LETTERS TO THE EDITOR

Letters to the Editor will be published, if suitable, and as space permits. They should not exceed 1,000 words (double spaced) in length, and may be subject to editing or abridgment.

Classification of Chordae Tendineae

To the Editor:

An article by Drs. Roberts and Cohen (Circulation 46: 138, 1972) contains the following statements relative to the classification of chordae tendineae: "Each primary or first-order chorda tendinea divides into an average of two secondary or second-order chordae tendineae. Each second-order chorda divides into two or three tertiary or third-order chordae tendineae which attach to the mitral leaflet. Thus, for each primary chorda an average of five tertiary chordae result, and each head of a papillary muscle anchors two first-order and 10 third-order chordae."

This description of primary, secondary, and tertiary chordae tendineae conflicts with previous definitions in the literature. Chordae tendineae attaching from the papillary muscle to the free edge of the mitral leaflet are primary or first order. Those that arise from the papillary muscle and become incorporated into the ventricular surface of the leaflet a few millimeters away from the free edge are secondary or second order. Tertiary or third-order chordae, by definition, do not have any connection whatever to papillary muscles but run from the ventricular wall to the undersurface of the posterolateral mitral leaflet.

I believe that the authors are describing branching of first- and second-order chordae tendineae. Their points relative to that description are well taken. However, their nomenclature in this instance is incorrect and potentially misleading.

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References
1. ROBERTS WC, COHEN LS: Left ventricular papillary muscles: Description of the normal and a survey of conditions causing them to be abnormal. Circulation 46: 138, 1972
2. BROCK RC: The surgical and pathological anatomy of the mitral valve. Brit Heart J 14: 481, 1952

Acquired Right Bundle-Branch Block and Left Anterior Hemiblock in Ostium Primum Atrial Septal Defect

To the Editor:

I am not in agreement with the electrocardiographic diagnosis made by Dwain L. Eckberg et al. in Circulation (45: 658, 1972):

(1) The QRS axis in the 8-15-66 tracing is not enough to assure the presence of left anterior hemiblock (LAH) (fig. 1).
(2) The first half of the QRS interval is not greater than the −15° even though the authors state it is about −60° (fig. 2).

Intermittent RBBB without LAH. (A) Leads I and II. (B) Leads II and V3. (C) Leads III and V4 simultaneously taken with two ECG recorders. A slightly higher speed is observed in one of the recordings. RBBB disappears in the presence of bradycardia. So does r' in V2. An evident decrease in the S wave in leads I and II is also observed. cs = carotid sinus massage.

Figure 1
3. The slurred S wave in lead II is given by the right bundle-branch block (RBBB) without LAH.
4. The S wave in leads III and aVF does not increase its depth between the third and fourth ECG. On the contrary, it decreases when the supposed LAH appears.
5. The q wave cannot be attributed to LAH since it is present in the four tracings with similar characteristics.
6. The first-degree A-V block appears before the RBBB. Therefore, the three-fascicular block cannot be stated since it implies RBBB and LAH with the first-degree A-V block.
7. The LAH diagnosis in congenital cardiopathies is final. However, in this case a doubt arises, especially when the signs are simultaneous with the RBBB.

Were the RBBB intermittent or were VCG of these tracings available, these statements would be proved.1 Rosenbaum et al.,2 whose quotation is surprisingly missing from this paper, show an excellent example of intermittent RBBB without LAH. The QRS in the limb lead as well as the QRS axis have an extraordinary similarity with the case discussed by Dr. Eckberg et al.

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References

The authors reply:
To the Editor:
We thank Dr. Pedraza for his critical review of our article.
We appreciate that diagnostic criteria for left anterior hemiblock under these conditions may be questioned: however, pathologic confirmation of electrocardiographic diagnosis of intraventricular conduction disturbances is still incomplete, and criteria for left anterior hemiblock associated with right bundle-branch block are still evolving. Our case satisfies minimal diagnostic criteria as advanced by Rosenbaum and co-workers1 (as referenced in our article), and our patient’s final electrocardiogram is almost identical to an example published by that group2 (patient 3). In their large series, right bundle-branch block alone did not lead to left-axis deviation unless the mean frontal QRS axis prior to the development of block was less than 0°. In our patient, the mean QRS axis was about +20° prior to the progression of conducting disturbances.

There has been considerable debate in the literature over whether or not the conduction disturbances in ostium primum atrial septal defect are congenital or develop after birth. We presented an adult patient with first-degree A-V block and a documented ostium primum defect who acquired right bundle-branch block, left-axis deviation, and transient complete A-V block; to the best of our knowledge, this has not been reported previously.

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References

Sinoatrial Node Entrance Block

To the Editor:

The stimulating paper by B. N. Goldreyer and A. N. Damato (Circulation 44: 789, 1971) calls for some comments.

The authors state: "In all patients, as the A1-A2 interval was shortened from 100 to 70% of the A1-A2 interval, the A2-A3 interval became progressively longer. This lengthening corresponds to a linear depression of the sinus pacemaker following these relatively late APD's." I submit that the tail end of the curve reproduced in figure 2 of the article does not reflect a depression of the pacemaker because it plots atrial intervals termi-
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