Palpitations Developed Following Treatment with Colchicines

Kolşisin ile Tedavi Sonrası Gelişen Palpitasyon

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SUMMARY

Torsade de pointes is a form of polymorphic ventricular tachycardia occurring in a setting of prolonged QT interval as represented on surface electrocardiogram (ECG). A 40-year-old man with the chief complaint of generalized weakness and increased heart rate (palpitation) was brought to hospital. The patient was known to have familial Mediterranean fever (FMF) and was receiving treatment (colchicines) for his condition. During acquiring the ECG, an episode of palpitation occurred and dysrythmia was observed in patient's ECG. The blood level of Ca was normal but Mg level was lower than the normal range (0.3) in this patient, indicating a hypomagnesemia possibly caused by colchicines, which, in turn, might result in torsade de pointes. Colchicines is the choice drug for the treatment of FMF. Colchicines can reduce disease activity and prevent amyeloidosis. Colchicines overdose carries a high mortality risk (because of resulting cardiac arrhythmias). Electrolyte abnormalities that may be observed in patients with colchicines toxicity include hypocalcemia, hypophosphatemia, hyponatremia and hypomagnesemia. Mg deficiency produces a variety of clinical manifestations, including cardiac arrhythmias, such assupraventricular tachycardia and torsade de pointes. So in patients with FMF palpitation and torsade de pointes may occur due to Colchicines induced hypomagnesaemia. Therefore, patients who experience palpitations and who have a history of FMF may develop torsade de pointes resulting from colchicines induced hypomagnesemia.

Key words: Colchicine; familial mediterranean fever; torsade de pointes.

ÖZET

Torsade de pointes, elektrokardiyogramda (EKG) QT aralığının uzaması ile görülen bir polimorfik ventriküler taşikardi türüdür. Halsizlik ve çarpıntı şikayeti ile hastanemize başvuran 40 yaşındaki erkek hastada kalıtımsal Akdeniz ateşi (KAA) öyküsü olduğu ve kolşisin ile tedavi edildiği bilgisi edinilmiştir. Hastada EKG çekilirken çarpıntı evresi gelişmiş ve disritmi EKG'de kayıt edilmiştir. Hastanın kan değerlerinde kalsiyum seviyesi normal ancak magnezyum seviyesi normal değerden (0.3) düşük bulunmuştur. Hipomagnezemi durumunun kolşisin tedavisi nedeniyle geliştiği ve bunun torsade de pointes'e neden olduğu düşünülmüştür. Kolşisin KAA hastalığının tedavisinde, hastalık aktivitesini azalttığı ve amiloidozu önlendiği için tercih edilen ilaçtır. Kolşisin overdozu kardiyak aritmilere neden olduğu için yüksek mortalite riski taşımaktadır. Kolşisin toksisitesi durumunda hastada hipokalsemi, hipofosfatemi, hiponatremi ve hipomagnezemi gibi elektrolik bozuklukları görülebilir. Magnezyum yetersizliği supraventriküler taşikardi ve torsade de pointes gibi kardiyak aritmiler kendisi gösteren klinik tablolar sergileyebilir. KAA eşliğinde görülen çarpıntı ve torsade de pointes'in, kolşisin kullanımına bağlı gelişen hipomagnezemi ile ilişkili olabilileceği akılda tutulmalıdır.

***Anahtar sözcükler**: Kolşisin; kalıtımsal Akdeniz ateşi; torsade de pointes.*

Introduction

Familial Mediterranean fever (FMF) is an autosomal recessive hereditary disease which primarily affects the people from Mediterranean areas.[1] Colchicin, which is an alkaloid obtained from colchicum autumnal,[2] is mostly used for the treatment of FMF.[3] It has been documented that colchicin therapy in FMF patients results in an improvement of quality of life and of laboratory test results.[2] Some electrolyte abnormalities may occur as a result of colchicin toxicity. Some of those are hypophosphatemia, hyponatremia, hypocalemia and hypomagnesaemia.[4-8]

Hereby, we introduce a middle-aged man with the history of

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FMF who developed torsades de pointes, which was treated with magnesium supplement.

Case Report

A 40-year-old man with the chief complaint of generalized weakness and increased heart rate (palpitation) was brought to the hospital. The patient was known to have FMF and receiving treatment (colchicines, 2 mg/day). By the morning of the first day before admission, he had multiple episodes of palpitation. These episodes did not take more than a few seconds. Due to the repetition of the palpitations, he was taken to the emergency room. At initial visit, he was relaxed and had stable vital signs.

In the physical examination, his heart and lung sounds were normal. His abdomen was soft and no distention and tenderness were observed. His neurological examinations including cranial nerves were all normal. An ECG evaluation was requested, and during the acquisition of ECG, another episode of palpitation occurred and a dysrythmia was observed in patient's electrocardiogram (Fig. 1). Both the palpitation and the dysrhythmia were self-limited.

ECG of the patient was consistent with non-sustained torsade de pointes. Plasma electrolyte levels were measured. Blood level of Mg was 0.3 mg/dl in test results (normal range is 1.5-2 mg/ml). The patient was treated with 2 mg Mg (50%) infusion over 60 minutes and responded well to the treatment.

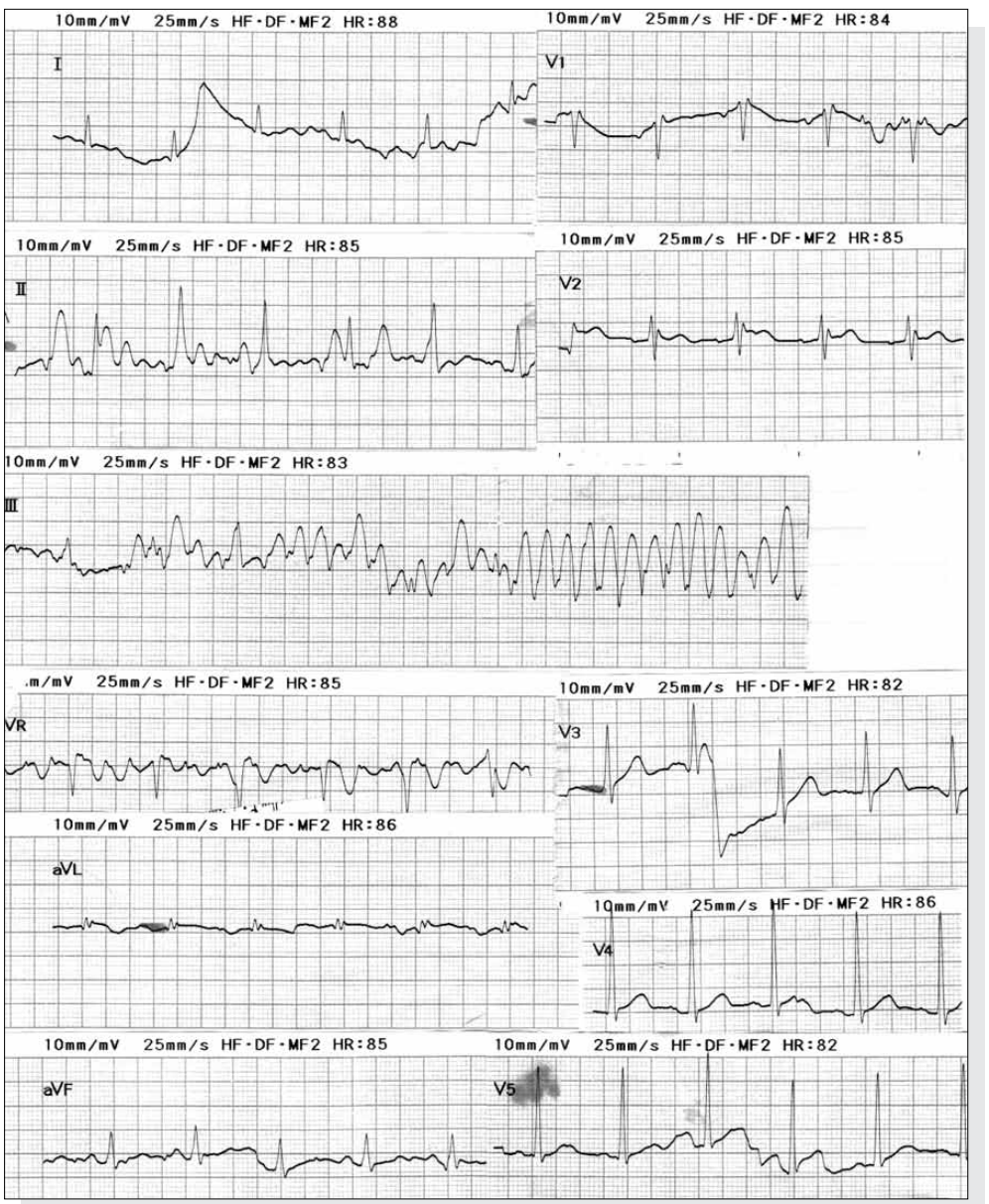

Figure 1. Patient's electrocardiogram.

Discussion

FMF is an autosomal recessive hereditary disease which mostly affects people living in Mediterranean margin and characterized by this symptoms of recurrent attacks of fever and peritonitis, arthritis, pleuritis and erysipelas like skin disease.[1] Colchicin is the drug of choice for the treatment of FMF and gout, additionally it has been reported that it can be useful in primary biliary cirrhosis and alcoholic cirrhosis.[9,10] It has been recommended for recurrent attacks of FMF, scleroderma, amyloidosis and Behcet's disease.[5]

Colchicin is mostly administered orally and is absorbed rapidly from GI tract.[11,12] Colchicin is formulated in tablets of 0.5 mg or 0.6 mg. IV formulation also exists containing 0.5 mg/ml solution.[11]

The side effects of colchicines are dose dependent. Route of administration also plays a role in presenting of side effects. 80% of patients treated with the full therapeutic doses of colchicines experience GI side effects.[13]

Cardiovascular collapse is one of the most important causes of morbidity and mortality in patients with high blood levels of colchicines. Hypovolemia and electrolyte abnormalities caused by GI disturbances can remarkably affect the cardiac performance in patients.[14]

Different studies have reported that cardiac arrhythmia such as sinus tachycardia, bradycardia, sinus arrest, ventricular fibrillation and complete atrioventricular blocks may occur in condition of colchicines overdoseage.[2,15,16] Torsede de pointes is a polymorphic ventricular tachycardia which can be caused by long QT syndrome. QT prolongation can result from various conditions including drugs, electrolyte depletion (like.g potassium or magnesium) and heart disease.[17,18]

Several electrolyte disturbances may also occur in patients with colchicines toxicity including hypocalcemia, hypophosphatemia, hyponatremia and hypomagnesemia. These abnormalities in electrolyte levels may be so severe that can affect the initial clinical presentation.[14]

Both hypokalemia and hypomagnesemia are known to cause arrhythmias.[12] Torsade de pointes is a form of ventricular tachycardia that is often occurs due to pro-arrhythmic characteristics of many cardiac and non-cardiac drugs.[18] Heart disease and electrolyte abnormalities, including hypomagnesemia, hypokalemia and colchicines toxicity can be among the most important causes of torsade de pointes in patients with FMF disease.

Conclusion

We conclude that patients with FMF and are treated with colchicines may experience palpitations and present with torsade de pointes in the emergency department. Their magnesium level in blood should be evaluated because of the likelihood of hypomagnesaemia, which can cause torsade de pointes, and they should be treated accordingly.

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