

Bradycardia in a Man With Hypertension

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A man without cardiac symptoms was found to have a slow irregular pulse, and an electrocardiogram revealed sinus bradycardia with escape-capture bigeminy. He was taking verapamil, clonidine, and hydralazine for hypertension. The verapamil was discontinued; he returned to normal sinus rhythm and was discharged on the second hospital day. © 2019 Elsevier Inc. All rights reserved. (Am J Cardiol 2019;124:1316)

A 59-year-old man with high blood pressure and no cardiovascular symptoms went to his primary care physician for an injection to relieve his knee pain. The patient's pulse was slow and irregular, and he was referred to the hospital. On his arrival there an electrocardiogram showed an irregular bradycardia (Figure 1).

Escape-capture bigeminy occurs because the primary cardiac rhythm, here sinus bradycardia, is slow allowing a subsidiary rhythm, here a junctional escape rhythm, to emerge. Non-dihydropyridine calcium-channel blockers are common causes of sinus bradycardia, especially when used

together with clonidine.^{1,2} This patient was taking verapamil 180 mg bid, clonidine 0.1 mg tid, and hydralazine 100 mg tid for his hypertension. The verapamil was discontinued; normal sinus rhythm returned; and the patient was discharged on the second hospital day.

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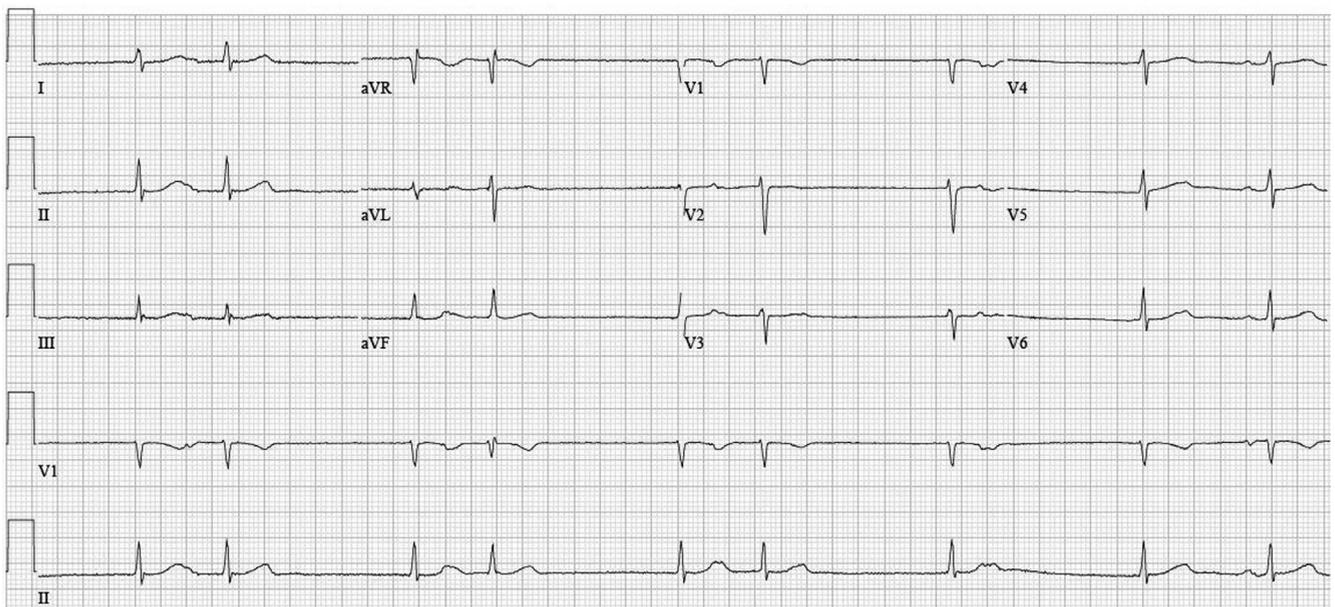


Figure 1. Electrocardiogram recorded on admission of a 59-year-old man with a slow pulse. The overall heart rate is 55 beats/min. There actually are 2 rhythms: sinus arrhythmia and bradycardia at a rate of 29 beats/min and a junctional escape rhythm at a rate of 43 beats/min. Together the rhythms are in a pattern of escape-capture bigeminy. The melding of the 2 rhythms is not completely uniform, and the fourth P wave arrives so soon after the fourth escape complex that it finds the atrioventricular conduction system refractory and is not conducted to the ventricles. The second P wave is only slightly early but finds the right bundle branch, which has the longest refractory period of any portion of the atrioventricular conduction system, relatively refractory and is conducted to the ventricles with a right ventricular conduction delay.

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