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射频消融术治疗心动过速性心肌病的临床效果研究 *

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摘要 目的:探讨射频消融术对心动过速性心肌病的临床治疗效果。**方法:**对 2012 年 1 月 -2013 年 12 月在我院就诊的 34 例心动过速性心肌病患者采用射频消融术进行治疗,通过心电图、X 线和超声心动图检测治疗前后患者的心率(HR)、心胸比率、左心室舒张末径(LVEDD)、左心室收缩末径(LVESD)和左室射血分数(LVEF),使用 SF-36 生活质量调查表对治疗前后患者的生活质量进行评分。**结果:**所有患者经射频消融术治疗后恢复窦性心律,1 例复发,复发率为 3.03%,患者的呼吸困难、心悸等临床症状明显缓解。治疗后 6 个月,患者的 HR、心胸比率、LVEDD、LVESD 和 LVEF 均较治疗前显著改善,差异均具有统计学意义(均 P< 0.05);治疗后 1 周,患者的生理机能(PF)、生理职能(RP)、躯体疼痛(BP)、一般健康(GH)、精力(VT)、社会功能(SF)、情感职能(RE)和精神健康(MH)评分均较治疗前显著升高,差异均具有统计学意义(均 P< 0.05)。**结论:**采用射频消融术治疗心动过速性心肌病的临床效果好,能显著提高患者的生活质量,并改善患者的心功能。

关键词:心动过速性心肌病;射频消融术;临床疗效

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A Study on the Clinical Effect of Radiofrequency Catheter Ablation on Tachycardiomyopathy*

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ABSTRACT Objective: To explore the clinical effect of radiofrequency catheter ablation on tachycardiomyopathy. **Methods:** 34 cases of patients with tachycardiomyopathy who were treated by radiofrequency catheter ablation in our hospital from January 2012to December 2013 were selected. The ECG, X-ray and echocardiography were used to detect the heart rate (HR), cardiothoracic ratio, left ventricular end-diastolic diameter (LVEDD), left ventricular end-systolic diameter (LVESD) and left ventricular ejection fraction (LVEF) before and after treatment. The patients' quality of life were evaluated and compared by the SF-36 questionnaire before and after treatment. **Results:** All the patients treated by radiofrequency catheter ablation therapy restored sinus rhythm, recurrence was observed in only one case, the recurrent rate was 3.03%, the clinical symptoms of dyspnea, palpitations were all apparently eased. At 6 months after treatment, the HR, cardiothoracic ratio, LVEDD, LVESD, and LVEF of patients were all significantly improved compared with those before treatment (P<0.05). At 1 week after treatment, the scores of PF, RP, BP, GH, VT, SF, RE and MH were all obviously increased compared with those before treatment (P<0.05). **Conclusion:** Radiofrequency catheter ablation was effective in the treatment of tachycardiomyopathy, which could significantly improve the patients' quality of life, and improve the heart function.

Key words: Tachycardiomyopathy; Radiofrequency catheter ablation; Clinical efficacy

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前言

心动过速性心肌病(Tachycardiomyopathy)患者存在心脏重构所致的心脏扩大和心功能异常, 严重者可发生心力衰竭,其病因为持续或频繁发作的心动过速,及时控制心动过速并恢复窦性心率是治疗该类疾病的关键。射频消融术(radiofrequency catheter ablation,RCA)是经过人体的脉管系统将电极送到心腔靶部位,通过射频放电使局部心肌组织发生凝固性坏死,进而使异常的心律失常传导电流或起源点受到抑制[1-3]。本研究通过回顾性分析 2012 年 1 月 -2013 年 12 月在我院就诊的 34 例使用射频消融术进行治疗的心动过速性心肌病患者的临床资料,旨在探讨射频消融术对心动过速性心肌病的临床治疗效果,现

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将结果报道如下。

1 资料与方法

1.1 一般资料

选择 2012 年 1 月～2013 年 12 月在我院就诊的 34 例心动过速性心肌病患者，男 19 例，女 15 例，年龄 31～66 岁，平均(52.53± 6.38)岁，病程为 6 个月～4 年，平均(2.64± 1.05)年。纳入标准：心脏无器质性病变；无先天性心脏病；无病毒性心肌炎；存在心动过速等心肌病现象；胸片下心房和心室有不同程度的扩大；射血分数降低；无精神异常。心腔内电生理检查结果显示：左心室特发性室性心动过速 14 例，房室结折返性心动过速 5 例，房性心动过速 9 例，心房扑动 2 例，B 型预激综合征并房室折返性心动过速 2 例，A 型预激综合征并房颤 2 例。

1.2 治疗方法

患者入院后积极控制心室率，并使用抗心衰药物进行对症治疗。行心腔内电生理检查并进行标测，对心律失常的性质和折返路径进行判定。房颤患者使用消融慢径的方法对房室结进行改良，使房颤平均心室率和静滴异丙肾上腺素后平均心室率分别小于 90 次 /min 和 120 次 /min；使用“时间能量递增法”慢径消融房室结双径；标测到最早激动点后对局灶性房速进行消融；房扑行线性消融，使局部达到双向阻滞；P 电位被消融电极所标测，且提前于体表心电图和冠状窦 V 波，以此为消融靶点对左侧特发性室速患者进行治疗。术后处理：术后继续使用强心苷类、血管紧张素转换酶、利尿剂和β 受体阻滞剂等药物进行治疗 3～6 个月，患者好转后上述药物逐渐减量或停用。

1.3 评价指标

所有患者随访 6～15 个月。使用心电图、X 线和超声心动图对治疗前和治疗后 6 个月患者的心率(HR)、心胸比率、左心室舒张末径(LVEDD)、左心室收缩末径(LVESD)和左室射血分数(LVEF)进行测量，使用 SF-36 生活质量调查表对治疗前和治疗后 1 周患者的生活质量进行评分，主要包括生理机能(PF)、生理职能(RP)、躯体疼痛(BP)、一般健康(GH)、精力(VT)、社会功能(SF)、情感职能(RE)和精神健康(MH)。

1.4 统计学方法

使用 SPSS19.0 软件处理临床数据，计量资料和计数资料分别使用均数± 标准差和百分率表示，组间比较分别使用 t 检验和 x^2 检验，以 $P<0.05$ 表示差异具有统计学意义。

2 结果

2.1 射频消融术的临床治疗效果

所有患者经射频消融术治疗后恢复窦性心律，有 1 例复发，复发率为 3.03%，经二次射频消融后恢复正常。患者的呼吸困难、心悸等临床症状明显缓解。

2.2 射频消融术对患者心功能的影响

与治疗前比较，患者治疗后 6 个月的 HR、心胸比率、LVEDD 和 LVESD 均有不同程度的降低，LVEF 明显升高，差异具均有统计学意义($P<0.05$)，具体结果见表 1。

表 1 射频消融术治疗前后患者心功能指标的变化

Table 1 Changes of the heart function of patients before and after RCA treatment

Time	Case	HR(time/min)	Cardiothoracic ratio	LVEDD(mm)	LVESD(mm)	LVEF(mm)
Before treatment	34	153± 11.53	0.61± 0.04	64.63± 4.42	48.93± 5.53	0.36± 0.04
6 months after treatment	34	76.47± 4.35	0.52± 0.03	46.28± 3.63	33.63± 3.95	0.58± 0.07
t		36.21	10.50	18.71	13.13	15.91
P		0.0000	0.0000	0.0000	0.0000	0.0000

2.3 射频消融术对患者生活质量的影响

治疗后 1 周，患者的 SF-36 表的 8 个健康维度 PF、RP、BP、GH、VT、SF、RE 和 MH 评分均较治疗前有不同程度的提高，差异均具有统计学意义($P<0.05$)，见表 2。

表 2 射频消融术治疗前后患者生活质量的改变(分)

Table 2 Changes of the quality of life before and after RCA treatment(score)

Time	Case	PF	RP	BP	GH	VT	SF	RE	MH
Before treatment	34	70.94± 15.54	31.53± 11.85	63.84± 7.49	36.73± 14.85	56.84± 10.74	63.86± 9.43	33.74± 25.53	74.85± 21.97
1 week after treatment	34	90.74± 16.74	52.52± 16.47	73.46± 8.95	55.85± 16.74	72.63± 11.97	79.74± 11.42	66.65± 30.68	89.73± 26.04
t		5.05	6.03	4.81	4.98	5.73	6.25	4.81	2.55
P		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0066

3 讨论

心动过速性心肌病有两种类型：单纯心动过速性心肌病和非单纯心动过速性心肌病。前者是指心动过速是引发心力衰竭的唯一病因，恢复窦性心律或有效的控制心室率，患者的心功能可恢复正常；后者是指慢性心动过速发生于器质性心脏病和心力衰竭患者，导致心脏功能进一步受损，经治疗后可改善患者的心功能[12,14-16]。我们认为对于以下情况可以考虑心动过速性心肌病：左心室功能在心动过速发作前处于正常状态，频繁或持续的发作心动过速使患者左心室功能发生损害，并排除其他原因导致的心功能降低，心功能在心室率得到控制后逐渐恢复[17]。

心动过速性心肌病的发病机制复杂，主要包括以下几方面：(1)心肌细胞离子通道的活性和密度发生改变：钾、钠、钙等离子对心肌细胞的电位具有较大的影响，细胞膜上离子通道的活性和密度的改变可导致电位时程发生改变，直接影响患者的心率[18]；(2)心肌外基质和心肌重构的发生使心肌的收缩功能储备能力下降，降低了心脏的代偿能力；(3)随着心率的加快，心室舒张期明显缩短，降低了动脉压并增高了心室充盈压，导致冠脉灌注的血流量降低，引起心肌缺血，降低了冠状动脉血流储备和心内膜下到心外膜血流比值[19]。

恢复窦性心律、控制心室率和改善心功能是治疗心动过速性心肌病的关键，抗心律失常药物对心动过速性心肌病具有一定的疗效，但效果欠佳，主要是因为该类药物仅作用于心动过速发生的电生理过程，对心动过速发生的基质无影响，且该类药物具有较多的不良反应，并有一定的致心律失常作用[8]。近年来，射频消融技术得到较快的发展，其对心动过速性心肌病具有治愈成功率高、安全和并发症发生率低等优点[20]。孙爱娇等[9]等研究认为，射频消融术治疗快速心律失常安全、有效、成功率高、并发症发生率低，精确的定位、仔细熟练的操作以及严格控制消融的能量和时间，能有效地提高治疗成功率、明显降低手术并发症。

本研究中，患者治疗后 6 个月的 HR、心胸比率、LVEDD，LVESD 和 LVEF 与治疗前比较均显著改善，治疗后 1 周的生活质量评分较治疗前显著增加，提示射频消融术能有效改善心动过速性心肌病患者的心功能，并提高患者的生活质量。唐尔闻等[10]研究表明射频消融是大部分快速性心律失常的首选治疗方法，具有简捷、安全和有效的特点，通过进一步改善处理术中出现的特殊电生理现象、捕捉发作时体表 ECG 可进一步提高其治疗效果。沈才杰等[11]研究显示射频消融术可显著改善多数患者的心脏结构和心功能，经较广泛基质消融后，消融成功率及远期预后与非心动过速性心肌病患者相近。

射频消融术对心动过速性心肌病具有较好的临床治疗效果，可能是因为：射频消融仪使电能转化为热能，使局部心肌细胞损伤坏死，局部兴奋灶得到消融，折返和异常起搏点遭到破坏，从而恢复了窦性心律，使冠状动脉得血液灌注量恢复正常，减少了细胞凋亡的发生，能引起心肌重构的血管紧张素等神经激素也恢复到正常血浆浓度，抑制并逆转了心肌重构[16-18]。洪浪等[13]研究认为，心动过速可以诱导心肌病，如果及时采取射频消融治疗，可以消除心动过速发生的基质，心脏结构和功能是可以完全恢复的。

综上所述，射频消融术对心动过速性心肌病的治疗效果好，能有效改善患者的心功能，并提高其生活质量。

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