Echocardiographic diagnosis of primitive ventricle with two atrioventricular valves

Sir,

Dr. Beardshaw and colleagues are to be congratulated on a further excellent correlation between anatomy and echocardiography in complex congenital heart disease (*British Heart Journal*, 1977, 39, 266).

I would like only to sound a soft caveat on two of the conclusions made in the echocardiographic study.

The unusual posterior excursion of the septal leaflet of the anterior atrioventricular valve in primitive ventricle cannot safely be used to differentiate this condition from congenitally corrected

transposition. Just such motion may occasionally be recorded in corrected transposition when the echo transducer is positioned low and close to the sternal edge. The septum becomes indistinct and the posterior leaflet of the right-sided mitral valve appears to dip back into the left ventricle (Fig. 1). This may perhaps be explained by the relatively posterior siting of the larger mitral leaflet when this valve is rightsided.

In carrying out a simple valve count in small infants, when a full-scale deflection of 5 or 6 cm is often used in the recorder, care is necessary before interpreting fast-moving echoes as originating from

Fig. 1 Echocardiograms of anterior atrioventricular valve showing unusual posterior excursion of posterior leaflet. Congenitally corrected transposition in a boy of 7 years with no defect of the ventricular septum (angiographic diagnosis).

Fig. 2 Spurious echoes suggestive of a second (posterior) atrioventricular valve where none exists (arrows). (A) Infant with single ventricle, mitral atresia and truncus arteriosus (necropsy diagnosis). (B) Edited scan in an infant with common atrium, single atrioventricular valve, single ventricle and pulmonary atresia (necropsy diagnosis).

an atrioventricular valve (I refer particularly to the left atrioventricular valve illustrated by the authors in their Fig. 7).

Similar echoes may be recorded from structures other than atrioventricular valves, giving the appearance of two valves where only one exists (Fig. 2 A and B).

To determine the presence of two atrioventricular valves with any degree of certainty requires the recording of echoes with the classical configuration of atrioventricular valve movement.

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This letter was shown to Dr. Beardshaw and colleagues who reply as follows:

We are most grateful to Dr. Wright for his comments on our paper. He correctly stresses that the diagnosis of primitive ventricle by echocardiography is not straightforward. We were of course aware that unusual posterior excursion of the septal leaflet of the anterior atrioventricular valve could also occur in congenitally corrected transposition, and indeed we have collaborated with Dr. Wright in presenting a paper to the Cardiac Society making

this point (Beardshaw *et al.*, 1976). The echo behind the atrioventricular valve in Fig. 2A is of interest and presents an unusual appearance. It certainly shows morphology as near that of the anterior cusp of an atrioventricular valve as one could expect at the heart rate, and raises the possibility that it might have originated from the atretic posterior atrioventricular valve. We also have examples of recordings of this type. Fig. 2B stresses the importance of recording echoes from both atrioventricular valves simultaneously if the diagnosis of primitive ventricle with two atrioventricular valves is to be confirmed.

Yours etc.

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Reference

Beardshaw, J. A., Gibson, D. G., Wright, J. S., Pearson, M. C., and Anderson, R. H. (1976). Echocardiographic diagnosis of corrected transposition (abstract). *British Heart Journal*, 38, 878.