Atrial Fibrillation at a Very Young Age

Afsin Emre Kayipmaz[1], Abuzer Coskun[2], Sedat Ozbay[2], Osman Mahir Okur[2], Ilham Ozkan[2], Hakki Kaya[3], Sevki Hakan Eren[4], Cemil Kavalci[1], Mehmet Ali Karaca[5]

[1] Department of Emergency, Baskent University Faculty of Medicine, Ankara, Turkey
[2] Department of Emergency, Numune Hospital, Sivas, Turkey
[3] Department of Cardiology, Cumhuriyet University Faculty of Medicine, Sivas, Turkey
[4] Department of Emergency, Cumhuriyet University Faculty of Medicine, Sivas, Turkey
[5] Department of Emergency, Hacettepe University Faculty of Medicine, Ankara, Turkey

Abstract
Atrial fibrillation is the most common rhythm disturbance in general population. We present a 19-year-old man who was admitted to emergency department with progressive weakness, intermittent nausea, vomiting, and palpitations for 1-2 hours. He stated that he had palpitations for the first time. His past history was notable for venlafaxine use for panic disorder. He was diagnosed with AF with rapid ventricular rate and admitted to coronary care unit. Medical cardioversion with amiodarone was attempted and normal sinus rhythm was restored. He had no additional problems during hospital stay and was discharged on anticoagulant therapy (warfarin sodium). Atrial fibrillation should be born in mind in cases presenting to emergency department with palpitations, chest pain, syncope, or weakness in order to provide early diagnosis and treatment for this important disorder causing many complications.

Key Words: Atrial fibrillation, emergency, venlafaxine

This study was presented at 10th National Emergency Medicine Congress. 15-18 May 2014, Antalya, Turkey

(Rec.Date: March 31, 2015 Accept Date: April 21, 2015)

Corresponding Author*:* Afşin Emre Kayıpmaz, Baskent University Hospital Fevzi Cakmak Street Bahçelievler Çankaya, Ankara, Turkey. **Phone:** +905321304647 **Fax:** +903122237333 **E-mail:** aekayipmaz@baskent.edu.tr

Introduction

Atrial fibrillation (AF) is the most common rhythm disturbance in general population [1]. It is associated with increased mortality and morbidity [1]. Diabetes, congestive heart failure, hypertension, advanced age, male gender, thyroid disorders, valvular heart disease, and pulmonary diseases increase the incidence of atrial fibrillation. In this paper we discussed a 19-year-old patient with atrial fibrillation, a condition usually affecting people of advanced age.

Case

A 19-year-old man was admitted to emergency department with progressive weakness, intermittent nausea, vomiting, and palpitations for 1-2 hours. He stated that he had palpitations for the first time. His past history was notable for venlafaxine use for panic disorder. He was overweight and had no other risk factors for AF like smoking, alcohol and drug abuse. On physical examination his general status was moderate, he was conscious. Head and neck examinations were normal; his skin was cold and pale. Respiratory system examination revealed no rales or ronchi. On cardiac examination his pulse was irregular and rapid, while no additional sounds or murmurs were heard. Other system examinations were all normal. His vital signs include a blood pressure of 70/50 mmHg, a pulse rate of 147 bpm, a respiratory rate of 22/min, and a body temperature of 36.5°C. He was diagnosed with AF with rapid ventricular rate (Fig. 1) and admitted to coronary care unit. Medical cardioversion with amiodarone was attempted and normal sinus rhythm was restored (Fig. 2). We did not determine any ECG signs or cardiac enzyme elevation compatible with coronary ischemia. There were no structural heart diseases, cardiac dyskinezia, or thrombus on echocardiography. He had no additional problems during hospital stay and was discharged on anticoagulant therapy (warfarin sodium).

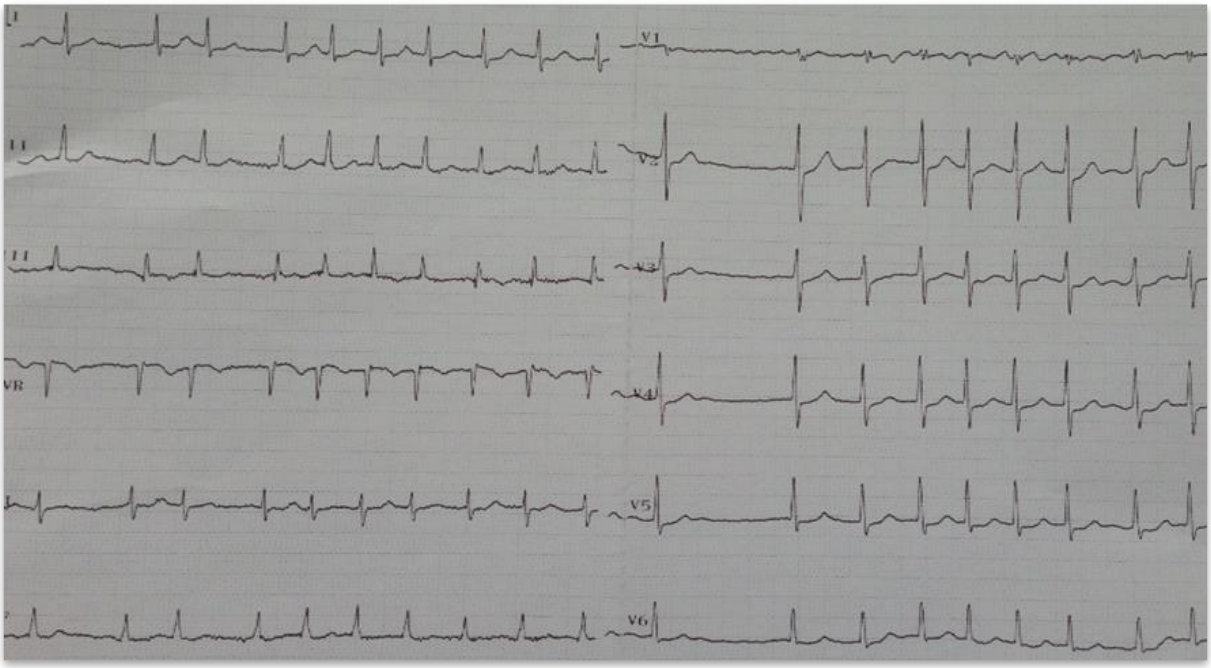

Figure 1. Atrial fibrillation on ECG

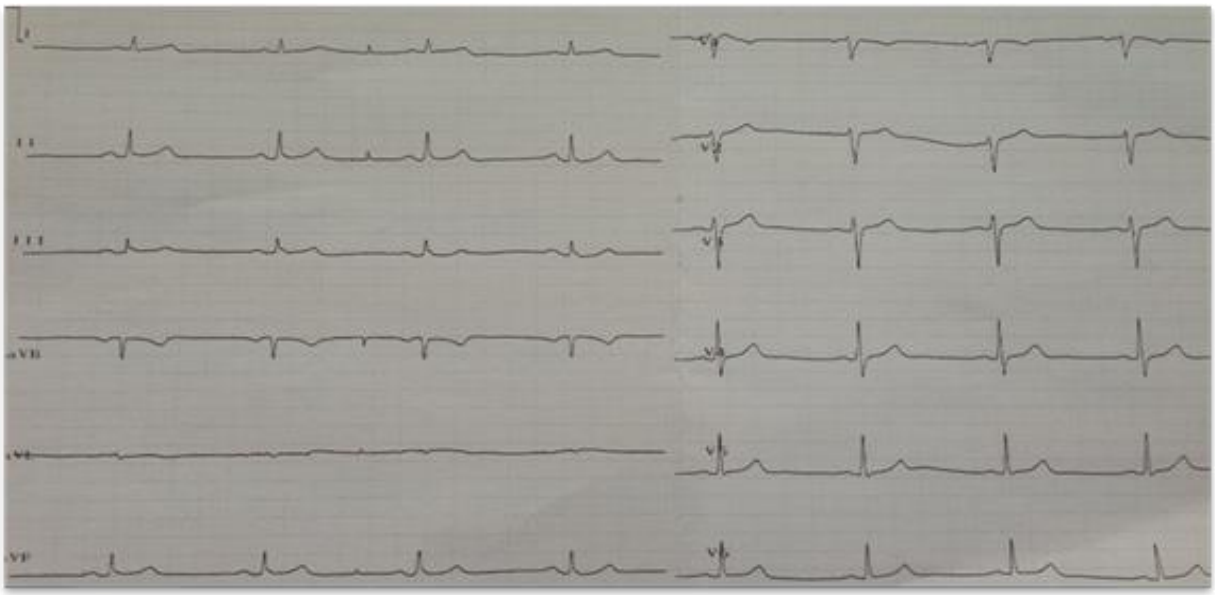

Figure 2. Sinus rhythm after treatment on ECG

Discussion

AF is categorized into 4 forms as newly diagnosed, paroxysmal, persistent, and permanent [1]. Our case can be included in the "newly diagnosed AF" form as he had had no rhythm disturbances before. A special form of AF called "lone AF" has been described in persons younger than 60 years of age with no cardiac or predisposing disorder [1]. Our case can also be categorized into the "lone AF" form since he had no cardiac or other predisposing conditions. Many factors can play a role in emergence of lone AF, including obesity, obstructive sleep apnea, excessive alcohol intake, caffeinated beverages, smoking, emotional stress, genetic factors, and inflammation [1]. AF and lone AF are more common in males [2]. A study has suggested that an X-linked recessive gene may be associated with increased AF rates in men [6]. However, our patient had no family history. Some studies have reported that obesity is a risk factor for AF [3]. A study stated that each 1 unit increase in body mass index is associated with a 3% increase in the risk of AF [3]. In line with these observations, our case was also overweight. Literature data suggests that excessive alcohol intake is among the risk factors for lone AF [4]. Alcohol may cause AF owing to its direct toxic effects on cardiomyocytes [4]. A study demonstrated that alcohol intake in excess of 36 g/day increase AF risk by 34% [5]. In contrast, our case had no alcohol intake. There are controversial results with regard to the effects of caffeinated beverages on AF incidence [6]. Some studies have reported episodes of AF after ingestion of caffeinated beverages [6]. Our patient also had a history of caffein intake. Although many studies exploring the relationship between AF and anxiety and stress have been conducted, the relationship has not been fully elucidated. A study reported that anxiety increase AF risk [7]. Hence, our patient also had a history of panic attack and anxiety. Vagal AF is another specific AF type that occurs in young people with high vagal tone, due to active participation in physical exercise or other conditions augmenting vagal tone. It usually occurs at times when vagal activity is highest, for example at night during sleep or physical inactivity periods [8].

There are significant disparities between the studies attempting to develop an effective therapy for AF [1]. The main objectives of AF treatment include preventing possible major complications and reduce symptom burden [1]. We administered warfarin because it has been reported that atrial stunning occurs as long as 1 month after cardioversion of AF and patients may be at cardioembolic risk [9].

Conclusion

Atrial fibrillation is the most common arrhythmia in general population and it is associated with significant mortality and morbidity. Its incidence increases with advanced age. Nevertheless, young adult or even pediatric cases have recently been increasing in number due to a number of reasons [6]. AF should be born in mind in cases presenting to emergency department with palpitations, chest pain, syncope, or weakness in order to provide early diagnosis and treatment for this important disorder causing many complications.

Conflict of Interest: No conflict

References

1. Camm AJ, Kirchhof P, Lip GY, Schotten U, Savelieva I, Ernst S, Van Gelder IC, Al-Attar N, Hindricks G, Prendergast B, Heidbuchel H, Alfieri O, Angelini A, Atar D, Colonna P, De Caterina R, De Sutter J, Goette A, Gorenek B, Heldal M, Hohloser SH, Kolh P, Le Heuzey JY, Ponikowski P, Rutten FH. Guidelines for the management of atrial fibrillation. Eur Heart J. 2010;31(19):10.
2. Chen LY, Herron KJ, Tai BC, Olson TM. Lone atrial fibrillation: influence of familial disease on gender predilection. J Cardiovasc Electrophysiol. 2008;19(8):802-6.
3. Dublin S, French B, Glazer NL, Wiggins KL, Lumley T, Psaty BM, Smith NL, Heckbert SR. Risk of new-onset atrial fibrillation in relation to body mass index. Arch Intern Med. 2006;166(21):2322-8.
4. Piano MR, Rosenblum C, Solaro RJ, Schwertz D. Calcium sensitivity and the effect of the calcium sensitizing drug pimobendan in the alcoholic isolated rat atrium. J Cardiovasc Pharmacol. 1999;33(2):237-42.
5. Djoussé L, Levy D, Benjamin EJ, Blease SJ, Russ A, Larson MG, Massaro JM, D'Agostino RB, Wolf PA, Ellison RC. Long-term alcohol consumption and the risk of atrial fibrillation in the Framingham Study. Am J Cardiol. 2004;93(6):710-3.
6. Di Rocco JR, During A, Morelli PJ, Heyden M, Biancaniello TA. Atrial fibrillation in healthy adolescents after highly caffeinated beverage consumption: two case reports. J Med Case Rep. 2011;5:18.
7. Eaker ED, Sullivan LM, Kelly-Hayes M, D'Agostino RB Sr, Benjamin EJ. Tension and anxiety and the prediction of the 10-year incidence of coronary heart disease, atrial fibrillation, and total mortality: the Framingham Offspring Study. Psychosom Med. 2005;67(5):692-6.
8. Ciftci O, Oto A. Vagally induced atrial fibrillation. TAPE. 2012;10(1):40-6.
9. Dabek J, Gasior Z, Monastyrska-Cup B, Jakubowski D. Cardioversion and atrial stunning. Pol Merkur Lekarski. 2007;22(129):224-8. (Abstract)