fracture during their expected lifetime.

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3 Taylor RM, Livingstone S. Personal communication with the United Kingdom Heart Valve Registry.


Abnormal right heart filling after cardiac surgery

Sir,—Dr Wranne and colleagues demonstrated in figure 5 of their interesting study that the lateral aspects of the tricuspid annulus showed a more pronounced motion loss after cardiac surgery than those of the mitral annulus. As one of the possible explanations they suggested that the left ventricle was better preserved during surgery than the right ventricle. This theory is confirmed by an experimental study of the tissue electrolyte content in the right and left ventricular myocardium after normothermic open heart surgery in dogs. Cardiac arrest had been induced (a) by clamping the ascending aorta, (b) by aortic clamping with additional injection of a cardioplegic solution, (c) and by electrically induced fibrillation (with preservation of the coronary circulation). Tissue electrolyte content was determined before extracorporeal circulation was started, as well as after an hour of recovery from a cardiac arrest of 30 or 45 minutes. In all these forms of cardiac arrest, tissue water had increased and potassium and magnesium decreased. These changes were more pronounced in the myocardium of the right ventricle in all experimental groups. A decrease in potassium and magnesium content in tissue is an indicator of cellular injury.3,4 In the study in dogs the loss of these electrolytes was more pronounced in the myocardium of dogs with low cardiac output that had died with adequate circulation after cardiac arrest. Because the dogs did not have genuine cardiac surgery cardiac arrest was relatively short and hypothermy was not used. Hence we do not believe that the observed differences between the ventricles were predominantly caused by a mechanical impediment, more pronounced exposure of the right ventricle to room temperature, or heat radiation from the operating room lights, as suggested by Wranne et al. We attribute this phenomenon to a proposed difference in the susceptibility of the right and left ventricular myocardium to systemic disturbance,

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