

RIGHT ATRIAL ECTOPIC RHYTHM

(Case report)

S. Cotoi

The slow atrial rhythm is an extremely rare ectopic atrial mechanism, originating from the left atrium and very seldom from the right atrium (1).

Only a few cases with right atrial rhythm have been reported in elderly people with organic heart disease and congestive heart failure (2).

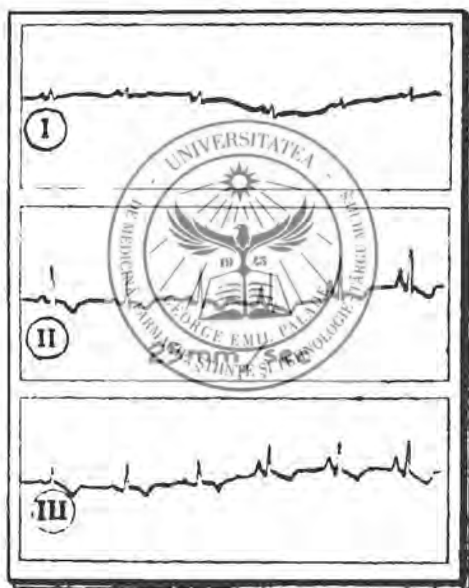


Fig. 1: Simultaneous recording of leads I, II and III with a paper speed of 25 mm/sec. The first three complexes are sinusual, the last three right atrial ectopic rhythm.

The axis, the configuration and the rate of the ectopic P waves are very similar to that of the sinus rhythm, and because of this similarity the right atrial rhythm is impossible to be diagnosed unless it occurs alternately or periodically in the presence of sinus rhythm (2).

Our aim is to present such a rare arrhythmia in a patient investigated through biatrial electrograms.

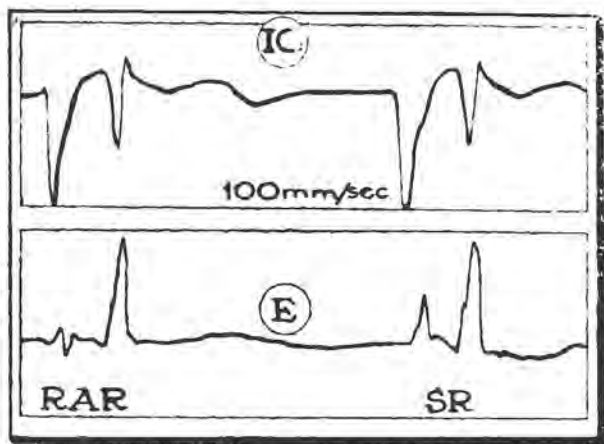


Fig. 2: Simultaneous recording of right atrial intracavitary 100 mm/sec. The first complex is right atrial rhythm (RAR), electrogram (IC) and esophageal electrogram (E), paper speed the second one is sinus rhythm (SR).

In a 57-year-old man with ischemic heart disease, chronic cor pulmonale and congestive heart failure, on standard electrograms the sinus rhythm with a rate of 67 per minute is replaced from time to time by a new rhythm slightly faster, about 74 per minute and with slowly different shape and axis of the P waves, as shown in figure 1.

In fasting nonsedated state a pentapolar electrode esophageal catheter was inserted into the esophagus and then using a percutaneous technique a tripolar electrode catheter was placed in the right atrium (3).

Using the simultaneous biatrial electrogram recording, it is possible to see that the right atrial electrogram is very similar during ectopic to that of the sinus rhythm, the difference being only on esophageal electrograms, as shown in figure 2.

Discussion

This peculiar atrial ectopic rhythm can be differentiated from left atrial rhythm which is found in young and almost healthy patients, with the following electrocardiographic criteria: inverted P waves in leads II, III, aVF, V6 and upright P waves in aVR. A useful criterion is the precession of left atrial depolarization observed on biatrial electrograms (3).

An atrial dissociation or retrograde conducted P waves can be easily excluded through the intracavitary and esophageal recording. Conduction disturbances in the main atrial internodal tracts may be also discarded; the unchanged P—R interval and the faster rate of the new rhythm show the ectopic origin of the arrhythmia.

On biatrial electrograms it is possible to state that the origin of this ectopic rhythm is inside the right atrium in the proximity of the sinus node.

The right atrial ectopic rhythm reported in the literature was found only in elderly people with diseased hearts and congestive heart failure, as in our patient. The clinical significance of this atrial rhythm is still uncertain (1).



References

1. Chung E. K.: Principles of cardiac arrhythmias, Williams-Wilkins, Baltimore, 1972;
2. Chung E. K., Thomas J.: Dis. Chest. (1967), 51, 317;
3. Cotoi S., Repolski M., Carasca E., Incze A.: Rev. Roum. Méd. Int. (1981), 19, 251.

Received on 27th of June, 1981
