

CLINICAL VIGNETTE

“A Pill in the Pocket” Approach for Recent Onset Atrial Fibrillation in a Selected Patient Group

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Case Report

A 32-year-old male with a history of paroxysmal atrial fibrillation (AF) presented to the emergency department (ED) with sudden onset of palpitations. The patient was preparing for his classes at work when

he suddenly felt his “heart racing.” He denied chest tightness, dyspnea, pre-syncope or syncope. He waited to see if his symptoms would dissipate. After two hours of continuous palpitations, he presented to the ED. His initial EKG confirmed AF at 124 bpm (Figure 1).

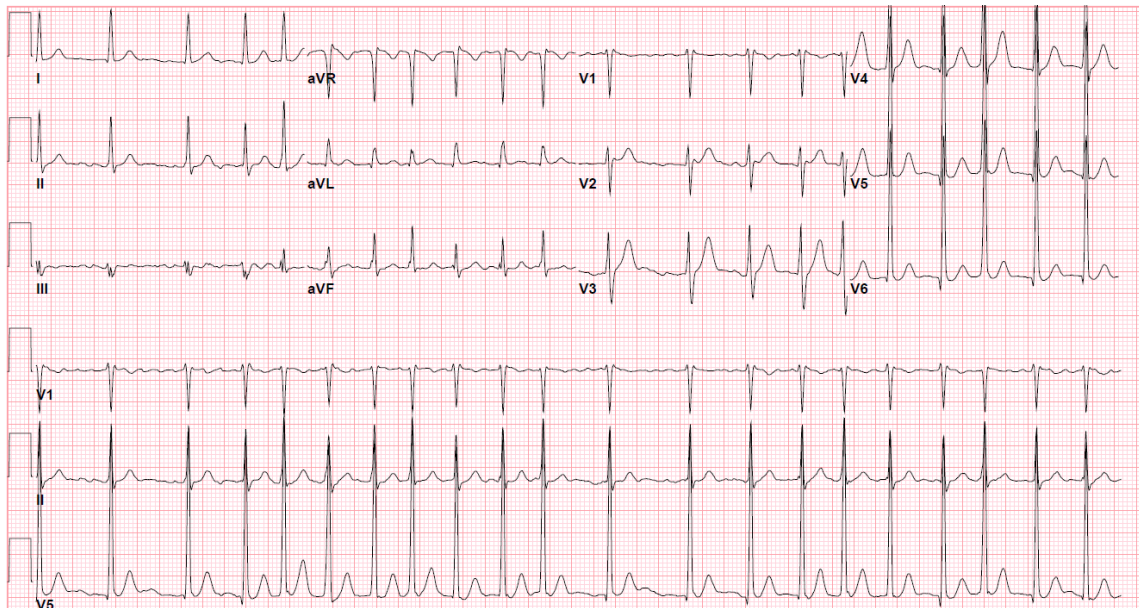


Figure 1: Initial EKG revealing AF with rapid ventricular rate.

He had three prior episodes of AF within the past two years with no apparent triggers. The first episode of AF spontaneously converted into sinus rhythm, while the last two episodes required direct-current cardioversion. In the past, the patient

deferred ablation procedures, prophylactic antiarrhythmic therapy, or daily pharmacotherapy given the infrequent nature of the episodes. His recent cardiac work-up included an echocardiogram and stress echocardiogram, revealing no evidence of

structural heart disease or stress-induced myocardial ischemia. He takes aspirin 325 mg daily. He is otherwise healthy and exercises regularly with no active cardiopulmonary symptoms.

In the ED, the patient received 450 mg of oral propafenone and converted to sinus rhythm approximately three hours later

(Figure 2). He was monitored for a total of eight hours on telemetry after administration of propafenone with no apparent adverse reactions. Eight months later, he experienced a recurrent episode of palpitations while at home which successfully terminated with self-administering 450 mg of oral propafenone.

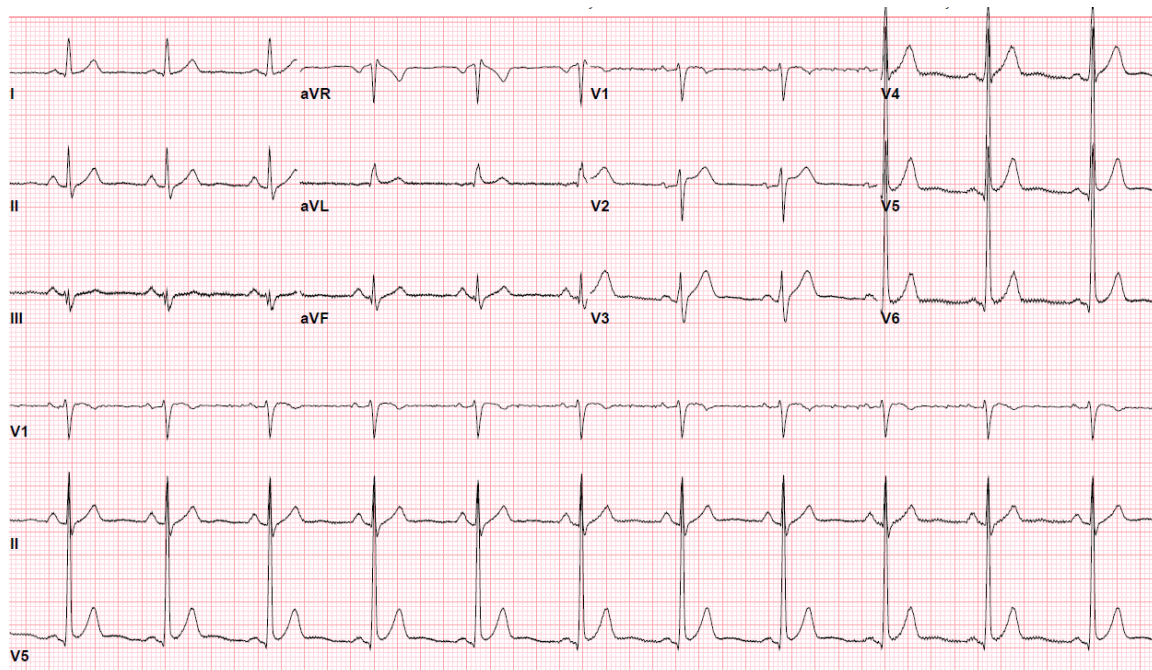


Figure 2: Oral pharmacologic conversion into normal sinus rhythm.

Discussion

AF is the most common sustained cardiac arrhythmia, with increasing prevalence with age¹. While it is often associated with structural heart disease, some of the patients with AF have no detectable heart disease. The patient described in this case has lone AF, without clinical or echocardiographic evidence of cardiopulmonary disease².

Patients with AF often present with palpitations. Other symptoms may include dyspnea, fatigue, chest discomfort, light-

headedness, and syncope. In general, symptoms are related to the irregular and often rapid ventricular response, loss of 'atrial kick', and decreased cardiac output. To alleviate symptoms in a patient with AF, rate-control or rhythm-control strategies can be considered^{1,3}.

When cardioversion is desired, conversion to normal sinus rhythm can be achieved either by direct-current cardioversion (DCCV) or pharmacologic agents¹. While DCCV is more effective in restoring sinus

rhythm instantaneously, anesthesia and cardiac monitoring are usually needed. For pharmacologic cardioversion, class IA, class IC, and class III antiarrhythmic agents can be considered¹.

In selected patients, oral pharmacologic conversion of recent onset AF may be desired for recurrent episodes of AF^{1,4}. Patients with recurrent, symptomatic, and infrequent episodes of AF that are long enough in duration may be good candidates for “a pill in the pocket” approach⁴. After successful pharmacological cardioversion in a monitored setting for the first time, these patients can self-administer oral antiarrhythmic for subsequent episodes of AF⁴. This “pill in the pocket” approach may be effective in terminating episodes of AF, reducing duration of AF, and alleviating symptoms without a visit to the ED⁴.

In-hospital administration of either flecainide or propafenone in a single oral dose has been shown to be effective⁵⁻⁷. These agents have the advantage of acting rapidly in converting AF of recent onset to sinus rhythm⁵⁻⁷. The two drugs have similar efficacy, and their success rates range from 58 to 95 percent. There is a low incidence of associated adverse effects with these antiarrhythmic agents, including bradycardia, paradoxical tachycardia due to enhanced atrioventricular conduction, ventricular arrhythmias, and acute heart failure. Transient atrial flutter with a rapid ventricular rate due to an atrioventricular conduction of 1:1 has been reported in about 1 percent of patients. Other potential adverse reactions can occur due to drug-drug interactions, including with warfarin, digoxin, beta-blockers, and other antiarrhythmic medications⁸.

In selected patients, the oral antiarrhythmic agents, propafenone or flecainide, can

effectively cardiovert recent onset (within 48 hours) AF. Oral pharmacologic conversion can be considered in those patients who are hemodynamically stable and experience abrupt onset of palpitations and no symptoms of dyspnea, light-headedness, or syncope. In order to assess safety for “a pill in the pocket” approach, the initial treatment is administered using a single oral dose based on weight. Intravenous administration of these agents is not adequate to assess safety since it does not predict adverse effects during “pill in the pocket” therapy⁹. The recommended oral dosage of flecainide is 200 mg for patients under 70 kg and 300 mg otherwise.⁴ For propafenone, the oral dosage is 450 mg for patients under 70 kg and 600 mg for patients with weight equal to or greater than 70 kg⁴. Cardiac observation should be performed for eight hours thereafter, monitoring for adverse effects, including hypotension, dysrhythmia, and cardiopulmonary symptoms⁴. Pharmacologic cardioversion is usually anticipated within six hours after oral administration⁴.

The initial treatment is considered successful if there were no observable side effects and cardioversion occurred within six hours from the time of oral administration⁴. These patients may take the drug shortly after the onset of recurrent atrial fibrillation. If symptoms persist more than 6-8 hours or if the patient experiences new symptoms after ingestion of the medication, further medical evaluation should be taken. Administering more than one oral dose during a 24-hour interval should be avoided. Another important aspect for patients with AF is the need for anticoagulation. The rate of thromboembolic complications in this selected patient group should be low; nevertheless, anticoagulation assessment should be individualized.

Exclusion Criteria⁴

1. Structural heart disease (ischemic heart disease, dilated or hypertrophic cardiomyopathy, history of heart failure, valvular heart disease, cor pulmonale, LV systolic dysfunction with EF <50%)
2. Electrocardiographic evidence for ventricular pre-excitation, bundle branch block (QRS interval \geq 120 msec), long QT interval, Brugada syndrome¹⁰
3. Prior episode of atrial fibrillation lasting seven days or more
4. Prior episodes of second or third-degree atrioventricular block or repetitive sinoatrial blocks during waking time
5. Severe chronic illness (e.g., muscular dystrophy or connective tissue disease) and renal or hepatic insufficiency
6. Tachy-brady syndrome
7. Prior thromboembolic complications
8. Electrolyte abnormality
9. Acute illness
10. Suspected or known pregnancy
11. Known intolerance of flecainide or propafenone
12. Current prophylactic antiarrhythmic treatment

Conclusion

In a carefully selected group of patients who have symptomatic and paroxysmal AF, this “pill in the pocket” approach for acute conversion of AF can be effective and safe. After a successful initial attempt in a monitored setting, oral flecainide or propafenone can be effectively self-administered to control recurrent episodes of AF. This approach may reduce ED visits and hospitalizations, decrease duration of AF, and alleviate symptoms⁴. Further studies on other agents to treat paroxysmal AF, such as ranolazine, are currently undergoing and may provide more options in the future¹¹.

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