Atrioventricular Dissociation Mimicking Pulsus Paradoxus and Palsus Alternans

Hiromi Kayamori, Takeshi Kashimura, Masato Oda and Makoto Kodama

Key words: atrioventricular dissociation, pulsus paradoxus, pulsus alternans, acute myocardial infarction

(Intern Med 51: 3439-3440, 2012)
(DOI: 10.2169/internalmedicine.51.8832)

A 72-year-old woman presented at the hospital with cardiogenic shock caused by acute inferior myocardial infarction complicated with ventricular septal rupture. Electrocardiography showed an atrioventricular junctional rhythm of 30-40/min and intravenous dobutamine elevated the junctional rate and the blood pressure. She was sedated by intravenous anesthesia and ventilated at a fixed rate of 12 per minutes, and her arterial pressure showed a slow fluctuation (Picture A). The fluctuation mimicked pulsus paradoxus, as the junctional rate decreased gradually, (Picture B) and then, pulsus alternans (Picture C). Strong beats were preceded by a clear P wave (Picture A-C insets). This was the case even with an ectopic beat (Picture C asterisk).

Pulsus paradoxus with cardiac tamponade (1) and pulsus alternans with severe left ventricular dysfunction (2) can be caused by acute myocardial infarction; however this case simply shows the importance of proper atrioventricular coupling or preload in maintaining hemodynamics in a critical heart disease. The ventricular septal rupture may have contributed to the arterial pressure fluctuation by decreasing preload during inappropriately long atrioventricular intervals.
The authors state that they have no Conflict of Interest (COI).

References