if workers become overzealous in the amount of information they attempt to derive, particularly from systolic wave morphology. Our experience agrees with that of others in the finding that systolic events are subject to many variables, especially those relating to patient position and transducer position in relationship to the apex. A simple example of such variability is seen when a 5 cm bell is coupled to the Siemen's transducer and held firmly against the precordium without air leaks. By varying the position of the pickup, considerable alterations of the systolic wave configuration are produced.

Diastolic events, while subject to some variation, are more reproducible, and measurements of A wave height appear to be remarkably similar among many laboratories, including our own. This is the reason for our willingness to report our A wave findings in aortic stenosis. Barring a remarkable change of heart, we would not be willing to analyze systematically systolic wave morphology, for fear of giving not only apex cardiography, but ourselves, a "bad name."

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References
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VSD Following Myocardial Infarction

To the Editor:

We were most interested to learn of the successful results of Dr. Giuliani and his colleagues in the surgical treatment of ventricular septal rupture following myocardial infarction. We recently had a patient who was initially too ill for cardiac surgery, but who subsequently improved without further definitive treatment. This has led us to inquire into the natural history of the condition in relation to possible surgical treatment.

A 54-year-old man, previously in good health, was admitted with an anterosetal myocardial infarct in April 1975. Twelve hours after admission a loud pansystolic murmur and thrill developed, which were maximum at the left sternal edge, and which have persisted unchanged since.

This was associated with evidence of heart failure, which after his discharge required increasing diuretic treatment. He was investigated by cardiac catheterization in November 1973, at which time he was cachectic and had tricuspid incompetence with ascites and was very limited in his activities. Mean pulmonary artery pressure was 35 mm Hg and a left ventricular angiogram showed an apical septal defect; the pulmonary systemic flow ratio was 2.0:1. Coronary angiograms showed widespread atheroma in both coronary arteries with complete occlusion of the anterior descending branch of the left coronary artery. He was treated with further diuretics and bed rest, but made little progress and was therefore considered too great a risk for corrective surgery. In order to allow him to go home for Christmas, his ascites was drained of 15 liters of fluid, and it was felt that he was unlikely to survive more than a few weeks. Since then however, he has required no further hospital treatment. He has become increasingly ambulant (currently grade II dyspnea), there is no evidence of tricuspid incompetence, and no recurrence of his ascites. Diuretics have been continued in a reduced dosage and the cardiac size has decreased.

In the surgical treatment of ventricular septal rupture it has been suggested that the operation should be undertaken where possible six weeks to three months after the initial infarction, and this was the case in most of the patients reported by Dr. Giuliani and his colleagues. However, the results of surgery must then be compared, not with over-all mortality figures, but with those of untreated patients who have survived for the same period of time. Such information can be found in the numerous case reports of this condition before surgical treatment was available. The accompanying diagram (fig. 1) constructed from this data shows that the mortality curve for patients who survive for two months or longer is much less steep than that of the group as a whole. Thus the one-year survival for these patients is approximately 50% which is close to the 54% reported by Dr. Giuliani and his colleagues; both values are higher than the previous results of surgery (38%) which showed an actual reduction in the expected survival. This suggests that while surgery may improve symptoms, it does little at present to improve the over-all prognosis for this condition. In a sense it appears that patients who survive the initial catastrophe of septal rupture are already a highly selected group and their
outlook may depend more on the extent of their ischemic heart disease than on the hemodynamic effects of the ruptured septum.

It is clearly not possible to draw firm conclusions from the results of such small numbers of patients. Both medical and surgical case reports are unlikely to be truly representative of the natural history of the disease, since instances of patients who survive septal rupture are more likely to be reported than patients who do not. Nevertheless, on present evidence we feel that cardiac surgery is not greatly superior to medical treatment in improving the outlook of patients who survive more than two months after septal rupture. Our patient is now back at work and declines cardiac surgery. We do not feel justified in persuading him otherwise.

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References

The authors reply:
We appreciate receiving the letter from Dr. C. Davidson and Dr. C. L. Davidson calling attention to the important fact that the natural history of patients who survived the first two months of postmyocardial septal perforation remains unknown and without this data the evaluation of any intervention, whether medical or surgical, is difficult. In an attempt to obtain the answer to this question, at least in part, we are following patients prospectively, who, for one reason or another, do not proceed with surgical intervention and who have survived for a period of eight weeks. The case they report is interesting, however, I am sure that they would agree that a single case observation should not influence our total approach to a given problem. We concur in the analysis which they have displayed nicely in their graph but must disagree with the conclusion that "cardiac surgery is not greatly superior to medical treatment in improving the outlook of patients who survive more than two months after septal rupture." It is our opinion, based on our clinical experience, that the outlook of these patients is, indeed, significantly improved in terms of "quality of life." Our report includes patients who were functional Class IV on maximum medical therapy and whose pulmonary artery pressures exceeded the numerical values reported in their case. We recognize that the repair of the septal perforation does nothing for the underlying coronary disease and probably does not influence in any way the natural history of the disease. We are hopeful that studies of coronary anatomy and revascularization may improve the surgical results and longevity in some patients. The letter and data by Dr. C. Davidson and Dr. C. L. Davidson nicely reviews the problems related to this group of patients and again we thank them for their comments.

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TNG Effects on Asynery and Coronary Bypass Surgery

To the Editor:
The recently published study by Helfant et al. entitled "Nitroglycerin to Unmask Reversible Asynery," suggests that aortocoronary bypass surgery may not be indicated in a patient with segmental left ventricular asynery if the contractility in that segment does not improve following sublingual nitroglycerin. While no one can deny the potential benefit to the patient when improved ventricular function follows aortocoronary bypass grafting, the most common indication for this surgery remains angina uncontrolled by medical therapy or angina of rapidly worsening severity. The vast majority of patients considered for coronary artery surgery do not have overt symptoms or signs of congestive heart failure and the effect of nitroglycerin on asynergic left ventricular segments should play no role (pro or con) in defining the need for coronary bypass surgery in this large group of patients.

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Reference

The author replies:
Doctor Tyers raises some important points in his letter. Our study indicated that there was a good correlation between improved contraction following nitroglycerin and improved contraction with a patent bypass graft in 18 asynergic segments which responded to nitroglycerin and had patent grafts demonstrated similar postoperative improvement in 15. However, only two segments which were unresponsive to nitroglycerin had patent grafts and although the bypass procedure did not improve either of these segments, it was carefully pointed out in the paper that "although a positive response to nitroglycerin indicates the strong likelihood of a positive response to a patent bypass graft, the data are too fragmentary to draw conclusions on negative responses." It was nowhere stated that bypass may be indicated in a patient with asynery if contraction in that segment does not improve following nitroglycerin.

It is undoubtedly true that the most common indication

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C Davidson and C L Davidson

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