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Apical Hypertrophic Cardiomyopathy Mimics Acute Coronary Syndrome: Case Report

Aytekin Güven*

* Başkent Üniversitesi Tıp Fakültesi Konya Uygulama ve Araştırma Merkezi, Kardiyoloji Anabilim Dalı, Konya

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Apical hypertrophic cardiomyopathy (HCM) is a relatively rare form of HCM, in which the hypertrophy of myocardium predominantly involves the apex of the left ventricle. The typical features of Apical HCM, first described by Sakamoto and Yamaguchi and their associates, consist of giant T wave negativity in the electrocardiogram and a "spade-like" configuration of the LV cavity at end-diastole on left ventriculography. Apical HCM generally has a more benign course compared to other variants HCM.Although the best tool for diagnosis of HCM is transthoracic echocardiography (TTE) apical type of HCM may be occasionally overlooked during routine examination. We present a 38 years old male with HCM who was referred from the out center with the preliminary diagnosis of acute coronary syndrome but indeed he had HCM and in whom HCM was overlooked during TTE examination.
Key Words: Apical Hypertrophic Cardiomyopathy; Echocardiography; Acute Coronary Syndrome.

Akut Koroner Sendromu Taklit Eden Apikal Hipertrofik Kardiyomiyopati: Olgu Sunumu

Apikal hipertrofik kardiyomiyopati (HKM) hipertrofik kardiyomiyopatinin nispeten nadir görülen, özellikle sol ventrikülün apeksinin miyokardının hipertrofisini içeren bir tipidir. İlk olarak Sakamoto ve Yamaguchi tarafından açıklanan apikal HKM'nin tipik bulguları, elektrokardiografide dev T dalga negatifliği ve sol ventrikülografide diyastole sonunda sol ventrikül kavitesinin "maça ası" görünümüdür. Apikal HKM diğer HKM ile karşılaştırıldığında genellikle iyi seyirlidir. Apikal tip HKM'nin en iyi tanı aracı transtorasik ekokardiyografi (TTE) olmasına rağmen rutin işlemlerde nadiren gözden kaçabilir. Bu olgu sunumunda, başka bir merkeze akut koroner sendrom tablosunda başvuran ve rutin TTE incelemede HKM'si gözden kaçan fakat gerçekte HKM'li 38 yaşında erkek hastadan bahsedilmektedir.
Anahtar Kelimeler: Apikal Hipertrofik Kardiyomiyopati; Ekokardiografi; Akut Koroner Sendrom.

Introduction

Hypertrophic cardiomyopathy (HCM) is defined as a significant myocardial hypertrophy in the absence of an identifiable cause. Apical HCM which has been first described in Japan by Yamaguchi is one of the HCM subtypes.[1,2] It is frequently observed in Japan but rare cases have been reported from the Turkey. Although the best tool for diagnosis of HCM is transthoracic echocardiography (TTE) apical type of HCM may be occasionally overlooked during routine examination.[3,4]

Corresponding Author: Dr. Aytekin GÜVEN, Başkent Üniversitesi Tıp Fakültesi, Konya Uygulama ve Araştırma Merkezi, Kardiyoloji Anabilim Dalı, KONYA, Tel: 0 332 257 06 06 (İç hat 2019), Fax: 0 332 247 68 86 Cep: 0 532 516 62 39
e-mail: aytekinguven@hotmail.com

Case Report

A 38-year-old male patient presented with the new onset angina and shortness of breath to out center and whose TTE was found to be normal. His ECG revealed ischemic changes and therefore he was referred to our center for coronary angiographic evaluation.

Physical examination revealed that he was suffering from the exertional dyspnea and chest pain for a long time. However he had presented to emergency department due to increasing chest pain lately. Past history was unremarkable except smoking. Blood pressure was 130/80 mmHg and the other system examinations were normal. New ECG showed biphasic and remarkable negative T waves in precordial leads (Figure 1).

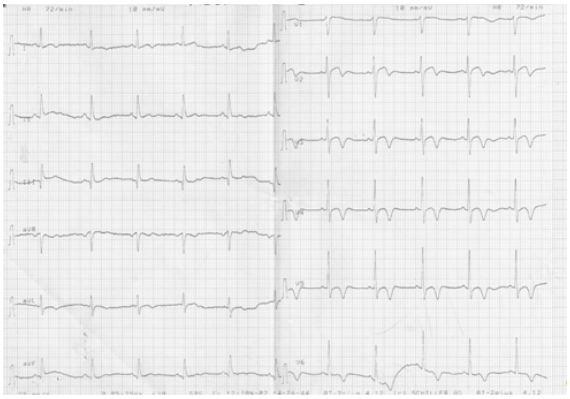

Figure 1. Electrocardiogram showing T-wave inversion in the leads of V4-6.

Routine biochemical analyses, complete blood count and cardiac markers were normal. He was taken to catheterization laboratory due to ongoing angina. All coronary arteries were entirely clear. Ventriculography was not performed. Anti-ischemic therapy was started considering acute coronary syndrome with patent coronary arteries. Neither ECG records nor cardiac markers altered during follow up. Because patient's symptoms relieved he was discharged with anti-ischemic therapy. However, he presented to our center with severe chest pain and palpitation two weeks later. He did not receive medication and continued to smoking. New ECG findings were similar to the formers. Biochemical analysis and cardiac markers were still normal. In detailed questioning, we learned that his brother had died suddenly. Therefore, TTE examination was repeated with caution. During two-diameter TTE examination thickness of basal septum and posterior wall, left ventricle diameter and ejection fraction were normal. From the apical four -long axis and parasternal short axis views, localized hypertrophy of left ventricle apex was observed (Figure 2).

Giving the ECG and TTE findings apical HCM was diagnosed. Life style modification and beta-blocker therapy was recommended and he has been followed asymptomatically for 6 months.

Discussion

Apical HCM is an uncommon variant with predominant involvement of the apex of the heart. This condition was first described in Japanese males in 1976. Apical HCM is distinctly uncommon in other parts of world and probably constitutes 1%-2% of those with HCM. In Japan, this apical variant constitutes about 25% of patients with HCM.[5] Patients with apical HCM tend to have little or no symptoms. The most frequently-encountered symptom is atypical chest pain. Like classical HCM, they are prone to arrhythmias, either atrial or ventricular, and may present with palpitations or even syncope.[6,7]

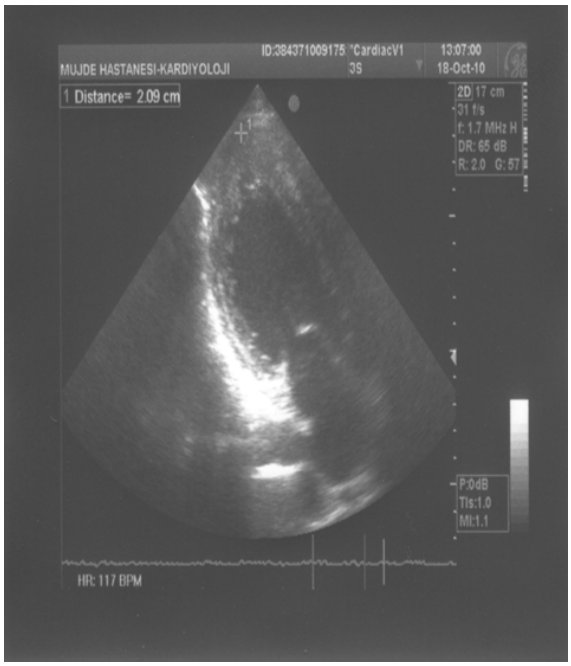

Figure 2. The hypertrophy of the apex on the apical views.

The diagnosis of apical HCM can be established with TTE. If TTE images are difficult to obtain or interpret, magnetic resonance imaging could occasionally be used to establish the diagnose especially if visualization of the apex is difficult by TTE.[8]

Apical HCM is a rare condition and it may be overlooked during routine TTE examination particularly if sufficient attention is not given. Only a few cases have been reported in literature.In general, coronary artery disease has been considered due to ECH finding and coronary angiography has been performed firstly as in our case.

Apical HCM generally has a more benign course compared to other variants HCM. Although it usually does not lead to outflow tract obstruction like other variants, but it may cause arrhythmias.[6]

Apical HCM have a benign course when compared to the other type of HCM but our case was severely symptomatic from palpitations. In our case, family history of sudden death may suggest genetic tendency and therefore we recommended life style modification and beta- blocker therapy for life long.

In conclusion, apical HCM should be kept in mind in those patients with cardiac symptoms, ischemic findings

on ECG and normal coronary arteries and thereby the more careful TTE examination should be performed in these patients.

References

1. Ishiwata S, Nishiyama S, Nakanishi S, et al. Natural History of 82 Patients with Hypertrophic Cardiomyopathy: Follow-up for Over Ten Years. J Cardiol 1991; 21(1): 61-73.
2. Yamaguchi H, Ishimura T, Nishiyama S, et al. Hypertrophic Nonobstructive Cardiomyopathy with Giant Negative T Waves (Apical Hypertrophy): Venticulographic and Echocardiographic Features in 30 Patients. Am J Cardiol 1979; 44(3): 401-12. DOI: 10.1016/0002-9149(79)90388-6
3. Sayın T, Koçum T, Kervancioglu C. Apical Hypertophic Cardiomyopathy Mimics Acute Coronary Syndrome. Int J Cardiol 2001; 80(1): 77-9. DOI: 10.1016/S0167-5273(01)00442-9
4. Yiğiner Ö, Cingözbay BY, Uz O, Cebeci BS. An Overlooked Diagnosis on Transthoracic Echocardiography: Apical Hypertrophic Cardiomyopathy. Arch Turk Soc Cardiol 2009; 37(8): 569-71.
5. Sakamoto T, Tei C, Murayama M, Ichiyasu H, Hada Y. Giant T Wave Inversion as a Manifestion of Asymmetrical Apical Hypertrophy (AAH) of the Left Ventricle. Echocardiographic and Ultrasonocardio-tomographic Study. Jpn Heart J 1976; 17 (5): 611-29. DOI: 10.1536/ihj.17.611
6. Ting P, Gunasegaran K, Teo WS. Electrocardiographical Case. Asymptomatic Patient with Deep T-wave Inversions. Singapore Med J 2007; 48(6): 586-9.
7. Karakurt Ö, Biçer A, Akdemir R, Kılıç H. Apical Hypertrophic Cardiomyopathy Associated with High Degree Atrioventricular Block: Case Report. Turkiye Klinikleri Journal of Cardiovascular Sciences 2010; 22(3): 352-4.
8. Moon JC, Fisher NG, McKenna WJ, Pennell DJ. Detection of Apical Hypertrophic Cardiomyopathy by Cardiovascular Magnetic Resonance in Patients with Non-Diagnostic Echocardiography. Heart 2004; 90(6): 645-9. DOI: 10.1136/hrt.2003.014969

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