valve (MV) coaptation index when moderate and (or) above regurgitation occurs using real-time three-dimensional echocardiography (RT-3D-TEE) constructing acute MV regurgitation dogs. **Methods** Fifteen healthy dogs were used to build the experimental models of moderate and (or) above mitral regurgitation (MR). Original data at basic condition, pressure overload condition and condition when moderate and (or) above MR occurred were acquired with Philips iE33. MV coaptation index was acquired by analysis of the original data,and the cut-off point was obtained using ROC curve. The rough region of the leaflets was dyed with pyoktanin to acquire the entity MV copatation index. **Results** MV coaptation index measured in basic condition had good correlation with actual MV coaptation index by measuring the entity valve (r=0.76, P<0.05). The coaptation index was significantly correlated with left ventricular pressure (r=-0.86, P<0.01). There was statistical difference (P=0.045) for MV coaptation index between the moderate and (or) above MR and basic condition without MR or mild MR. The area under ROC curve was 0.89 cm^2 when moderate and (or) above MR occurred, and the cut-off point was 19.89%, the sensitivity was 81.25%, the specificity was 92.00%. **Conclusion** The measurement of RT-3D-TEE for MV coaptation index can reflect the actual MV coaptation condition in canine.