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ABSTRACTS IN CARDIOLOGY

Spasm and sudden death

Sudden deaths in which necropsy shows a structurally normal heart and no cause of death are a rare phenomenon but cause great distress to relatives who are trying to understand the event. Some insight into the cause of this phenomenon can be gained by investigating patients who have been resuscitated from out-of-hospital ventricular fibrillation (VF). The paper by Myerburg *et al* reports that coronary artery spasm in subjects without obstructive atherosclerotic disease can precipitate VF.

This condition could not be recognised by any pathological feature at necropsy but could be suspected if anginal type chest pain had been reported during life. Having said this, coronary spasm cannot be said to be common, occurring in no more than 1.4% of subjects who present with out-of-hospital VF. The further question of whether spasm can precipitate VF in subjects who have co-existent obstructive coronary disease remains to be answered.

MJ DAVIES

Life-threatening ventricular arrhythmias in patients with silent myocardial ischaemia due to coronary artery spasm

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Abstract

Background. Silent myocardial ischaemia in patients with coronary atherosclerosis is associated with an increased risk of adverse cardiac events, including sudden death. The relation between silent ischaemia and the initiation of potentially life-threatening arrhythmias has not been defined, however.

Methods. A part of a long-term study of sudden cardiac death, silent myocardial ischaemia, and ventricular arrhythmias, we prospectively followed 100 patients with documented coronary artery disease from clinical practice. Twenty patients with out-of-hospital cardiac arrest who had no demonstrable coronary artery lesions were investigated retrospectively for other structural causes of cardiac arrest and for clinical features. Associations between silent myocardial ischaemia, due to coronary artery spasm, and the occurrence and characteristics of life-threatening ventricular arrhythmias were studied by both invasive and noninvasive techniques.

Results. Silent myocardial ischaemia was associated with the initiation of life-threatening

ventricular arrhythmias in five patients with induced or spontaneous focal coronary artery spasm (or both). These patients were identified among a group of 250 patients at documented cardiac arrest who were examined between 1980 and 1991. In two of these patients, obstruction, rather than ischaemia, had been correlated with the onset of the ventricular arrhythmia. Only one of the five had an inducible arrhythmia during electrophysiologic testing. Flecainide, at the onset of a calcium entry blocking agent (verapamil) infusion, in conjunction against the ability of verapamil to provoke spasm was successful in preventing both the provocation of spasm and the initiation of all four patients who were tested.

Conclusions. Silent myocardial ischaemia due to coronary artery spasm can initiate potentially life-threatening arrhythmias in patients without flow-limiting structural coronary artery lesions. The role of silent ischaemic episodes, of both in the initiation of life-threatening arrhythmias in larger groups of patients with obstructive coronary artery lesions remains to be defined. *ON Line J Med 1992;326: 1801-7.*