NORMAL BASINÇLI HİDROSEFALİNİN NEDEN OLDUĞU PAROKSİSMAL ATRİYAL FİBRİLASYON OLGUSU

Case of Paroxysmal Atrial Fibrillation Induced by Normal Pressure Hydrocephalus

Sabri Onur ÇAĞLAR[1], Fatma ERDEM[1], Şule Aydın TÜRKOĞLU[2]

[1]Abant İzzet Baysal Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği, Bolu

[2]Abant İzzet Baysal Eğitim ve Araştırma Hastanesi, Nöroloji Kliniği, Bolu

Sabri Onur ÇAĞLAR, Uzm. Dr.
Fatma ERDEM, Yrd.Doç.Dr.
Şule Aydın TÜRKOĞLU, Yrd.Doç.Dr.

İletişim:
Uzm. Dr. Sabri Onur ÇAĞLAR
Abant İzzet Baysal Eğitim ve Araştırma Hastanesi, Kardiyoloji Kliniği, 14000 Bolu
Tel: +90 (374) 270 45 75
e-mail:
onur366@yahoo.com

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ÖZET

Atriyal fibrilasyon (AF) klinik pratikte sık görülen bir ritim bozukluğudur. Yaş, diabetes mellitus, hipertansiyon, kalp yetmezliği, sigara, obezite, erkek cinsiyet, miyokard infarktüsü, valvüler kalp hastalığı, pulmoner hastalıklar ve hipertiroidi AF için risk faktörleridir. Mevcut bilgilerimize göre paroksismal AF ile normal basınçlı hidrosefali (NPH)birlikteliği daha önce bildirilmedi. Burada yeni başlangıçlı AF ile NPH birlikteliğini sunuyoruz.

53 yaşında bayan hasta acil sevişe 45 dakika önce başlayan çarpıntı şikayeti ile başvurdu. Çekilen elektrokardiyografi (EKG)'si AF ile uyumluydu. Medikal kardiyoversiyon uygulandı. Medikal kardiyoversiyon sonrası normal sinüs ritmi(NSR)'ne dönmedi. Daha sonra 100 j ile bifazik elektriksel kardiyoversiyon uygulandı. Elektriksel kardiyoversiyon sonrası NSR elde edildi. Hastanın anamnezinde bir haftadır olan yürüme güçlüğü mevcuttu. Nöroloji tarafından değerlendirilen hastaya beyin MR istendi. MR ventrikülomegali ile uyumluydu. 25 ml'lik beyin omurilik sıvısının boşaltılması sonrası hastanın klinik bulguları normale döndü. Bu yüzden hekimler, NPH'ın AF'ye yol açabileceğini akılda bulundurmalıdır.

Anahtar kelimeler: *Atriyal fibrilasyon; Normal Basınçlı Hidrosefali; Elektrokardiyografi*

ABSTRACT

Atrial fibrillation (AF) is rhythm disorder which observed most common in clinical practice. Increasing age, diabetes mellitus, hypertension, heart failure, smoking, obesity, male gender, myocardial infarction, valvular heart diseases, pulmonary diseases and hyperthyroidism are risk factors for AF. To the best of our knowledge simultaneously of paroxysmal atrial fibrillation (PAF) and normal pressure hydrocephalus (NPH) has not been reported previously. We herein report the sudden onset of AF associated with NPH. A 53 year-old female was admitted to our emergency department complaining of palpitation during the past 45 minute. Electrocardiography (EKG) confirmed presence of (PAF). Medical cardioversion was planned. With medical cardioversion, her rhythm didn't return to the normal sinüs rhythm (NSR). Than biphasic anterior-posterior cardioversion was performed with DC at 100 J. NSR was achieved after DC cardioversion. According to her medical history, she has a difficulty in walking for one week. Patient was consulted by neurologist. On neurological examination, NPH was diagnosed. So physicians should keep in mind that NPH can cause to AF. Because of that, in emergency department if patient admit with complaining of palpitation, neurological diseases should be considered.

Key words: *Atrial fibrillation; Normal pressure hydrocephalus; Electrocardiography*

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INTRODUCTION

Atrial fibrillation (AF) is rhythm disorder which observed most common in clinical practice (1). It increases the risk of ischemic stroke and systemic embolism approximately 4-5 fold (1-4). Increasing age, diabetes mellitus, hypertension, heart failure, smoking, obesity, male gender, myocardial infarction, valvular heart diseases, pulmonary diseases and hyperthyroidism are risk factors for AF (5-6). We herein report the sudden onset of AF associated with normal pressure hydrocephalus (NPH).

CASE REPORT

A 53 year-old female was admitted to our emergency department complaining of palpitation during the past 45 minute. Electrocardiography (EKG) confirmed presence of paroxysmal atrial fibrillation (PAF). A diagnosis of new-onset AF was made. Than patient was taken emergently to the coronary intensive care for cardioversion. Physical examination when she was transported our department; her temperature was 36,8 °C, irregular heartbeats at a frequency of 120-130 beats per minute, blood pressure 135/81 mmHg, respiratory rate 18 breaths/min and oxygen saturation 99% on room air. She didn't have any cardiovascular or systemic disease and wasn't taking any medication. Cardiovascular examination had no significant findings. Lungs were clear on auscultation bilaterally, and no peripheral edema was present. A complete blood count, thyroid tests and blood electrolytes (Na, K, Mg, Ca) were normal. Transthoracic echocardiography showed no organic abnormality with normal ejection fraction, chamber size and valve. For medical cardioversion, amiodarone was administered (150 mg given over 10 minutes and followed by a 1 mg/min infusion for 6 hours, followed by 0,5 mg/min). During the amiodarone infusion, her rhythm didn't return to the normal sinüs rhythm (NSR). Than we decided to perform elective directed current (DC) cardioversion. Biphasic anterior-posterior cardioversion was performed with DC at 100 J. NSR was achieved after DC cardioversion. Second day AF was detected in ECG again. After second DC cardioversion NSR was achieved.

According to her family she has difficulty in walking for a one week. Because of this symptom, we consulted the patient to neurologist. On neurological examination, she had no papilloedema; visual fields and acuity were normal. In view of deteriorated gait, a brain magnetic resonance imaging (MRI) scan was requested by neurologist. MRI scans demonstrated chronic moderate to severe triventriculomegaly. After removal of 25 ml cerebrospinal fluid (CSF) (tap test), her gait disturbance improved and recurrens of arrhythmia wasn't observed and diagnosed normal pressure hydrocephalus (NPH). Than patient was discharged on the second day of hospital stay. At the 1-month follow-up visit, ECG showed NSR. Finally she has no etiology other than NPH related ventriculomegaly, could explain this PAF episode.

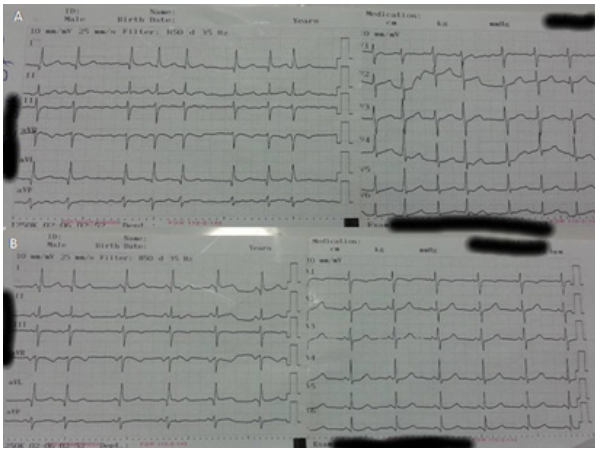

Figure 1. A. Second day, persistance of AF; B. After second DC cardioversion, achieving NSR

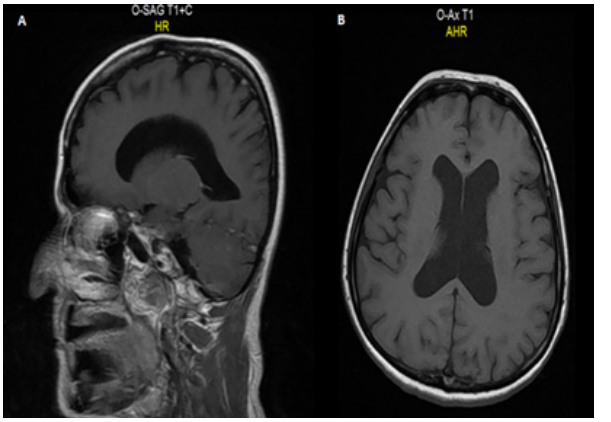

Figure 2. A-B. Axial and sagittal brain MRI scan of the patient. Enlargement of the ventricles is seen.

DISCUSSION

NPH generally observed with these symptoms; deteriorated gait, impaired cognition and urinary incontinence with enlarged ventricles and normal or minimal elevated CSF pressure (7). NPH can be result of some disorders such as infection, trauma or as idiopathic (iNPH) without any distinctive external reason (7-8). As shown, our patient symptoms started suddenly without cardiovascular or systemic disease, so can be called iNPH. Our case is atypical because she has only deteriorated gait. The exact pathomechanism of NPH with convincing evidence remains undetermined. To explain the pathogenesis of NPH, more attention should be paid.

AF consists in patients with cardiac disorders (hypertensive heart disease, coronary artery disease, valvular heart disease, congenital heart disease and acquired cardiomyopathies) (9). Many noncardiac diseases (thyroid disorders, pulmonary diseases, and alcohol overconsumption) are also associated with AF(10-11). Acute illness and surgery are associated with high risk for the sudden onset of AF (12). In literature, limited information for PAF which can be caused by neurological disease. There is just one case can be related with an attack of multiple sclerosis. However, in literature there is no information about the association between NPH and AF. In our case NPH was the only etiology that could clarify the episode of AF. It is possible that NPH affect interatrial impulse conduction paths negatively.

We attentively ruled out cardiac and non cardiac pathologies that could have caused PAF. We couldn't explain why AF appeared due to NPH. Our case is significant because it draws attention to the possibility that NPH can cause PAF. Our patient hasn't got any predisposing factors reported previously, NPH might cause cardiac problems with undefined mechanism. More studies are needed to establish for NPH to verify the association between cardiac arrhythmias and NPH. Togetherness PAF and NPH is a phenomenon that warrants further study to determine its incidence and possible causes. According to the best of our knowledge, simultaneously of PAF and NPH has not been reported previously. Physicians should keep in mind that NPH can cause to AF.

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