

OPIS PRZYPADKU

## Bradycardic atrial flutter – ablation and pacemaker- what is the optimal treatment?

Trzepotanie przedsionków z wolną akcją serca- ablacja i stymulator- czy to optymalne leczenie?

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ABSTRACT

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We present a case of a 68-year-old man with a history of myocardial infarction, and CABG procedure in the past who experienced bradycardic atrial flutter manifested by pre-syncope events and palpitations. The patient underwent a successful procedure of a catheter RF ablation with a subsequent implantation of a DDDR pacemaker. In the article, we discuss a need for specific treatment recommendations in case of atrial flutter with slow ventricular response.

KEY WORDS

bradycardic atrial flutter, RF ablation, DDDR pacemaker, A-V block

ABSTRACT

Przedstawiamy przypadek 68-letniego mężczyzny po przeżytym zawale mięśnia serca, po operacji pomostowania tętnic wieńcowych, u którego rozpoznano trzepotanie przedsionków z wolną akcją serca manifestujące się jako stany przedomdleniowe z okresowym uczuciem kołatania serca. Chorego poddano skutecznemu zabiegowi ablacji trzepotania przedsionków, a następnie implantowano stymulator DDDR. W artykule omówiono potrzebę sformułowania określonych wytycznych postępowania w przypadku obecności trzepotania przedsionków z wolną akcją komór.

SŁOWA KLUCZOWE

Trzepotanie przedsionków z wolną akcją komór, ablacja RF, stymulator DDDR, blok przedsionkowo-komorowy

ADRES

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## INTRODUCTION

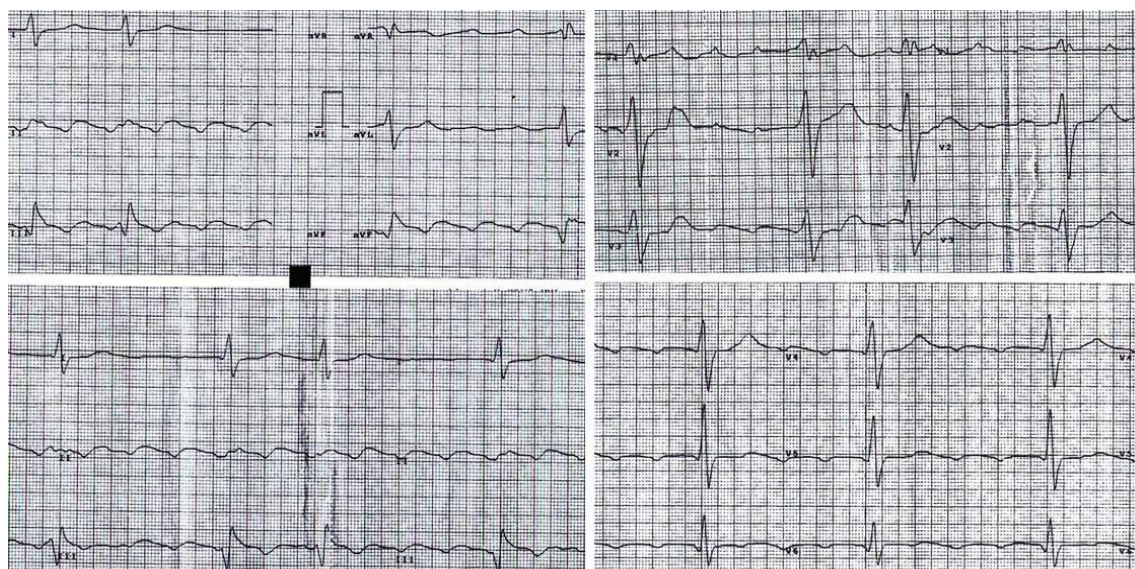
It is known that slow and regular ventricular response in case of atrial fibrillation or flutter (AFL) suggests a complete block [1]. In patients with AFL higher degrees of AV block can occur in case of AV nodal disease, increased vagal tone, or when certain drugs are in use [2]. Catheter ablation represents a chance for long-term cure for patients with atrial flutter, however, according to the guidelines, it is not entirely clear how to treat a patient with slow ventricular rate, suggesting atrio-ventricular disturbances.

## A CASE DESCRIPTION

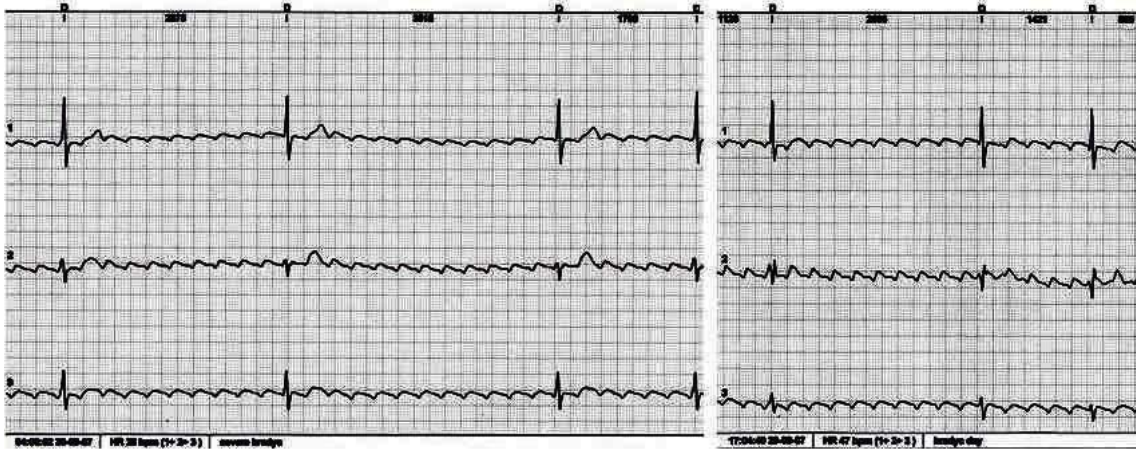
A 68-year-old man with a history of infero-posterior and lateral wall myocardial infarction, CABG procedure, arterial hypertension and one unsuccessful attempt of electrical cardioversion undertaken in past was admitted to the out-patient clinic. He was treated with acenocumarol for persistent atrial fibrillation, slow-release metoprolol 12,5 mg, perindopril 5 mg and simvastatin 20 mg. The patient complained of dizziness, pre-syncope concomitant with palpitations. The ECG showed slow atrial flutter (AFL) with the slow rate of F waves 200-210/min and irregular ventricular rate of 55-110/min, pathological Q waves in leads III and aVF, QS in lead II, QRS of about 100 ms with an incomplete RBBB pattern (Fig. 1).

In 24-hour Holter monitoring carried out on betablocker treatment the numerous pauses (> 2000/24 h) during night and day hours were identified, however the longest one of 3515 ms was present during night time. The number of pauses was increasing from 6 pm and they were present till 8 am. Mean heart rate in 24 Holter monitoring was 57/min, minimal and maximal rates: 25/min and 112/min, respectively. Throughout Holter recording atrial flutter waves with varying A-V conduction (from 2:1 to 12:1) were seen (Fig. 2). Echocardiographic examination revealed postero-inferior and lateral hypokinesia with an ejection fraction of 40%. The left ventricle end-diastolic and end-systolic diameters were 68 mm and 56 mm, respectively and the diameter of the left atrium was 45 mm.

Metoprolol was temporarily stopped, and then a patient underwent atrial flutter ablation within right atrium isthmus, with a restoration of a sinus rhythm (Fig. 3). Electrophysiologists implanted a DDDR pacemaker to prevent the patient from bradycardia and potential A-V disturbances three weeks after the ablation procedure without any additional studies. At this moment slow release metoprolol was again initiated together with all the aforementioned treatment. Eventually, the patient presented well, however a complication of a local thrombophlebitis in the left arm occurred.

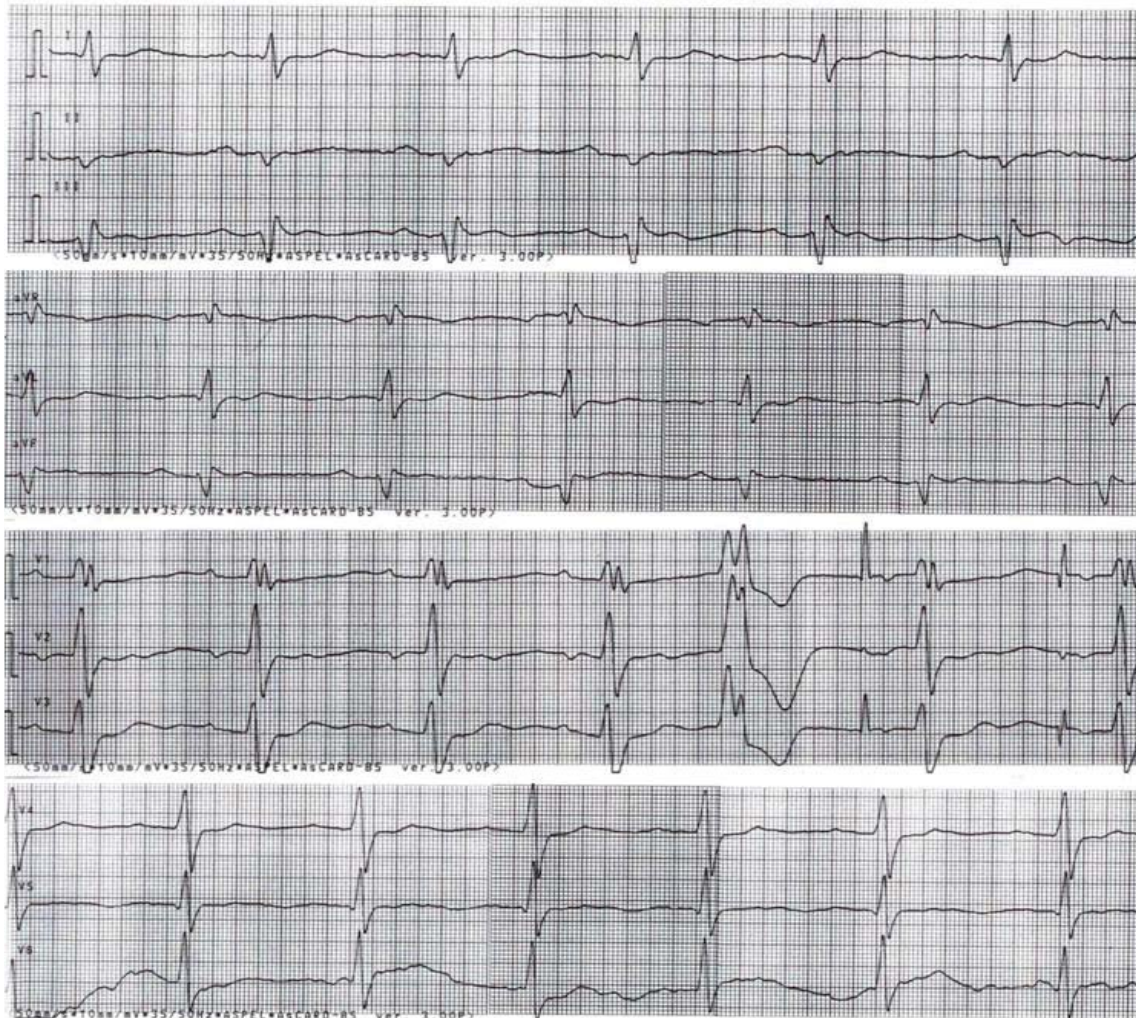


**Rycina 1.** EKG przedstawiające trzepotanie przedsionków ze zmiennym stopniem przewodzenia A-V (50mm/s).  
**Figure 1.** The ECG showing atrial flutter with variable A-V conduction (50mm/s).



**Rycina 2.** EKG z 24-godzinnej rejestracji metodą Holtera: trzepotanie przedsionków z wolną akcją komór ze zmiennym stopniem przewodzenia A-V. Drugi zapis przedstawia wolną akcję komór podczas godzin aktywności dziennej (25mm/s).

**Figure 2.** The ECG from 24-hour Holter monitoring: bradycardic atrial flutter with variable A-V conduction. The second strip presents slow ventricular response during day hours (25mm/s).



**Rycina 3.** Zapis EKG po zabiegu ablacji z obecnym rytmem zatokowym, blokiem A-V I stopnia, LAH oraz RBBB (50mm/s).

**Figure 3.** ECG record after the ablation procedure with a sinus rhythm, A-V Ist degree block, LAH and RBBB (50mm/s).

## DISCUSSION

Relatively slow and irregular ventricular response in patients with atrial flutter may indicate a high-degree A-V block, as it is suggested in ECG textbooks [1]. There are few reports in recent medical press on the occurrence and treatment of atrial flutter with A-V disturbances [3-5]. On reviewing guidelines there are no specific recommendations how to treat patients with slow ventricular response in AFL manifesting specific symptoms. Should additional electrophysiological study and/or Hisogram or a Holter monitoring after the ablation be recommended, or only observation of a patient after the ablation? The point is to decide whether patients really need the implantation of a pacemaker after the successful ablation. It is an unresolved issue if A-V conduction disturbances in AFL are only transitory, and the ablation procedure eliminates it. No sufficient recent medical reports exist in this area. We met a problem in a clinical setting, especially for the patient experienced complications due

to the procedure of a pacemaker implantation. We underline that on presentation the ECG after the ablation there was first degree atrioventricular block, LAH (left anterior hemiblock) and RBBB (Fig 3). Although guidelines for cardiac pacing specify recommendations in chronic bifascicular and trifascicular block including measurements of HV interval (>100 ms in a symptomatic person) and incremental atrial pacing inducing infra-Hisian block, it is equivocal if those recommendations are still valid in patients after ablation of bradycardic AFL [6]. The limitation of the evaluation of the patient is the lack of additional electrophysiological study – a Wenckebach point or the measurement of HV interval. The decision of an implantation was mostly due to the significant history of a patient and the pre-syncope events. In our opinion the holistic evaluation of the patient's case is essential. In conclusion, we claim that taking all the clinical data in case of our patient with bradycardic atrial flutter RF ablation with the following implantation of a pacemaker was a good choice.

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