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冠心病合并缺血性二尖瓣关闭不全的手术方案探讨*

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摘要 目的:探讨适用于冠心病合并缺血性二尖瓣关闭不全的手术方法及临床效果,为心外科手术提供参考。**方法:**选取 2012 年 2 月至 2013 年 5 月在我院心脏外科接受手术治疗的冠心病合并缺血性二尖瓣关闭不全的患者 31 例。根据手术方式的不同,将所选病例分为二尖瓣成形术组和二尖瓣置换术组。术后随访 6-24 个月,观察并比较患者手术前后的左心房内径(LAD)、舒张末期直径(LVEDD)、收缩末期直径(LVESD)、左心室射血分数(LVEF)及二尖瓣返流面积。**结果:**围术期死亡 1 例,手术成功率为 96.7%。30 例成功获得随访,随访率为 98.8%。二尖瓣成形术组并发症的发生率为 22.7%,二尖瓣置换术组并发症的发生率为 23.3%,两组术后并发症的发生率无显著差异($P>0.05$)。与手术前相比,两组患者术后的左心房内径变小,左室舒张末直径和收缩末直径增加,左室射血分数升高,二尖瓣反流面积减少,差异显著且具有统计学意义($P<0.05$)。**结论:**对于冠心病合并重度缺血性二尖瓣关闭不全的患者行二尖瓣成形术或置换术应根据患者的实际情况和病理特点选择最佳的手术方案,以提高手术的成功率和安全性。

关键词:冠心病;缺血性二尖瓣关闭不全;二尖瓣成形术;二尖瓣置换术

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Discussion about the Operation Modes for Patients with the Coronary Heart Disease and Ischemic Mitral Insufficiency*

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ABSTRACT Objective: To explore the clinical effects of suitable surgical methods for patients with the coronary heart disease (CHD) and the ischemic mitral insufficiency so as to provide a reference for cardiac surgery. **Methods:** 31 patients with heart disease (CHD) and ischemic mitral insufficiency who were taken the surgery in our hospital from February 2012 to May 2013 were selected and divided into the mitral valvuloplasty group and the MVR (mitral valve replacement) group on the basis of different operation methods. Then the function of left heart were detected by UCG, and the LAD, LVEDD, LVESD, LVEF and the area of mitral valve of patients were observed and compared before and after the surgery. **Results:** Only one died on the perioperative time with the surgical success rate of 96.7%. The incidence of complications was 22.7% in the mitral valvuloplasty group and 23.3% in the mitral valve replacement group with no statistically significant difference ($P>0.05$). When comparing with before, the LAD diminished, the LVEDD and LVESD increased, the LVEF lightened and the area of mitral valve decreased with statistically significant differences ($P<0.05$). **Conclusion:** It is suggested that the selection of surgery should be well considered on the basis of the conditions and pathological characteristics of patients with coronary heart disease in order to improve the success rate and safety of the surgery.

Key words: Coronary heart disease; Ischemic mitral regurgitation; Mitral valvuloplasty; Mitral valve replacement

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前言

心脏瓣膜二尖瓣是附于左房室口周缘的二尖瓣膜、借腱索连于乳头肌,是保证心室血液循环正常进行的纽带,具有防止左心室血液回流的重要作用^[1]。若瓣叶、瓣环、腱索、乳头肌或左心室中任意一个部分发生结构变化或功能改变均可引起二尖

瓣关闭不全^[2]。缺血性二尖瓣关闭不全(ischemic mitral regurgitation, IMR) 是指由一条或多条冠状动脉部分狭窄或闭塞致心肌供血不足引起的二尖瓣病变。导致乳头肌因急性缺血性坏死而完全断裂,轻者会出现呼吸困难,重者则出现急性左心衰竭,甚至心源性休克等^[3-5]。目前,适用于二尖瓣关闭不全的术式主要有二尖瓣成形术和二尖瓣置换术^[6]。二尖瓣成形术是较为有

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效的方法之一,手术成功率高,术后并发症少,但手术可能造成患者终生抗凝。二尖瓣置换术是以人工瓣膜替换的方法,多用于瓣膜无法修复的患者^[7,8]。由此可见,准确的判断病情并根据患者实际情况选择合理的手术方式是提高手术成功率的关键。本研究在分析临床资料的基础上,探讨适宜冠心病合并缺血性二尖瓣关闭不全的手术方案,为心血管外科手术提供参考。

1 资料与方法

1.1 临床资料

选取 2012 年 2 月 -2013 年 5 月在我院心脏外科接受手术治疗的冠心病患者 31 例,包括男 16 例,女 15 例,年龄分布在 28-65 岁,平均年龄 34.6 岁。所有患者经诊断均为缺血性二尖瓣关闭不全。其中,风湿性瓣膜病变 13 例,退行性病变 8 例,扩张型心肌病 10 例。二尖瓣返流程度:中度 6 例,重度 25 例;心功能分级:Ⅱ级 6 例,Ⅲ级 23 例,Ⅳ级 6 例;二尖瓣前瓣叶及腱索异常 9 例;后瓣叶及腱索异常 14 例;单纯瓣环扩大 8 例。

1.2 手术方法

1.2.1 二尖瓣成形术 患者全麻状态下,取胸部正中切口,切开心包,常规建立体外循环,阻断主动脉,根据病变情况向主动脉灌注心脏停搏液,待心跳停止行二尖瓣成形术。① 腱索断裂成形术:将腱索断裂部位的瓣叶组织做矩形切除,用自体心包片做修补,4-0 无创缝线间断缝合。② 腱索延长术:首先确定瓣叶脱垂的部位和腱索延长的程度;然后用神经钩同时提起前叶和后叶边缘向左心房和后瓣环方向牵拉;劈开乳头肌,明确需要转移的正常腱索的长度和位置;用 2-0 无创缝线环绕乳头肌后结扎。③ 人工腱索重建术:以 4-0 膨体聚四氟乙烯缝线(PTFE)作为人造腱索,带垫片缝于乳头肌的中部肌肉上,再缝于腱索断裂处的瓣叶边缘,调整缝线和人工腱索的长度^[9]。

1.2.2 二尖瓣置换术 常规术前准备同二尖瓣成形组。二尖瓣置换:用拉钩显露二尖瓣,粗丝线缝合大瓣,直角钳夹牵引线将大瓣展开,距瓣环 3 mm 处切口,剪下大瓣,剪断乳头肌,用测瓣器测量瓣环大小,选择人工心瓣,2-0 带支持垫双头针尼龙线作间断褥式缝合后,植入人工瓣,确认着床,结扎,检查人工瓣

功能,缝合切口^[10]。

1.3 观察指标

左心房内径 (LAD)、舒张末直径 (LVEDD)、收缩末直径 (LVESD)、左心室射血(LVEF)、二尖瓣返流面积。

1.4 统计分析

将检测数据采用 SPSS18.0 软件进行统计学处理,计量资料利用($\bar{x} \pm s$)表示。t 检验及标准方差分析进行两组比较,组间均数比较采用单因素分析,以 $P < 0.05$ 为差异具有统计学意义。

2 结果

2.1 两组手术的一般情况

30 例患者中,22 例行二尖瓣成形术,9 例行二尖瓣置换术,围术期死亡 1 例,手术成功率为 96.7%,随访率为 98.8%。二尖瓣成形组发生重度低心排 2 例、急性肾功能衰竭 1 例、术后出血 2 例,并发症发生率为 22.7%;二尖瓣置换组发生肺部感染 4 例、急性肾功能不全 3 例,并发症发生率为 23.3%。两组术后并发症的发生率无显著差异($P > 0.05$)。

2.2 患者手术前后心功能评价情况

① 二尖瓣成形组:术前 LAD 为(69.26 ± 2.13) mm,LVEDD 为(117.20 ± 19.10) mm,LVESD 为(107.20 ± 24.10) mm,LVEF 为(38.63 ± 12.16),二尖瓣返流面积为(11.8 ± 2.45) cm^2 ;术后 LAD 为 (58.76 ± 4.87) mm,LVEDD 为 (145.60 ± 29.30) mm,LVESD 为(164.50 ± 30.87) mm,LVEF 为(66.60 ± 13.52),二尖瓣返流面积为(2.83 ± 0.98) cm^2 。② 二尖瓣置换组:术前 LAD 为 (63.57 ± 5.68) mm,LVEDD 为 (119.70 ± 29.09) mm,LVESD 为 (129.70 ± 11.25) mm,LVEF 为(36.23 ± 10.25),二尖瓣返流面积为(12.61 ± 0.12) cm^2 ;术后 LAD 为(51.43 ± 8.29) mm,LVEDD 为(158.30 ± 24.50) mm,LVESD 为(152.13 ± 35.51) mm,LVEF 为(64.03 ± 6.76),二尖瓣返流面积为(3.57 ± 0.33) cm^2 。

与手术前比较,两组患者术后的左心房内径变小,左室舒张末直径和收缩末直径增加,左室射血分数升高,二尖瓣返流面积减少,差异显著且具有统计学意义($P < 0.05$)。见表 1。

表 1 患者手术前后的心功能指标变化情况

Table 1 Changes of heart function of patients in the two groups before and after the surgery

观察指标 Indications	二尖瓣成形组 Mitral valvuloplasty(n=22)		二尖瓣置换组 Mitral valve replacement(n=9)	
	Before the surgery	After the surgery	Before the surgery	After the surgery
心功能分级(NYHA)	III-IV	I - II	III-IV	I - II
左心房内径 LAD(mm)	69.26± 2.13	58.76± 4.87	63.57± 5.68	51.43± 8.29
左室舒张末直径 LVEDD(mm)	117.20± 19.10	145.60± 29.30	119.70± 29.09	158.30± 24.50
左室收缩末直径 LVESD(mm)	107.20± 24.10	164.50± 30.87	129.70± 11.25	152.13± 35.51
左室射血分数 LVEF(%)	38.63± 12.16	66.60± 13.52	36.23± 10.25	64.03± 6.76
二尖瓣返流面积 Mitral valve(cm^2)	11.8± 2.45	2.83± 0.98	12.61± 0.12	3.57± 0.33

3 讨论

缺血性二尖瓣关闭不全是指发生心肌缺血或梗死时,使得

乳头肌断裂或延长、附着点移位,导致二尖瓣叶对合不良,左室整体和局部重构,心腔扩大扭曲及向心尖部牵拉二尖瓣叶,左室收缩功能下降,二尖瓣关闭能力减弱,左心室瓣环空间构型

发生改变,心功能出现异常而引起的心血管系统疾病^[11-13]。对于缺血性二尖瓣关闭不全患者实施手术具有一定的危险性,其操作技术和手术适应症都有较高的要求和严格的控制^[14,15]。因此,掌握患者的病理特征、根据实际情况采取最佳的手术方案是提高手术成功率的关键。

我们认为,手术的选择应严格掌握适应症,如瓣叶裂行缝合修补,瓣叶孔洞行自体心包修补,腱索延长致瓣叶脱垂行腱索缩短术,腱索断裂行人工腱索或腱索转移术,瓣环扩大可行交界折叠术、环缩术或人工环成形术等,对复杂病变可同时采用多种修复方法^[16,17]。在手术操作上,人工腱适用范围广,但对植入长度要求极高。该技术的优点是能够最大化保留瓣膜面积,并可通过置入多根人工腱索有效应对大范围病变,转移后不会产生过长或过短的弊端,容易控制手术疗效,但存在修复的病变范围不能太大^[18,19]。人工瓣环可缩小瓣环面积,增加瓣叶对合,术中减少瓣环及瓣叶上缝线的张力,以防止术后瓣环再扩张,避免左心室流出道梗阻,对缺血性二尖瓣关闭不全具有重塑瓣环形态的作用^[20]。

本研究中,两组术后并发症的发生率无显著差异($P>0.05$)。两组患者术后的左心房内径变小,左室舒张末直径和收缩末直径变大,射血分数升高,二尖瓣返流面积缩小($P<0.05$)。说明,二尖瓣成形术中前瓣叶及其瓣下结构的修复和后瓣环的环缩十分重要,成形术的效果取决于对瓣膜形态和功能改变的充分估价和所采取的手术方案。

综上所述,对于冠心病合并缺血性二尖瓣关闭不全的患者行二尖瓣成形术或置换术应根据患者的实际情况和病理特点选择最佳的手术方案,以提高手术成功率和安全性。

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