

CASE REPORT

The “atrial dancing”: echocardiographic diagnosis of electrocardiographic query

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Summary. The direct observation of the cardiac structure through the echocardiographic exam offers, in some cases, the advantage to resolve difficult diagnostic definition. In this paradigmatic case we emphasize as an accurate observation of the echocardiographic figures and movies can resolve also an electrocardiographic query. (www.actabiomedica.it)

Key words: arrhythmia, echocardiography, tissue doppler

The case

A 82 years old woman presented with chest pain, dyspnea and tachycardia. To investigate her clinical status electrocardiogram and echocardiogram was performed. The electrocardiographic exam shows a regular and equidistance presence of the QRS ven-

tricular complex but the P wave detection result not clear and apparently double respect the QRS complex. Heart rate was 116 b/min. (Figure 1A). The echocardiographic exam was inconclusive in finding structural abnormalities, but a regular and so frequent atrial movement was detect in a 3 chambers apical window. Off-axis 5 chamber view shows the regular and rapidly

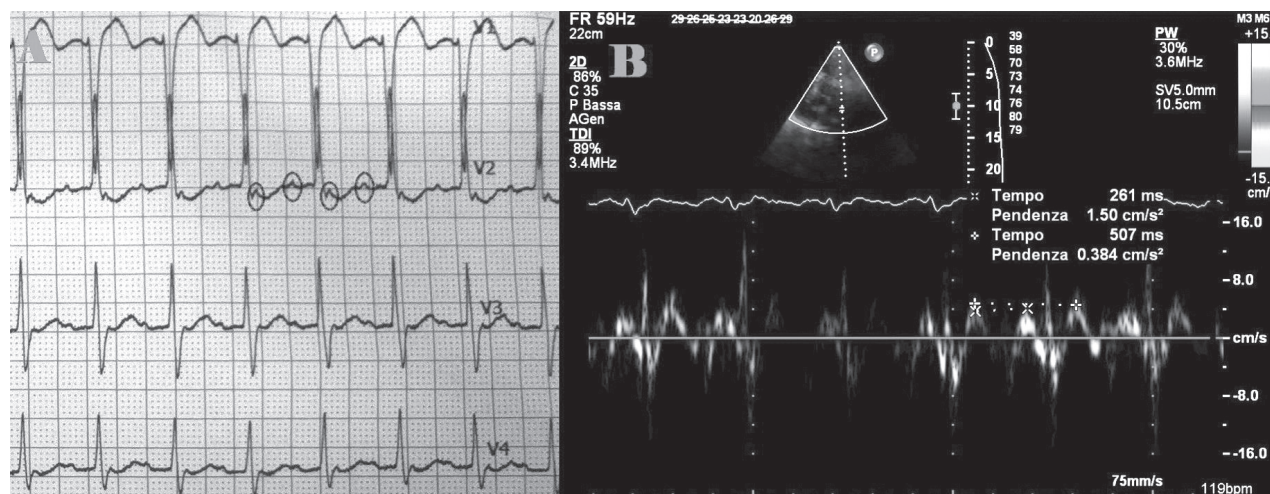


Figure 1. Electrocardiographic exam shows a regular and equidistance presence of the QRS ventricular complex but the P wave detection result not clear and apparently double respect the QRS complex (circles). On Tissue Doppler we observe that the distance from each atrial contraction is regular and comparable with the electrocardiographic aspect

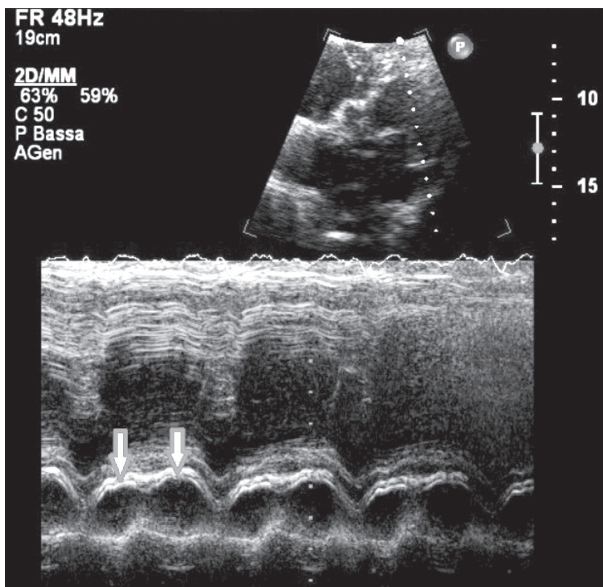


Figure 2. The rapid atrial movement produce two different size of atrial tele-diastolic volume (arrows) detected by M-mode analysis

auricle contraction in opposite of the slower left ventricular rate. Indeed the M-mode analysis shows two different size of atrial tele-diastolic volume: a small size (after ventricular contraction) that conditioning a minimal atrial filling; the second (after the atrial contraction) is greatest enabling a more efficient atrial filling. (Figure 2). Tissue Doppler of the atrial auricle shows the relationship between the atrial and ventric-

ular contraction: in particular we note that the distance between each atrial contraction is regular and comparable with that found in the electrocardiographic exam (Figure 1B). The echocardiographic aspect suggest an atrial tachycardia with 2:1 ventricular rate.

Discussion

Some arrhythmias may be so difficult to recognize. Echocardiographic findings sometimes shows characteristic pictures that are able to identify particular pathogenetic condition thanks its directly view of the cardiac structures. This case suggest a particular, didactic view of echocardiographic approach. This non invasive and economic approach, through an accurate images analysis, offers the advantage to identify cardiac pathogenetic condition even when the so called "gold standard" technique doesn't leads to the appropriate definition.

Received: 10 February 2015

Accepted: 20 February 2015

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