Pathogenesis of Edema in Constrictive Pericarditis

Anand and colleagues' study of systemic metabolic effects of constrictive pericarditis is a model contribution to our knowledge of this disorder.1 Pericardiectomy decreased the mean plasma concentration of atrial natriuretic protein (ANP) substantially, although the decrease was statistically not significant and the levels did not entirely return to normal. Yet their preoperative ANP level (five times normal) and operative response differed from our results2 and those of others.3 I wonder whether the authors included patients with variants of effusive-constrictive pericardial disease? Whereas generalized constriction damps or eliminates the transmural pressure differences,4,5 residual effusion within a constriction5 might have allowed some expression of transmural pressure and hence some ANP stimulation. Unequal and partial constriction has long been known,6 and cases with residual intrapericardial fluid contents could qualify. Would the authors kindly comment on whether all of their cases had completely obliterated pericardial cavities? These questions are not raised in criticism of what is surely a landmark report, but rather for clarification of the material.

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References
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Reply

We thank Dr. Spodick for his kind comments and interesting suggestions and are glad of the opportunity to clarify our paper.

All our patients had complete obliteration of the pericardial cavity, so the increase in plasma ANP described after the removal of pericardial fluid does not apply.

Dr. Spodick and others have shown that, soon after pericardiectomy, there is also an increase in the plasma ANP that is presumed to result from a stretching of the atrial wall relieved of the restraining effects of a thickened pericardium. At that time the atrial pressures were still high.

Our patients were studied 3 months after surgery, by which time the atrial pressures had returned almost to normal. The average level of plasma ANP had decreased, although this was not significant and the final level was still above normal. In two of our patients, the final level was higher than before surgery. In our patients, removal of the pericardium from the atria was partial at most, and this may explain the variability of the effects of the operation on plasma ANP.

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