Interesting Electrocardiogram

Right Bundle Branch Block with Q Waves in V1 and V2

M. Irené Ferrer, M.D.
Consultant in Cardiology Metropolitan Life Insurance Company
Professor Emeritus of Clinical Medicine, College of Physicians and Surgeons, Columbia University
Consultant Electrocardiographer, Presbyterian Hospital, Columbia Presbyterian Medical Center, New York, N.Y.

A review of this tracing of a 79-year-old man, taken in a preoperative routine evaluation when he entered the hospital for surgery, allows us to consider the evaluation of complete Right Bundle Branch Block (RBBB) in asymptomatic patients. The rhythm in the ECG is normal sinus at 75/min. with a prolonged PR interval (0.25 sec. in lead II). There are also atrial premature beats (APC), some of which are blocked and followed by a pause and a junctional escape beat (whose rhythmicity is 43/min.). Such a sequence is marked with an arrow in V4. A conducted APC is marked in lead II.

The IV conduction defect is of more serious nature. Note that the tracing shows complete RBBB with a marked left axis deviation (axis = -68°) indicating left anterior fascicular block (LAFB). Of special importance in this record is the presence of wide Q waves in V1 and V2 permitting the diagnosis of anteroseptal myocardial infarction. In summary, there is tri-fascicular block (RBBB, LAFB and prolonged PR). The etiology of this IV conduction defect is the anteroseptal myocardial infarction. Thus coronary artery disease is present.

Were this record to be submitted for insurance purposes there would be little problem. However, the evaluation of an electrocardiogram showing only RBBB has undergone considerable change in recent years. A recent review of this subject from the Gerontology Research Center, National Institute on Aging, National Institutes of Health emphasizes firstly that RBBB does not constitute a homogeneous clinical disorder, and prognosis essentially depends on the nature and extent of the underlying etiology. The study was made (on men only) on long term prognosis (8.4 years) and addresses the question whether RBBB of itself presages subsequent cardiovascular disease and mortality. They found that cardiovascular morbidity and mortality are not increased in asymptomatic men with RBBB as compared to matched controls. The benign nature of simple RBBB is thus reaffirmed. However, although no increased risks were noted in uncomplicated RBBB, if marked left axis deviation with or without a prolonged PR interval appeared in later life there appears to be the likelihood of primary conduction system disease (calcification and sclerosis locally in the IV septum). This condition is age-related. Nevertheless, it is a benign disorder in no way related to coronary disease.

The solution in this tracing is simple as coronary disease is clearly present. The evaluation of uncomplicated RBBB requires considerable investigation in order to avoid any excess rating.

Reference


Erratum

Regrettably a typesetting omission and an error occurred in the text of Dr. Ferrer's Interesting Electrocardiogram in the previous issue of JIM: Pre-excitation and Cardiomyopathy (with a note on Myocardial Bridges), Vol. 21, No. 2, 1989 page 49.

In the second paragraph, the sentence beginning on line 20 should have read: "Since there is no WPW pattern present (which distorts the record) the ST-T abnormalities in Leads II, III, AVF, and V3-V6 emerge as evidence of underlying myocardial disease. The electrocardiogram of 8/1/72 (on no digitalis) differs very little from that of 4/14/83 taken years later."