# Correspondence

*British Heart Journal*, 1978, **40**, 823

## Left ventricular apical thin point

Sir:

It was with much interest that I read the article by Bradfield *et al.* published in *British Heart Journal* (1977), **39**, 806-809, presenting detailed histological information and precise measurements of the thickness of the thin point of the left ventricle.

This of course is an elegant natural example of 'a well-known mechanical formula' (Helmholtz, 1868), so well illustrated by R. H. Woods, a throat surgeon and demonstrator of anatomy in Trinity College, Dublin (1892), namely the theorem of Laplace (Burton, 1957).

It remains to be seen whether the time course of systole really enables the left ventricular apical thin point to withstand the intracavitary pressure.

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and
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**References**

Burton, A. C. (1957). The importance of the shape and size of the heart. *American Heart Journal*, **54**, 801-810.

Helmholtz, H. (1868). Die Mechanick des Gehörknöchelschen und des Trommelfells. *Archiv. für die gesamte Physiologie*, **1**, 48.

Woods, R. H. (1892). A few applications of a physical theorem to membranes in the human body in a state of tension. *Journal of Anatomy and Physiology*, **26**, 362-369.

This letter was shown to the authors who reply as follows:

Sir:

We thank Professor Calabresi for his interest and particularly for bringing Burton's paper to our attention.

Electrophysiologists showed a long time ago that the apical region of the left ventricle was activated before the basal areas (Scher, 1964; Durrer *et al.*, 1970). The apical contraction would thus close off the thin point early in systole, so protecting it from the higher pressures generated during ventricular systole.

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**References**

Durrer, D., Van Dam, R. Th., Freud, G. E., Janse, M. J., Meijler, F. L., and Arzbaecher, R. C. (1970). Total excitation of the isolated human heart. *Circulation*, **41**, 899-912.

Scher, A. M. (1964). The sequence of ventricular excitation. *American Journal of Cardiology*, **14**, 287-293.