CLINICAL CASE REPORTS

Clinical Case Reports Journal

ISSN: 2767-0007

Permanent Pacemaker Implantation in Sick Sinus Syndrome Patient: A Case Report

Spoorthi Sree Potru*

Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Andhra Pradesh, India

*Corresponding author: Spoorthi Sree Potru, Department of Pharmacy Practice, Chalapathi Institute of Pharmaceutical Sciences, Chalapathi Nagar, Lam, Guntur, Andhra Pradesh 522034, India. E-mail: spoorthisree225@gmail.com

Article Type: Case Report

Compiled date: May 03, 2024

Volume: 5

Issue: 1

Journal Name: Clinical Case Reports Journal

Publisher: Infact Publications LLC

Journal Short Name: Clin Case Rep J

Article ID: INF1000279

Keywords: Sick sinus syndrome; Bradycardia; Pacemaker

Cite this article: Spoorthi Sree Potru. Permanent pacemaker implantation in sick sinus syndrome patient: a case report. Clin Case Rep J. 2024;5(1):1–2.

Abstract

Sick sinus syndrome is a group of syndromes wherein the patient's signs and symptoms and an ECG examination are typically used to diagnose the condition. The most common therapeutic approach for bradycardia is the implantation of a permanent cardiac pacemaker. Heart pacemakers have changed from single-chamber, non-programmable devices to dual-chamber, highly programmable devices. A patient with a pacemaker must be closely monitored for the duration of their life to ensure both their safety and the best possible use of their device. The implantation of the device is only the first step in this process. Even though pacemaker implantation is considered low-risk, patients may experience unknown complications from the procedure, including technical difficulties and complications that arise during and after the procedure.

Introduction

Sick sinus syndrome is caused by impaired electrical automaticity of the sinus node or impaired conduction of electrical impulses generated by the sinus node to the surrounding atrial muscles, resulting in sinus bradycardia, sinus block, or sinus arrest on an electrocardiogram [1]. The two primary categories of etiologic factors are extrinsic and intrinsic causes. Anomalies related to fibrosis, ion channel formation, and sinus node function are intrinsic causes; medications and metabolism are extrinsic causes [2,4]. Bradycardia, including atrioventricular block and sick sinus syndrome, is caused by a lack of reflow or slow flow in these arteries. Though the mortality rate for patients who are left untreated is 2%, the prognosis is good when treatment intervention is provided [3,5]. It is more common in older adults and rises with age [6,7]. We are here with a case report of sick sinus syndrome with a surgical procedure of permanent pacemaker implantation.

Case Description

A 69-year-old female patient was in the hospital due to palpitations and chest discomfort, along with dyspnoea. The blood pressure and heart rate were 60/50 mm Hg and 41 bpm on admission, respectively. Her family history and social status were unknown. Her 2DECHO revealed no structural or functional abnormalities. In addition, a subsequent Holter examination indicates sinus node dysfunction with an average heart rate of 36 bpm, a maximum heart rate of 71 bpm, and a minimum heart rate of 32 bpm. Her CAG notes revealed normal coronary arteries with the advice of permanent pacemaker implantation. Her ECG revealed Atrial fibrillation with FVR (Fast ventricular response/rate). With all the subjective and objective evidence, she was diagnosed with sick

sinus syndrome. On her 11th day of admission, the permanent pacemaker (dual channel) implantation was done with no other complications. She initiated the therapy with antihypertensives, nutritional supplements, and anti-platelets. Anti-coagulant therapy (heparin) was included in the treatment of the first seven days of the hospital stay. She has a regular follow-up every month. No other Individuals were diagnosed with sick sinus syndrome in 3 Months ((December, 2023–March, 2023).

Conclusion

Sick sinus syndrome patients often have guarded outcomes due to advanced age, comorbidities, and atrial arrhythmias. Sinus node dysfunction causes organ hypo-perfusion symptoms. Treatment is a permanent pacemaker with a low risk of sudden cardiac death, making it an advantageous therapeutic option.

Conflict Of Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. Informed consent was obtained for this publication.

References

1. Liang J, Luo S, Huang Bi. Case Report: *SCN5A* mutations in three young patients with sick sinus syndrome. Front Cardiovasc Med. 2023;10:1294197.
2. Hayashi H, Abe A, Oguma T, Ito Y, Nakayama A. Sick sinus syndrome diagnosed after a sinus arrest during treatment for zygomatic fracture: a case report. Hayashi et al. BMC Oral Health. 2023;23(1):676.
3. Yokota S, Igarashi N, Doi T. Efficacy of coronary sinus pacing for cardiogenic shock due to percutaneous coronary intervention-induced sick sinus syndrome: two case reports. Intern Med. 2023; 62(22):3355–3360.
4. Elkattawy S, Younes I, Alyacoub R, Fichadiya H, Dhanoa P, Kotys J, et al. A rare presentation of sick sinus syndrome: generalized seizures. Cureus. 2022;14(3):e23631.
5. AHA Journals. Congenital Heart Disease [internet]. Texas: AHA; 2024.
6. Brunner M, Olschewski M, Geibel A, Bode C, Zehender M. Long-term survival after pacemaker implantation. Prognostic importance of gender and baseline patient characteristics. Eur Heart J. 2004;25(1):88–95.
7. Prasad RV, Kumar N, Singh BP, Tripathy N, Ahmed A. Permanent Pacemaker Implantation - IGIMS Experience. Journal of Indira Gandhi Institute Of Medical Sciences. 22017;3(1):22–24.