doi: 10.13241/j.cnki.pmb.2014.23.041

老年主动脉瓣钙化与冠心病合并心律失常的相关性探讨 *

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摘要 目的:探讨老年患者主动脉瓣钙化与冠心病合并心律失常的相关性。**方法:**纳入解放军总医院疑诊为冠心病的老年住院患者276例,行冠状动脉造影,同期行超声心动图和24 h动态心电图检查,详细记录患者病史。根据超声结果,将患者分成主动脉瓣钙化(AVC)组和非主动脉瓣钙化(NAVC)组,比较两组冠心病合并心律失常的检出率,评价老年患者主动脉瓣钙化对冠心病合并心律失常的预测价值。**结果:**AVC组和NAVC组的年龄、吸烟史、高血压史、糖尿病史存在显著性差异(P<0.05);AVC组冠心病的确诊率为93.7%,而NAVC组为80.6%,两组差异有统计学意义(P=0.002);AVC组冠心病合并心律失常检出率也显著性高于NAVC组(59.2% vs 35.1%,P=0.043)。 **结论:**主动脉瓣钙化与冠心病合并心律失常密切相关,有望作为冠心病合并心律失常的高危患者有效的筛查指标。

关键词:老年;主动脉瓣钙化;冠心病;心律失常

中图分类号:R541.4 **文献标识码:**A **文章编号:**1673-6273(2014)23-4547-03

Association between Senile Aortic Valve Calcification and Coronary Artery Disease Combined with Arrhythmia*

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ABSTRACT Objective: To investigate the correlation between aortic valve calcification and coronary artery disease combined with arrhythmia in elderly patients. **Methods:** 276 patients admitted to PLA general hospital and suspected coronary heart disease were selected and their detailed medical history were recorded after admission. They all underwent coronary angiography, echocardiography and 24 hour dynamic electrocardiogram at the same time. Patients were divided into aortic valve calcification (AVC) group and non-aortic valve calcification (NAVC) group according to the echocardiographic findings. The predictive value of senile aortic valve calcification was assessed though diagnosis rates of coronary heart disease combined with arrhythmia in AVC and NAVC groups. **Results:** There were significant differences in age, smoking history, history of hypertension, diabetes mellitus between AVCand NAVC groups (P<0.05). 93.7% and 80.6% patients were confirmed with coronary artery disease in AVC group and NAVC group, respectively. And the diagnosis rate was significantly different between the two groups (P=0.002). Coronary heart disease combined with arrhythmia was more prevalent in AVC group (59.2% vs 35.1%, P=0.043). **Conclusion:** AVC was closely correlated with coronary heart disease combined with arrhythmia. It could be used as an effective indicator for screening patients with coronary heart disease combined with arrhythmia.

Key words: Elderly; Aortic Valve Calcification; Coronary Disease; Arrhythmia

Chinese Library Classification: R541.4 Document code: A

Article ID:1673-6273(2014)23-4547-03

前言

临床上,主动脉瓣膜钙化较常见,并有随年龄增加发生率升高的趋势[1]。其具体病理机制尚未明确,过去认为,其是钙、磷代谢紊乱使钙盐在细胞内和组织间被动沉积的结果,是心脏瓣膜老化或退行性变化的伴发现象。最新研究显示,主动脉瓣膜钙化是类似骨发育和骨质疏松形成的主动调节过程,是异位钙化的一种重要的表现形式[2]。

近年来,人们热衷于关注主动脉瓣钙化与冠心病的关系。一些研究表明,主动脉瓣钙化与冠心病的发生发展存在相关性,是预测冠心病发病率和严重程度的重要替代指标[3,4]。冠心病是心律失常的常见原因,老年冠心病患者常并发各种心律失常,预后往往不理想,严重心血管事件发生几率增加[5]。本文通过276例老年患者的临床资料进行分析,旨在探讨主动脉瓣钙化对冠心病合并心律失常的预测价值。

1 资料与方法

1.1 临床资料

* 基金项目:国家自然科学基金项目(81073093)

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(收稿日期:2013-12-15 接受日期:2014-01-07)

病例选自 2013 年 3 月至 2013 年 9 月在我院疑诊为冠心病拟行 冠状动脉造影(CAG)的老年患者，排除器质性心脏病、瓣膜置换术后以及系统性疾病等其他引起瓣膜损害的疾病，共入选患者 276 例。入选患者年龄 60-82 岁，平均年龄 68.47± 4.77 岁，男 159 例，女 117 例。详细采集患者病史，入院常规行超声心动图和 12 导联动态心电图检查。按照超声心动图结果将患者分为主动脉瓣钙化(AVC)组和非主动脉瓣钙化(NAVC)组。

1.2 方法

1.2.1 超声心动图 应用 HP 1000 型彩色多谱勒超声仪，探头频率为 2.5Hz。患者取仰卧位或左侧卧位，取胸骨旁长轴、心底短轴、心尖四腔及心五腔切面，观察心脏结构、功能、主动脉瓣形态、结构、反射、活动情况。瓣膜钙化的标准：多切面中显示主动脉瓣呈局限性或弥漫性增粗、增强，且瓣膜厚度 >1 mm，伴或不伴瓣膜活动度减低。

1.2.2 冠状动脉造影 应用 PHILIPH Alura Xper FD 20 全数字减影心血管造影机，采用 Judkins 多体位投影法，由两名技术熟练的心内科介入医生操作完成。经桡动脉或股动脉途径入路，进行选择性左、右冠状动脉造影。任一管腔狭窄≥ 50%即诊断为冠心病。

1.2.3 24h 动态心电图 采用 Motora 公司的 12 导联动态心电图仪，对患者进行 24h 动态监测。首先，患者做好皮肤处理并确定导联电极的安放位置。选用 12 导联 AECG 专用电极，分别将常规 12 导联体系的Ⅰ、Ⅱ、Ⅲ标准导联及单极肢体导联 aVR、aVL、aVF，依次改置在右肩上部、左肩上部、左下腹部、右下腹部，V1～V6 导联电极安放部位同常规心电图的胸导联。24 小时后，收回记录盒，运用计算机 holter 分析软件进行相关分析。

1.3 统计学分析

采用 SPSS13.0 统计软件进行数据分析。计量资料采用均数± 标准差($\bar{X}$± S)表示，计量资料两组比较采用 t 检验，计数资料两组间比较采用卡方 X^2 检验，以 P<0.05 认为差异有统计学意义。

2 结果

2.1 AVC 与 NAVC 组一般资料的比较

276 名患者全部行超声心动检查，检出 AVC 患者 142 例。根据此结果，将患者分为 AVC(n=142)和 NAVC 组(n=134)。对 AVC 和 NAVC 组的一般资料进行比较发现，两组患者的年龄、吸烟史、高血压史、糖尿病史有显著性差异(P<0.05)；性别和高脂血症史的差异无统计学意义。见表 1。

表 1 AVC 与 NAVC 组一般资料的比较

Table 1 Comparison of the general parameters between AVC and NAVC groups

项目 Item	AVC 组(n=142) AVC group(n=142)	NAVC 组(n=134) NAVC group(n=134)	P 值 P value
年龄 Age	70.50± 5.21	66.44± 3.32	0.009
性别(男 / 女) Gender (M / F)	87/55	72/62	0.253
吸烟(n) Smoke(n)	83	60	0.043
高血脂(n) Hyperlipidemia (n)	84	71	0.362
高血压(n) Hypertension (n)	117	93	0.017
糖尿病(n) Diabetes (n)	75	51	0.019

2.2 AVC 与 NAVC 组冠心病确诊率的比较

在 276 名患者中，共有 241 名患者经冠状动脉造影确诊为冠心病。在 AVC 组中，冠心病的确诊率为 93.7%，而在 NAVC 组中，冠心病的确诊率为 80.6%，两组的差异有统计学意义(X^2=9.48，P=0.002)，见表 2。

表 2 AVC 与 NAVC 组冠心病的确诊情况比较

Table 2 Comparison of the diagnositic rates of coronary heart disease between AVC and NAVC groups

组别 Category	确诊 Confirmed	未确诊 Unconfirmed	合计 Total
AVC 组 AVC group	133	9	142
NAVC 组 NAVC group	108	26	134
合计 Total	241	35	276

2.3 AVC 与 NAVC 组冠心病合并心律失常检出率的比较

在 AVC 组 142 名患者中,有 133 名被诊断为冠心病,其中有 84 名并发心律失常,检出率为 59.2%;而在 NAVC 组 134 名患者中,有 108 名被诊断为冠心病,其中有 61 名并发心律失常,检出率为 35.1%;两组冠心病合并心律失常检出率的差异有统计学意义(X^2=4.10,P=0.043),见表 3。

表 3 两组冠心病合并心律失常的检出情况比较

Table 3 Diagnosis rates of coronary heart disease combined with arrhythmia in two groups

组别 Category	合并 Merged	未合并 Unmerged	合计 Total
AVC 组 AVC group	93	40	133
NAVC 组 NAVC group	61	47	108
合计 Total	154	87	241

3 讨论

AVC 在老年人群中有较高的发病率，过去认为其是与年龄相关的退行性病变。近年来,研究者发现 AVC 是钙盐沉积在主动脉瓣细胞内和细胞外基质的复杂、主动并且可能是高度可调的过程,类似于骨和软骨形成过程中的骨化[6]。相关研究显示,一些与骨形成有关的物质可能与 AVC 的发生有关,其中包括基质小泡的形成、ALP 合成及其活性增加等[7,8]。此外,细胞凋亡也可能对主动脉瓣异位钙化的发生具有始动作用[9,10]。

一些临床研究发现，年龄并不是导致 AVC 的唯一影响因素,高血压、动脉粥样硬化、糖尿病、慢性肾衰竭等都能促进 AVC 的形成[11,12]。本研究表明,AVC 与 NAVC 组在年龄、高血压史、糖尿病史、吸烟史上的差异有统计学意义(P<0.05,表 1),表明 AVC 的发生与多种因素相关。一些研究提示,AVC 的发生发展过程与动脉粥样硬化类似,包括脂质沉积、慢性炎症、细胞凋亡等病理过程[13-16]。许多临床研究验证了 AVC 与冠心病具有相关性。Otto CM 等[17]研究发现,对 65 岁以上患者,AVC 显著增加了心源性死亡或心肌梗死的发生风险。

本研究结果显示,AVC 组冠心病的确诊率显著高于 NAVC 组,表明 AVC 与冠心病的发生密切相关。此外,进一步分析 AVC 与冠心病合并心律失常的关系，发现 AVC 患者冠心病合并心律失常检出率显著高于非 AVC 患者，表明 AVC 与冠心病合并心律失常也密切相关，但 AVC 是否是冠心病合并心律失常的独立预测因子尚有待于进一步的分析。

老年冠心病合并心律失常的预后相对较差,对其进行早期检测和预防,能够提高患者的生活质量和预后。超声心动图具有成本低、无创、准确、简单等优点,对 AVC 具有较高的指示性。因此,AVC 有望作为冠心病合并心律失常的高危患者有效的筛查指标。

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分泌影响最多，说明 BMSCs 亦可动员此类生长因子分泌，而益气活血中药则可刺激生长因子分泌增多，提示经穴注射 BMSCs 联合益气活血中药可促进 VEGF、G-CSF、SDF-1 的分泌，从而推测其可促进后肢血管的形成，这一结果尚需进一步实验来验证。

综上所述，辨证循经注射骨髓间充质干细胞联合益气活血中药具有显著促进细胞生长因子分泌的特点，对临床应用辨证循经注射干细胞发挥治疗性血管生成的作用具有指导意义，但具体疗效尚待进一步研究。

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