

Sick Sinus Syndrome and Chronic Chagas Cardiomyopathy.

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Sick Sinus Syndrome and Chronic Chagas Cardiomyopathy

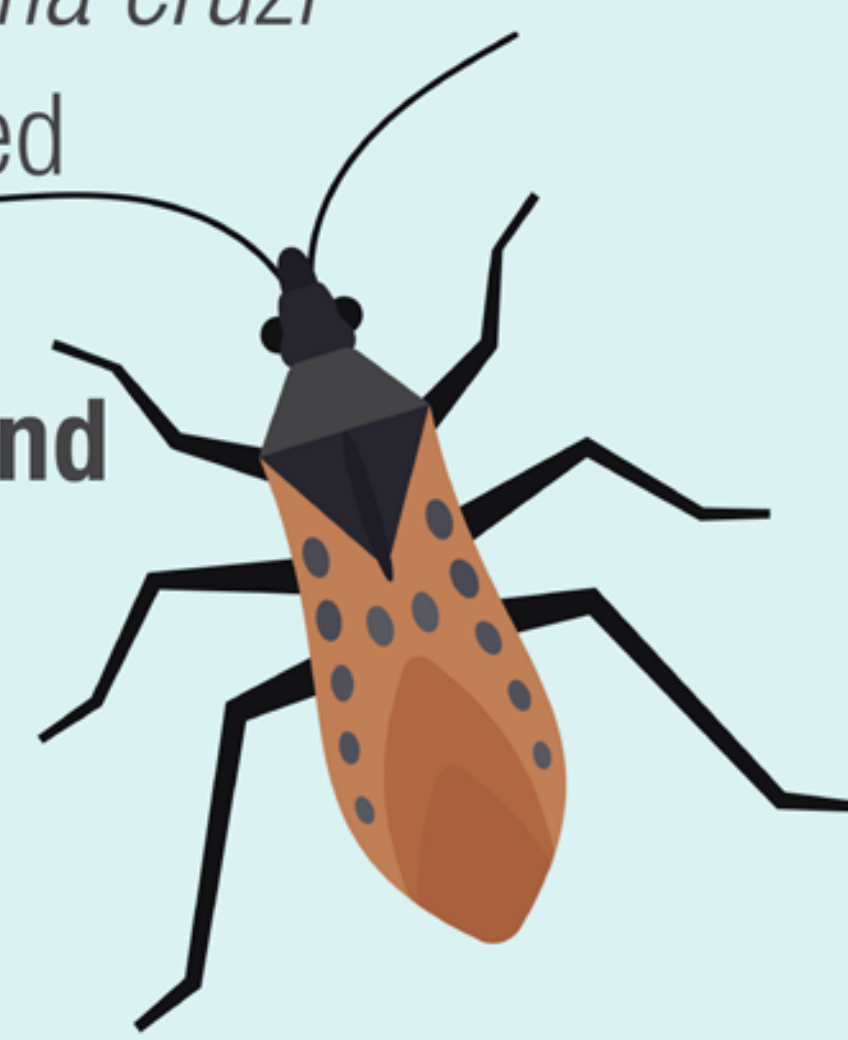
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BACKGROUND

- Chronic Chagas Cardiomyopathy (CCC), a sequela of persistent *Trypanosoma cruzi* parasitemia, is the most common form of dilated cardiomyopathy in Latin America. Up to 7 million people worldwide are affected, although a significant majority of those affected are in Latin America.¹
- Relevance: Over 300,000 people in the USA are infected with Chagas disease qualifying it as 1 of 5 “Neglected Parasitic Infections (NPIs)” by the CDC.²
- There are 3 distinct phases of Chagas heart disease: acute, latent, and chronic. During the first two phases patients are usually asymptomatic without physical signs, EKG abnormalities, or radiographic evidence of cardiac involvement. However, by the time patients present with symptoms and signs of heart failure, they are subsequently diagnosed with Chronic Chagas Dilated Cardiomyopathy.³
- Importance: Up to 30% of chronically Chagas-infected people can develop cardiac alterations leading to deadly arrhythmias such as Sick Sinus Syndrome (SSS).¹

Chagas disease is caused by the parasite *Trypanosoma cruzi* and is spread by infected triatomine bugs. It can cause **serious heart and gastrointestinal problems.**^{2, CDC}

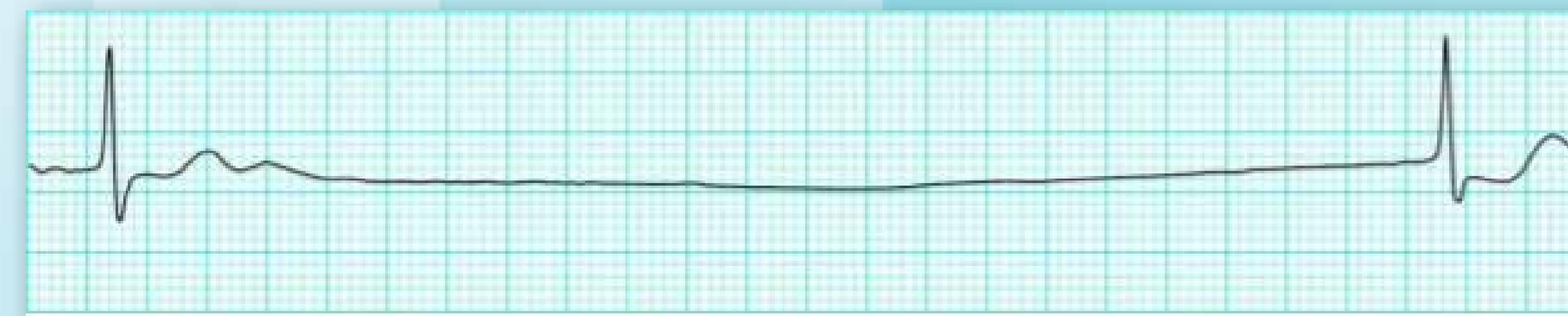


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CASE PRESENTATION

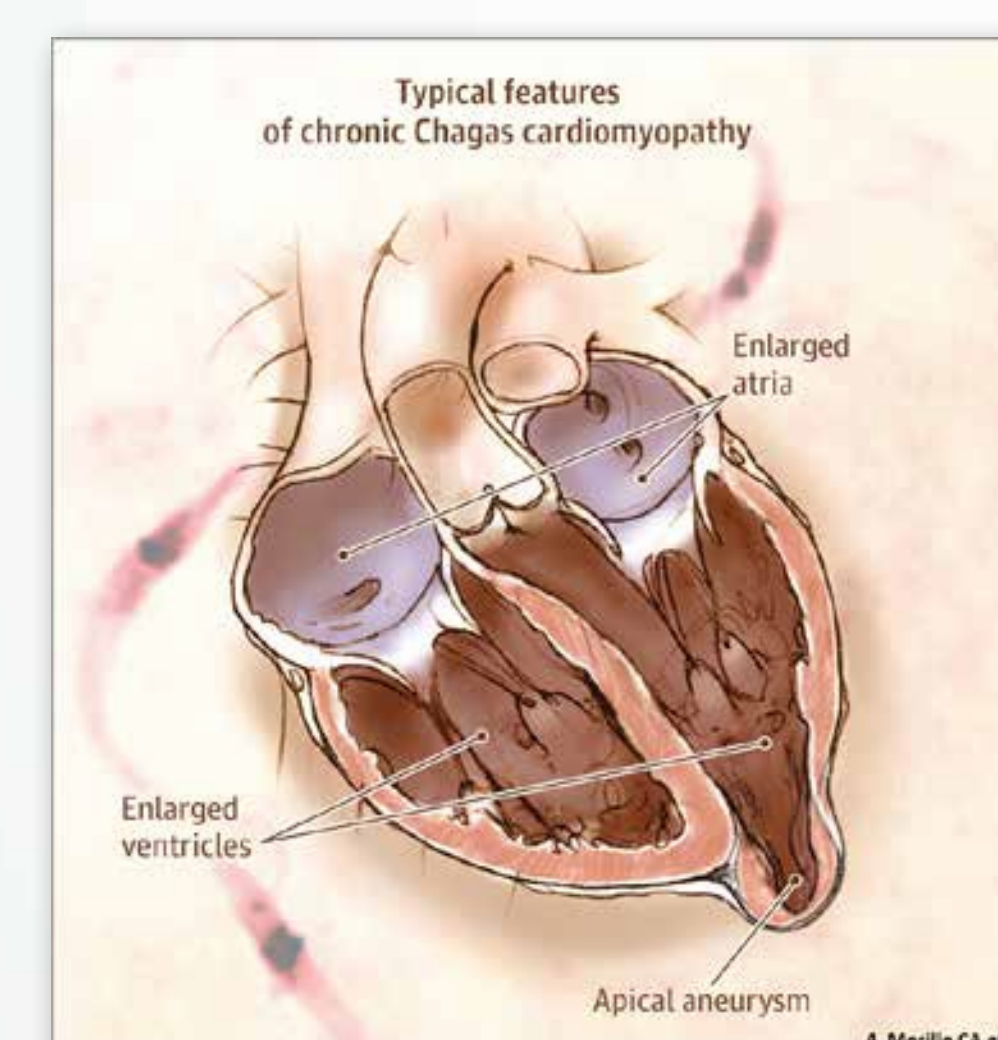
- A 57 year old female from El Salvador with no past medical history presented from an outside hospital with lightheadedness. She denied chest pain or shortness of breath. Physical exam demonstrated jugular venous distention and abdominojugular reflux. Initial studies demonstrated sinus bradycardia with a 4.4s pause on EKG, negative troponins, and cardiomegaly on chest x-ray.



Sinus bradycardia with 4.4 second pause followed by a generation and conduction of a junctional escape beat.

RESULTS

- Negative: TSH, Lyme, 5-HIAA, ANA, CMV IgG/IgM, Parvovirus IgG/IgM, HIV, and TB.
- Chagas: IgM negative, IgG positive 7.21.
- 2D Echo: Severely reduced left ventricular systolic function, global hypokinesis with LVEF 25%, enlarged right ventricular size with reduced right ventricular systolic function and high right atrial pressures, and severe diastolic dysfunction.
- Left heart catheterization: Non-obstructive coronary circulation.
- Right heart catheterization: Fick cardiac index 1.54 L/min with Fick cardiac output 2.62 L/min.



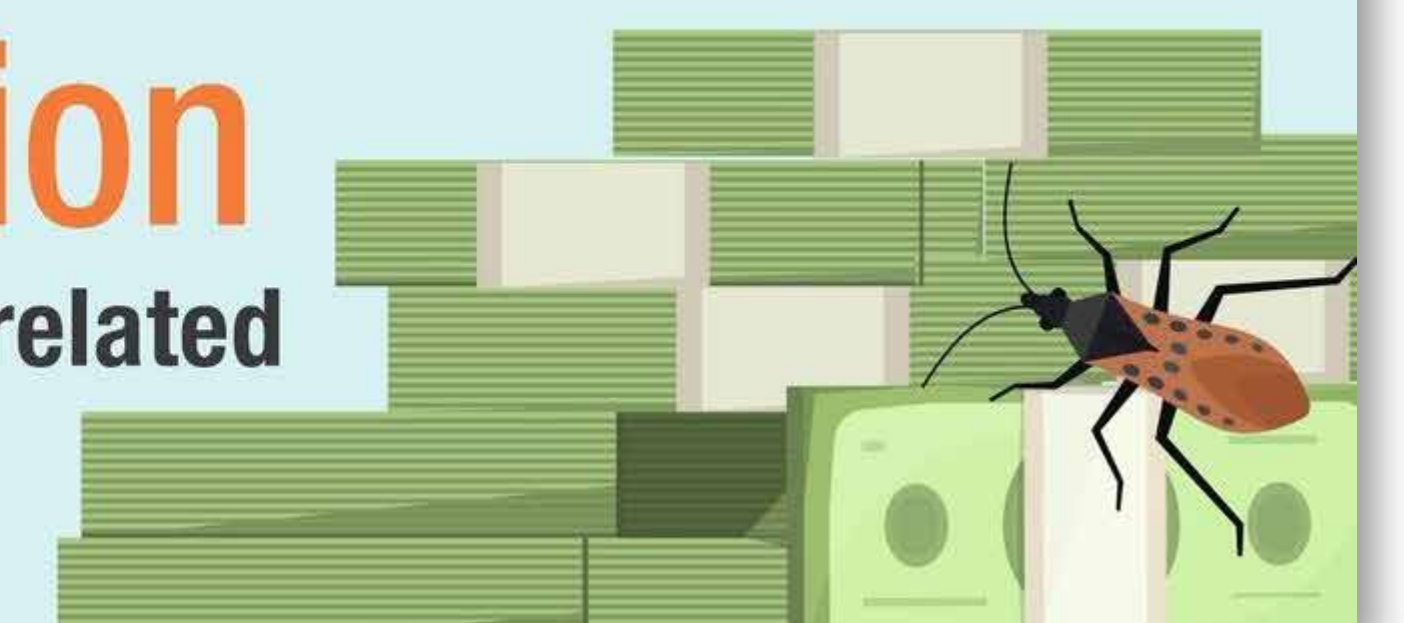
INTERVENTIONS

- Transvenous pacemaker followed by pacemaker-ICD.
- Beta blocker and Angiotensin-converting-enzyme inhibitor.
- No anti-trypanosomal therapy per 2015 BENEFIT Trial.

DISCUSSION

- Permanent Pacemaker (PPM) implantation indication: SSS with documented symptomatic bradycardia including symptoms from frequent sinus pauses (ACCF/AHA/HRS Class I, Level C).⁵
- Implantable cardioverter defibrillator (ICD) implantation, primary prophylaxis indication: Chagas cardiomyopathy (ACC/AHA/HRS Class IIa, Level C).⁵
- Per the 2015 BENEFIT trial and the CDC recommendation: There is no significant reduction in cardiac complications or death with anti-trypanosomal therapy in those with Chronic Chagas Cardiomyopathy. Angiotensin-converting-enzyme inhibitors (ACEi’s) or angiotensin receptor blockers (ARBs), beta blockers, and diuretics are the mainstay of therapy.^{2,4}
- Looking forward: Vector control. Public health initiative: educating at-risk communities about preventive measures: thoroughly cooking food, sleeping in sheltered housing, wearing protective clothing, and using bug repellent on the skin when outdoors.^{1,2}

Chagas disease accounts for at least **\$627 million** in global healthcare-related costs annually.^{*2, CDC}



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