International Journal of Medical Science and Clinical Research Studies

ISSN(print): 2767-8326, ISSN(online): 2767-8342

Volume 02 Issue 11 November 2022

Page No: 1329-1331

DOI: https://doi.org/10.47191/ijmscrs/v2-i11-36, Impact Factor: 5.365

Sick Sinus Syndrome in a Female Patient with Chagas Disease. Case Report

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ABSTRACT

Chagas disease is a zoonosis transmitted by Trypanosoma Cruzi, which has become a public health problem worldwide. The infection can be acute, chronic phases and reactivations, characterized by heart involvement. We report the case of a 33-year-old woman with stabbing chest pain, as well as hemiparesis in the left arm managed for 8 weeks, with persistent chest pain, electrocardiogram (ECG) showing a heart rate of 40 bpm. She is referred to a cardiologist who requests a Holter which shows pauses of 5.4 seconds and a transthoracic echocardiogram with LVEF 56%, PASP 24 mmHg; anti trypanosoma cruzi IgG antibodies were requested with a positive result, starting management based on nifurtimox; candidate patient for management with a double-chamber pacemaker, with remission of symptoms. In recent years, our knowledge about Chagas disease has expanded, electrocardiography is the most useful individual examination technique for these patients. Late manifestations include sinus node dysfunction leading to severe bradycardia, high-grade AV block, etc. Chagas disease should be suspected in all patients with an epidemiological history compatible with symptoms of cardiac involvement. and we believe that active intervention in endemic areas of the disease is especially relevant.

KEYWORDS: chagas disease, trypanosoma cruzi, chagas cardiomyopathy, sick sinus syndrome.

ARTICLE DETAILS

Published On:
22 November 2022

Available on:
https://ijmscr.org/

INTRODUCTION

Chagas disease, described in 1909 by the Brazilian doctor Carlos Chagas, as a disease caused by a vector-parasite known as Trypanosoma Cruzi (TC)[1]. It is a zoonosis transmitted by triatomine bugs known as kissing bugs, bedbugs (Triatoma, Panstrongylus, Rhodnius)[2]. It has become a public health problem worldwide. However, Latin America has the highest incidence and prevalence rate[3].

TC infection can lead to heterogeneous phenotypes and clinical manifestations in acute infection, chronic phases, and reactivations. The acute phase is a self-limited febrile illness that generally lasts 8 to 12 weeks. Thereafter, patients remain chronically infected in a latent or indeterminate phase. After 10 to 30 years of acute infection, the chronic phase can develop in 20% to 30% of patients, characterized by direct involvement of organs, including the heart[4]. In clinical practice, the most appropriate diagnostic strategy depends on the clinical stage of the infection.

Patients with confirmed positive serological tests should also undergo electrocardiography and echocardiography[5]. Heart disease is the most common and serious type. It occurs in 30% to 40% of patients with chronic infection, affecting the conduction system and the myocardium, which determines conduction abnormalities, ventricular aneurysms, heart failure and thromboembolism[4,5]. The diagnosis of Chagas disease is made by epidemiological history and by two or more positive serological tests. Patients with chronic Chagasic heart disease are staged according to the severity of myocardial damage and symptoms of congestive heart failure. Electrocardiographic evaluation is mandatory because the first signs of chronic Chagasic heart disease are usually conduction system defects and/or ventricular arrhythmias[6]. Myocardial fibrosis in cardiac magnetic resonance imaging is a frequent finding in Chagasic cardiomyopathy and has been associated with risk factors for poor outcome[7]. A case is reported at the third level of care.

CLINICAL CASE

A 33-year-old female patient who lives in an endemic area of Chagas disease, with no other relevant history, began her condition presenting stabbing chest pain, intensity 2/10 on the Visual Analogue Scale (VAS), as well as hemiparesis in the left arm managed by a general practitioner for 8 weeks, with persistence of precordial pain, for which he requests an electrocardiogram that shows a heart rate of 40 beats per minute (bpm). It is protocolized with laboratories that report hemoglobin 14.20 gr/dL, platelets 165,000/mcL, leukocytes 6.33/L, total neutrophils 4,080/mL, PT 12.5 sec, TPT 29.1 sec, INR 1.1, total protein 7.5 gr/dL, total bilirubin 1.1 mg/dL, calcium 9.20 mg/dL, sodium mEq/L 139, potassium 4.20 mEq/L, normal thyroid profile. Elisa for non-reactive acquired immunodeficiency virus, for which she is referred to a cardiologist who requests a Holter which shows pauses of 5.4 seconds with a minimum heart rate of 25 bpm and a maximum heart rate of 114 bpm (Fig.1, A-B), chest X-ray without evidence of cardiomegaly (fig. 2).

A transthoracic echocardiogram was performed with a report of LVEF 56%, PSAP 24 mmHg, minimal aortic and tricuspid insufficiency, normal transvalvular gradients, preserved systolic and diastolic function. Due to demographic history, trypanosoma cruzi IgG antibodies were requested with a positive result, starting management based on nifurtimox 120 mg every 8 hours for 8 weeks.

Candidate patient for management with a pacemaker for which a dual-chamber pacemaker is placed, with remission of symptoms. She is discharged from the service to continue with multidisciplinary outpatient management.

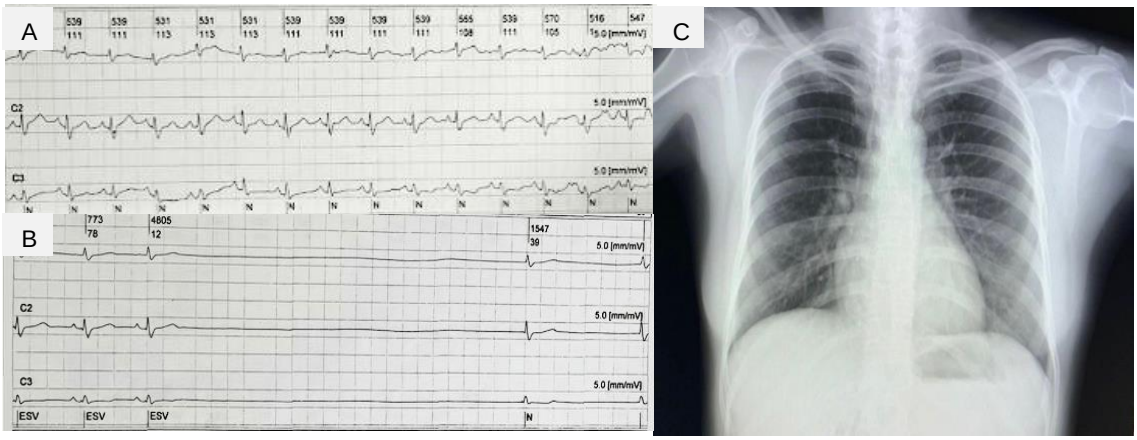

Figure 1. (A, B) Holter showing sinus tachycardia of 135 bpm alternating with sinus pause of 4.8-5.4 seconds, leading to a rate of 25 bpm (C) Chest X-ray with increased pulmonary hila, normal cardiac silhouette, and arches horizontal ribs.

DISCUSSION

In recent years, our knowledge about Chagas disease has expanded, managing to document that heart disease is the most severe manifestation, in this case electrocardiography is the most useful individual examination technique in these patients, since there is a relationship between the number of abnormalities identified on a single ECG and the severity of myocardial damage and the risk of death. For its part, chest radiography is used routinely to evaluate patients and is particularly useful in individuals with advanced disease. An increased cardiothoracic index, indicating cardiomegaly, is not a sensitive marker of left ventricular systolic dysfunction, but it is a powerful indicator of poor prognosis in Chagasic cardiomyopathy[8].

Pereira NMC, et al[9], defines that chagasic cardiomyopathy encompasses all cases of Chagas disease with cardiac involvement, the presence of at least one typical electrocardiographic abnormality in those patients who have positive serological tests against T. cruzi. Dilated cardiomyopathy refers to the hemodynamic pattern characterized by left ventricular (LV) enlargement with impaired segmental or global systolic function, regardless of electrocardiographic findings[9]. Other late manifestations include sinus node dysfunction leading to severe bradycardia, high-grade atrioventricular blocks, sustained or nonsustained ventricular tachycardia, and complex ventricular extrasystoles. In this spectrum, sudden death is the main cause of death, followed by refractory heart failure and thromboembolism[10].

In our patient, the presence of tachycardia-bradycardia syndrome was identified, so the protocol was carried out to rule out the most common causes of this condition, and due to epidemiological background, Chagas disease was considered as a differential diagnosis, which was evidenced by tests serological[11].

In this regard, Hines CKD, et al[12], mention that up to 14% of patients have bradycardia requiring pacemakers, present at any stage of the disease. Therefore, early detection of the infection is essential to achieve adequate follow-up, control and prevent its progression to severe forms of the disease.

CONCLUSIONS

Chagas disease should be suspected in all patients with an epidemiological history compatible with symptoms of cardiac involvement. It should be prioritized from primary care, where the patient should be initially assessed, take a good history and clinical examination. We believe that active

intervention in endemic areas of the disease is especially relevant.

FUNDING/SUPPORT
No financial support was received for this study.

CONFLICT OF INTEREST
The authors declare that they have no conflict of interest.

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