significant apical displacement which could not be appreciated, let alone quantitated, by any method which superimposes transapical axes. Further, if the ventricular silhouettes in two frames are bisected into equal halves and oriented with the same long axis, does this not ensure a symmetric contraction pattern for the normal ventricle?

These points aside, we compliment the authors on an original approach to an important (but difficult) question.

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References

The author replies:
We appreciate the comments of Drs. Sniderman, Marpole, and Fallen. Their work contributed much to our own thinking about detection and quantitation of regional left ventricular contraction abnormalities. We would agree that one's goals should determine the methods employed. Certainly we share their goal of using the method for quantitating the sequence as well as the amplitude of left ventricular wall motion. A secondary goal for us has been to display the results of the analysis in such a way that the wall motion abnormalities would be obvious to those who are not familiar with the fine points of the method. Thus, our main objection to the method of Drs. Sniderman, Marpole, and Fallen is that fixation of the junction of the aortic and mitral valves is tantamount to superimposing aortic valve outlines which may result in distortion and misdiagnosis of the site of contraction abnormality when ventricular silhouettes are superimposed (see fig. 4 in our article).

The apex is a problem but it seems to us that a true midline must be drawn. We, too, have noted instances of apical asynergy which would not be properly quantitated by this method. The answer, however, seems to us not to lie in changing the method of establishing the midline but rather in selecting more points around the ventricular silhouette so that the drawing of more hemispheres at the apex would detect and quantitate these abnormalities. This is tedious work and would probably best be accomplished using a computer program.

Finally, the comment about insuring a symmetric contraction pattern for the normal ventricle has validity but even so, as our figures illustrate, the basal portions of the inferior wall appear to have less amplitude of contraction than other segments as seen in the 30° right anterior oblique position.

We do not mean to imply that our method should be accepted as the final answer to detection and quantitation and display of regional left ventricular wall motion abnormalities. Our main aim was to raise some fundamental considerations about techniques which have been used in this type of analysis and to propose a method which we have found useful in our laboratory. We would hope that this type of exchange would eventually result in the establishment of a more uniform method of analyzing left ventricular wall motion.

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Reference

Postoperative Myocardial Infarction
To the Editor:
Risk factors leading to myocardial infarction and heart failure following general surgery were analyzed in a group of 334 operations performed on 214 patients with old myocardial infarctions. Results seem to support the theses developed by Drs. E. Braunwald and P. R. Maroko, who explain reduction and augmentation of infarct size by influences on the balance between myocardial oxygen supply and demand. Postoperative myocardial infarction and heart failure or cardiogenic shock, both complications with an impressively high mortality rate, occur more frequently 1) in patients with advanced coronary artery disease — indicated by additional hypertension and/or cerebrovascular and arterial occlusive disease and/or present or past heart failure (the fraction of these "cardiovascular risk patients" in general surgery is continuously increasing); 2) after reduction of myocardial oxygen supply — indicated by hypotension during operation or anemia after operation; 3) in coincidence with an elevated oxygen demand, predominantly during the early postoperative period when catecholamine levels are increased.

Based upon these results, and in full agreement with the experimental evidence outlined by Drs. Braunwald and Maroko, careful replacement of blood.

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Letter: Postoperative myocardial infarction.

E Vormittag

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