ATRIAL TACHYARRHYTHMIA TERMINATION WITH PACEMAKER. RESPONSE TO THE EDITORIAL
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Modern medical technology evolves rigorously every year. More and more people around the world now have implanted pacemakers saving their lives and improving its quality. Whereas previously the pacemaker was only effective for bradycardia, today manufacturers claim to treat tachyarrhythmia.

The role of atrial fibrillation (AF) prophylaxis and atrial tachyarrhythmia (ATA) control algorithms in reducing AF burden and the risk of its transition to a permanent form is not questioned, while the ability of the pacemaker to control AF raises many questions [1].

This article gives an example of atrial tachyarrhythmia control using the antitachycardia pacing (ATP) algorithm [2]. M.M.Medvedev in his editorial [1] quite rightly pointed out that the intervals between P or F waves fluctuate in a fairly narrow range of 220-280 ms, and there are no pronounced changes in the shape of atrial complexes. The average interval between P or F waves before antitachycardia pacing is 244 ms, which corresponds to an atrial contraction rate of 246 bpm. This allows ATA to be treated as atrial tachycardia (AT) or atrial flutter, but not as AF.

A more detailed evaluation of the data obtained from the programmer of the indicated ATA arrest case (Fig.1) allows the presence of atrial beats at intervals of up to 170 ms, corresponding to 352 bpm, which translates into a more organised arrhythmia, after which an ATP is applied. The graph shows an episode of ATA onset, with the atrial rhythm accelerating above 300 beats per second.

This situation could be seen as a transformation of AF into a more organized rhythm (AT or atrial flutter), and the application of successful ATP at this very moment, followed by the activation of the Atrial Stimulation Preference algorithm. The restoration of sinus rhythm prevents the development of a more prolonged episode of AF. In this case we can talk about indirect control of AF, while there is no direct control of "true" AF with the help of the pacemaker.

Of note is the presence of a far field phenomenon - the perception of ventricular contractions by the atrial canal, which is also clearly visible on the endogram after recovery of the atrial rhythm [2] (the sensitivity of the atrial canal was changed at the follow-up examination of the patient).

The latest generation of pacemakers has quite extensive programming options about ATA detection and therapy. By default, the pacemaker distinguishes between an AT/AF Interval of 350 ms (171 bpm), which corresponds to atrial flutter, and a Fast AT/AF Interval
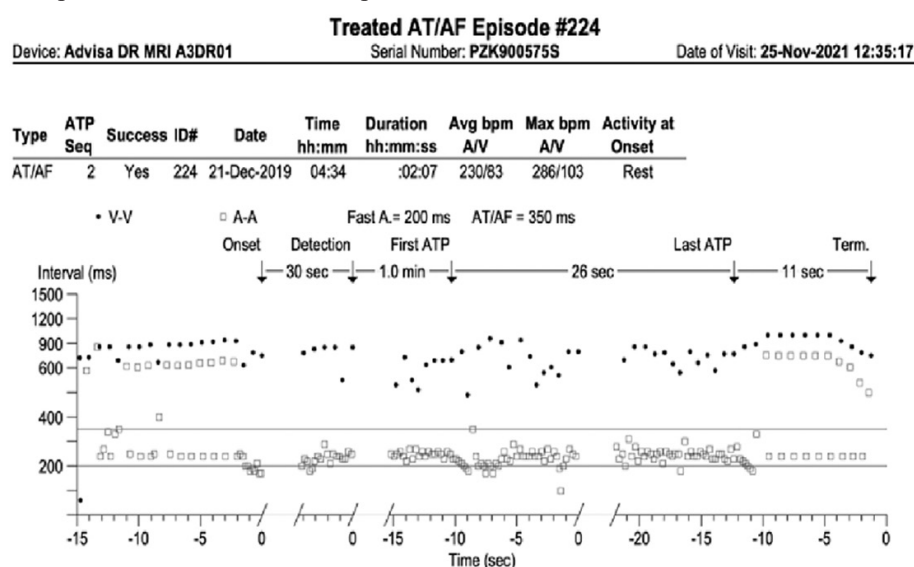

Fig. 1. Schedule the onset and management of atrial tachyarrhythmia.

of 200 ms (300 bpm), which may be regarded as AF [3]. These parameters are programmable and can be changed by the doctor.

In addition, the duration of the ATA episode and other atrial rhythm parameters at which ATP is activated, the minimum interval between atrial contractions during ATP, the tracking of rhythm changes, insurance ventricular stimulation are programmed, various ATP protocols (Burst+, Ramp) and parameters of each protocol (number of pulses, intervals, number of sequences, interval reduction step and so on) are available.

I believe that furthermore detailed research into algorithms for prevention and treatment of ATA is required to assess specific predictors of ATP efficacy and the necessary pacemaker settings for both AT detection and parameters for arresting algorithms.

REFERENCES

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