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实时三维超声心动图诊断心脏多发性粘液瘤 5 例并文献分析

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摘要 目的:探讨实时三维超声心动图对心脏多发性粘液瘤诊断和术前风险评估及手术方式选择的临床意义。**方法:**回顾性分析我院 2007 年 1 月至 2012 年 12 月收治的经手术病理确诊为心脏多发性粘液瘤 5 例患者的二维超声心动图(two-dimensionale echocardiography, 2DE)、实时三维超声心动图(real-time three-dimensional echocardiography, RT-3DE)声像图特征,并结合相关文献进行分析。**结果:**5 例患者的超声心动图均在心腔内探及多个活动性团块,各团块均与一蒂相连接,RT-3DE 较 2DE 能准确显示粘液瘤整体形态、位置及与周围组织清晰的界限,并定量测定其大小。**结论:**RT-3DE 弥补了 2DE 不能显示粘液瘤立体形态图像的缺点,可更为准确、简便、快捷地对心脏多发性粘液瘤做出诊断,并为术前风险评估及手术方式的选择提供了更可靠的依据。

关键词:实时三维超声心动图(RT-3DE);心脏粘液瘤;文献分析

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Diagnosis of Five Cases of Cardiac Myxomatosis by Real-time Three-dimensional Echocardiography and Literature Review

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ABSTRACT Objective: To investigate the clinical significance of Real-time three-dimensional echocardiography (RT-3DE) in the diagnosis and the preoperative instruction of Cardiac Myxomatosis. **Methods:** The differences of sonographic features between 2DE and RT-3DE in five cases of Cardiac Myxomatosis who had been confirmed by pathological examination from January 2007 to August 2012 were reviewed, and the related literatures were analyzed. **Results:** RT-3DE could provide more information about the myxomas' whole shape, location and the clear boundaries of it than 2DE. In addition, RT-3DE could quantitative measure its size and possess more clinical significance about preoperative guidance. **Conclusion:** RT-3DE had the advantage of displaying the whole shape of myxoma. It was a convenient, quick and precise modality for the diagnosis of Cardiac Myxomatosis and may be of significant clinical value for the preoperative guidance.

Key words: Real-time three-dimensional echocardiography; Cardiac Myxoma; Literatures review

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心脏粘液瘤是最多见的良性原发性心脏肿瘤,约占 50%,以左心房单发最多见,多发性较罕见^[1,2]。超声心动图是早期发现和诊断心脏粘液瘤比较敏感和可靠的方法。RT-3DE 可实时显示心脏的立体结构和病变的立体形态图像,为心脏粘液瘤患者的诊断提供了更可靠的依据。本文总结了本院 2007 年 1 月至 2012 年 8 月经手术病理确诊的心脏多发性粘液瘤 5 例患者的(two-dimensionale echocardiography, 2DE)、实时三维超声心动图(real-time three-dimensional echocardiography, RT-3DE)声像图特征并结合相关文献进行分析,以探讨 RT-3DE 对其的诊断价值。

1 资料与方法

1.1 一般资料

5 例患者中男 3 例,女 2 例,年龄最小 15 岁,最大 57 岁,3

例表现为活动后胸闷、气促,1 例表现为心悸,1 例表现为胸痛。查体肺动脉瓣区、心尖区可闻及双期 III/VI 叹气样杂音 1 例,胸骨左缘第 3~4 肋间闻及舒张期杂音 3 例,各瓣膜区未闻及病理性杂音 1 例;所有患者未见明显皮肤色素沉积,内分泌系统未见激素分泌异常,心功能均正常,且均无粘液瘤及其他遗传代谢病家族史。其中 1 例于 2012 年 7 月就诊我院,具体病例特点:男性,15 岁,于 6 年前因体检发现心脏粘液瘤,在外院行心脏粘液瘤摘除术。2 月前开始出现活动后胸闷、气促,1 月前出现依次短暂性晕厥。查体:肺动脉瓣区、心尖区可闻及双期 III/VI 叹气样杂音;肝大,无腹水。

1.2 方法

回顾 5 例心脏多发性实性粘液瘤患者的 2DE、RT-3DE 声像图特征。

1.3 仪器

PHILIPS 公司 IE33 超声诊断仪。

1.4 操作方法

首先用 2DE 作常规切面探查以重点观察心内结构改变,

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若发现心脏内异常回声团,转移探头结合多个角度切面观察团块部位、大小、形态、与周围腔壁关系及活动度等,结合彩色多普勒血流显像(CDFI)显示各心腔和瓣膜血流情况,测量团块的

大小及心脏的腔径,最后切换 X3-1 探头进行 RT-3DE 探查。比较 2DE 与 RT-3DE 图像,根据 RT-3DE 图像特征做出诊断,其详细 RT-3DE 声像图特征见表 1。

表 1 5 例心脏多发性实性粘液瘤 RT-3DE 的声像图特征

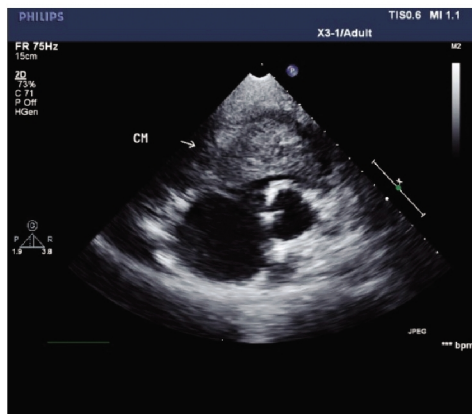
Table 1 Sonographic features of RT-3DE of 5 cases of Cardiac Myxomatosis

Cases	Sonographic features of RT-3DE						
	Position	Tumour pedicle	Size(mm)	Shape	Boundary	Echo	Mobility
1	Near the apex of LV	Tubbiness	22.2× 23.2× 22.1	Roundness		Uniform	Cycle reciprocates
	Near the apex of RV	Slender	19.1× 13.2× 12.1	Oval	Distinct	Intensity	Cycle reciprocates
	RVOT	Tubbiness	19.8× 103.2× 99.1	Anomaly		Uniform	Cycle reciprocates
2	Atrial septal middle of LA	Shortness	18.7× 18.2× 19.1	Roundness	Distinct	Uniform	Cycle reciprocates
	Atrial septal lower of LA	Slender	8.1× 16.2× 10.3	Oval			Cycle reciprocates
3	Atrial septal middle of LA	Shortness	10.3× 13.3× 12.8	Roundness	Distinct	Uniform	Cycle reciprocates
	near the apex of LV	Shortness	22.3× 19.7× 20.6	Roundness			Cycle reciprocates
4	Atrial septal middle of LA	Slender	28.5× 30.4× 22.6	Roundness	Distinct	Uniform	Cycle reciprocates
	PMVL	Shortness	22.4× 31.5× 21.0	Oval			Cycle reciprocates
5	Atrial septal middle of LA	Tubbiness	30.4× 28.5× 29.8	Roundness	Distinct	Uniform	Fixed
	Atrial septal lower of LA	Slender	19.4× 28.0× 22.1	Oval			Cycle reciprocates

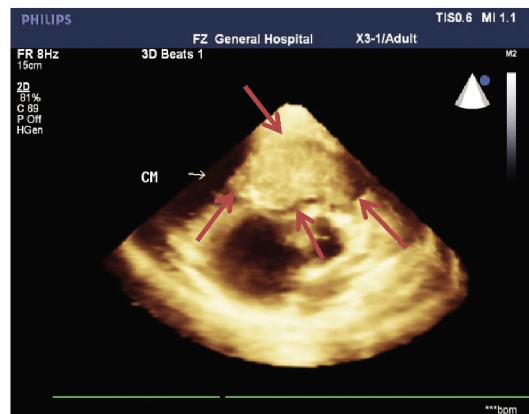
2 结果

总结 5 例患者的声像图:2DE 多切面显示团块可位于左房、左室、右室、右室流出道及肺动脉腔内;团块大小不一,呈圆形、椭圆形或不规则;为实质略强回声光团,内回声较均匀;借瘤蒂与心壁或瓣膜相连;边界多较清晰,巨大者与周围组织分

界不明显;以瘤蒂为固定点随心动周期做往返或甩鞭样运动,多数左房内粘液瘤活动度较大,表现为舒张期脱入二尖瓣口,收缩期回到左房;RT-3DE 均实时显示瘤体立体形态图像与周围组织清晰的界限(图 1),瘤蒂的位置及粗细(图 2),并定量测定瘤体的大小。超声提示心脏多发性实性粘液瘤,经手术及病理证实(图 3)。



2DE



RT-3D

图 1 RT-3D 清晰显示粘液瘤边界清晰

Fig. 1 Clear display of myxoma boundary by RT-3D

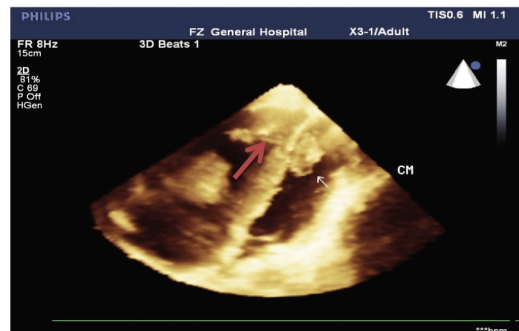


图 2 右室近心尖部粘液瘤瘤蒂

Fig. 2 Right ventricular apex myxoma pedicle

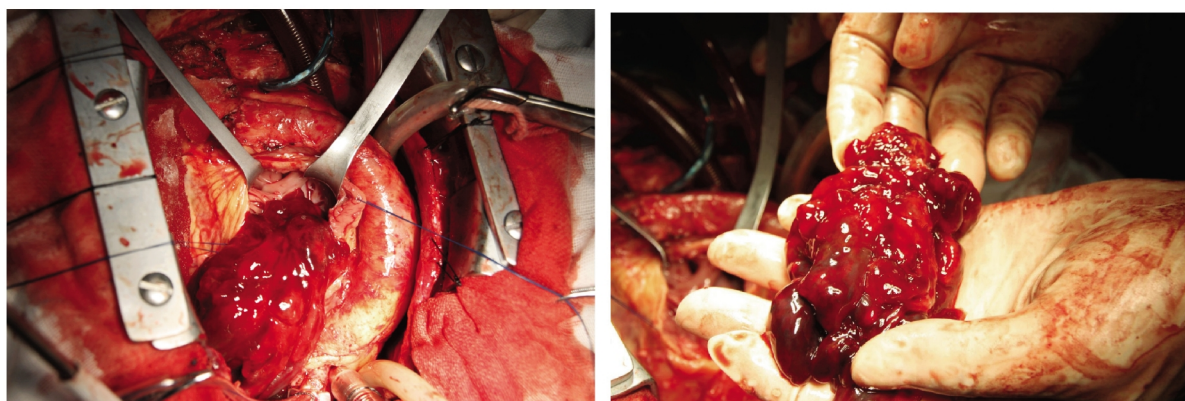


图3 术中

Fig. 3 Intraoperation

3 讨论

心脏粘液瘤是一种原发性心脏良性肿瘤,可发生于心腔的任何部位,约80%单发于左心房,其中起源于房间隔者占75%,发生于双心房、左心室、右心室者约占10%,起源于瓣膜组织者少见,而起源于左心房非常规位置及多点多腔室分布的多发性者罕见^[3-5]。根据李志刚等^[2]对心脏粘液瘤新的分型探讨,分为典型和非典型两类。典型粘液瘤指肿瘤起源于房间隔卵圆窝附近、单蒂、局限于左心房、无基因异常证据的粘液瘤;其余包括家族性、多点多腔室分布、左心房非常规位置起源、有明显基因异常、病理提示有恶性倾向的均为非典型粘液瘤。依据该临床分型,本组报道的5例多发性心脏粘液瘤患者均属于非典型,术后复发率在33%~42%^[6]。

心脏粘液瘤的临床表现无特征性,与瘤体所在的位置、大小、形态、有无碎片脱落等密切相关。瘤体较大者有心脏梗阻症状,可随体位变动而发作,左心房粘液瘤可影响肺静脉血液回流,表现为呼吸困难、咳嗽、咯血等肺淤血症;右心房粘液瘤影响腔静脉血液回流则表现为外周水肿、颈静脉怒张、肝脏肿大等。当瘤体突然堵塞房室瓣口引起心搏量显著降低,可发生突然昏厥,甚至心脏骤停。另外,粘液瘤碎片或瘤体表面血栓脱落可发生体、肺循环的栓塞,其中栓子35%来源于左房,10%来源于右房^[7]。除此之外亦可出现发热、乏力、血沉加快、贫血等全身症状,这与肿瘤所导致的继发性自身免疫性疾病或出血坏死及炎症细胞浸润有关^[8]。

心脏粘液瘤有猝死、动脉栓塞的风险,应早发现、早诊断、早手术^[9]。超声心动图是心脏粘液瘤首选检查方法。随着超声诊断技术的不断发展,实时经胸三维超声心动图和实时经食道三维超声心动图对诊断结构性心脏病提供了另一种新方法^[10,11]。二尖瓣环的几何结构复杂,通过二维超声心动图很难观察清楚,而实时三维超声心动图能让我们更好的了解二尖瓣环的结构。通过实时三维超声心动图的观察发现在粘液瘤于二尖瓣附近的患者其二尖瓣环的结构均发生了明显变化,同时伴有严重的二尖瓣返流。实时三维超声心动图能了解二尖瓣的精细结构并进行分析^[12]。

多发性心脏粘液瘤声像图特征为房、室腔内多个偏强回声团,借蒂与房、室壁或瓣膜连接,轮廓清晰,边缘较规整,大致为

圆形、椭圆形或分叶状的团状回声,内部回声较均匀,团块活动度好,以蒂为固定点随心动周期做往返运动。实时三维超声心动图能从多个角度观察肿块,帮助我们更好的了解多肿块的位置、大小、形态、数目、活动度及与周围的关系,特别在与血栓鉴别方面提供重要帮助。实时三维超声心动图能较真实的反映肿块形状,其测量的大小较二维测量数据大^[13-16]。

结合该5例患者,相比于二维超声心动图显示的是瘤体某一剖面上的平面特征,实时三维超声心动图具有准确显示肿瘤整体形态及位置、定量测定其大小及其与周围结构有无粘连的优点。这些优点对心脏粘液瘤的术前风险评估及手术方式的选择亦具有十分重要的临床意义。根据相关报道^[17],在术前若用实时三维超声心动图准确定位瘤体位置、数量、定量测定大小及与周围组织粘连情况,能指导心脏切口径路的确定及手术方式的选择,如左心房粘液瘤,选择右心房-房间隔径路,具有充分显露手术视野及便于进一步探查心腔、瓣膜的优点;对瘤体巨大、广泛粘连的可考虑行原位心脏移植以便彻底清除肿瘤^[18-20]。本组5例患者结合RT-3DE声像图,都以最少、最小的心脏切口将瘤体连同瘤蒂完整切除,术后1周复查超声心动图,均未发现遗漏或残留的粘液瘤。

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