Mini-symposium

Myocardial hibernation and heart failure: introduction

For many years the functional sequelae of chronic coronary artery disease (CAD) were considered essentially irreversible and amenable only to palliative treatment. For example, asynergy on the left ventriculogram implied infarcted myocardium or scar. Evidence accrued over the past three decades, however, indicates that chronic left ventricular dysfunction in patients with CAD is not necessarily irreversible. Two pieces of evidence led to a new concept of reversible myocardial dysfunction with obvious and important implications for patient care. Firstly, clinicians and surgeons observed that chronic myocardial dysfunction present before coronary bypass often reversed following revascularisation. Secondly, studies by Gorlin and colleagues using a catecholamine stress, showed that the asynergic left ventricle could improve its function with inotropic stimulation. This was the forerunner of dobutamine echocardiography, currently an important tool for detecting hibernating myocardium.

Utilising these pieces of information in 1978 Diamond and colleagues presciently suggested the possibility that “ischemic non infarcted myocardium can exist in a state of function hibernation”. Several years later Rahimtoola popularised the concept of hibernating myocardium and noted “there is a prolonged subacute or chronic stage of myocardial ischemia that is frequently not accompanied by pain and in which myocardial contractility and metabolism and ventricular function are reduced to match the reduced blood supply”. The debate on the pathophysiology of hibernating myocardium has attracted a lot of interest and, undoubtedly, has contributed significantly to stimulate new research on heart failure in patients with CAD. Although the debate is not over yet, some of the initial paradigms have been proven incorrect while new pathophysiological concepts have emerged.

The concept of hibernating myocardium has resulted in a significant contribution to clinical cardiology because it pointed out that chronic left ventricular dysfunction can be reversible. Indeed, hibernating myocardium is frequently detected in patients with ischaemic heart failure, where its identification has provided a new rationale for coronary revascularisation.

This mini-symposium will deal with hibernation and heart failure, discuss some of the fundamental concepts in assessing myocardial viability, and finally highlight the role of surgical revascularisation in relation to hibernation.

P G Camici

MRC Clinical Sciences Centre, Hammersmith Hospital, London, UK;
paolo.camici@csc.mrc.ac.uk

REFERENCES

Impact of multislice CT on coronary ostial stenosis in Takayasu's arteritis

M Nakamura and M Nagano

Heart 2004 90: 136
doi: 10.1136/hrt.2003.021030