The authors reply:

To the Editor:

Dr. Friedman believes that uremic patients with elevated right-sided pressures and pericardial effusion but without pulsus paradoxus have congestive heart failure and/or hypervolemia and he doubts the existence of isolated "right-sided tamponade." He, therefore, believes that all such patients can be managed by volume depletion and/or vasodilator therapy rather than pericardiocentesis.

We agree with Dr. Friedman that there are uremic patients who have elevated right-sided pressures on the basis of congestive heart failure and/or hypervolemia. These patients may also have varying amounts of pericardial effusion associated with an elevated pericardial pressure. Although pericardial pressure may be elevated, it will not be equal to right ventricular filling pressures. This is well illustrated by our case 15, figure 1. Pericardiocentesis in such patients may result in a significant decrease in pericardial pressure, but right ventricular diastolic pressure will not fall, since the latter is not being determined by the compliance characteristics of the pericardium. We agree that these patients can be treated by volume depletion and/or vasodilator therapy rather than pericardiocentesis. The case illustrated by Friedman belongs in this category.

However, it is important to distinguish these patients from patients who have elevated right-sided pressures due to cardiac tamponade, yet do not have pulsus paradoxus. In this latter group (as illustrated in fig. 6 of the paper), pericardial pressures are not only elevated but are equilibrated with right ventricular diastolic pressures. Pericardiocentesis in such patients not only results in a significant fall in pericardial but also in right ventricular filling pressures. The fall in pressure is also associated with a significant increase in cardiac output. For instance, the patient whose pressure data was illustrated in figure 6 decreased the right ventricular filling pressure from 13 to 3 mm Hg and increased the cardiac output from 6.9 to 10.7 l/min with pericardiocentesis. If this patient's right-sided pressures were elevated due to congestive heart failure or hypervolemia, pericardiocentesis alone would not have resulted in a significant increase in cardiac output and a substantial fall in filling pressures. However, if this patient with tamponade were to be treated by volume depletion, there would have been hemodynamic deterioration with concomitant fall of right sided pressures as expected by Dr. Friedman.

In uremic patients with elevated right-sided pressures and pericardial effusion but without pulsus paradoxus, tamponade should be excluded before anticongestive measures are instituted. Noninvasive procedures such as echocardiography may be helpful in such instances. If the echo demonstrates a small effusion limited to a posterior collection, cardiac tamponade can be safely excluded. However, if the echo demonstrates a moderate-to-large effusion, invasive procedures, such as catheterization and pericardiocentesis, are justified since they are less dangerous than the blind institution of volume depletion and/or vasodilator therapy.

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Pulmonary Vein Wedge Angiography

To the Editor:

We read with interest the article, "Visualization of the Pulmonary Arteries in Pseudotrunccus by Pulmonary Vein Wedge Angiography" by Nihill and colleagues. We were surprised that he had overlooked the fact that we described this technique in 1976 to the British Cardiac Society in London. The technique was also described by us at the Association of European Paediatric Cardiologists in Ghent in June 1977. Before this paper we presented "Demonstration of Pulmonary Arteries by Contrast Injection into the Pulmonary Vein" at the European Society of Paediatric Radiologists. We had described the technique of demonstration by direct injection into the pulmonary vein and in the earlier part of this year in the British Heart Journal.

Our technique is somewhat different from the one described by Nihill and co-workers. We position the catheter just short of wedge position and, to get good opacification of the pulmonary arteries, make pressure injection. In our experience the hand injection does not demonstrate the anatomy as well as the pressure injection.

Although we were not aware of it when we started using our technique, we later learned that a similar method was used by Takamiya and his colleagues in two patients in 1973.

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Circulation. 1979;59:194-195
doi: 10.1161/01.CIR.59.1.194

The online version of this article, along with updated information and services, is located on the World Wide Web at:
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