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Sick sinus syndrome combined in Wallenberg syndrome

Kil-Byung Lim[1†], Hong-Jae Lee[1], Jeehyun Yoo[1], Jiyong Kim[1], Hojin Lee[1*]

Ilsan paik Hospital, Inje University, Department of Physical Medicine and Rehabilitation[1]

Background
Lateral medullary infarction causes Wallenberg syndrome with various symptoms including ataxia, numbness of either the ipsilateral face or the contralateral body, vertigo, and dysphagia. However, rare cases present with cardiac complications, which can cause life-threatening Result. Nuclei of the medulla play an important role in the autonomic regulation of the cardiovascular functions and in particular, the nucleus of the solitary tract is involved in the sympathetic and parasympathetic outflow. So, Lesions in this area like Wallenberg syndrome can therefore lead to cardiac dysfunction. Wallenberg syndrome can affect the central sympathetic neurons which normally inhibit the nucleus of the solitary tract. So, the disinhibition of the nucleus tractus solitarii may led to an increase of parasympathetic outflow Resulting in bradycardia and sick sinus syndrome. As this can cause unexpected sudden death, clinicians should pay attention to sick sinus syndrome combined in Wallenberg syndrome.

Case report
A 55-year-old man visited our cardiovascular center for palpitation two times in 2010, 2013 respectively. At that time, he got cardiac function test including electrocardiogram (ECG), Holter, exercise stress test, and transthoracic echocardiography and all tests showed normal range. After that, his symptom subsided that he didn't get medical treatment and check up anymore. Four years later, he visited our hospital again due to dizziness, left facial numbness, and vomiting. In the Brain MRI, it showed acute infarction in left lateral medulla oblongata (Figure 1). So, he was admitted to department of neurology and began dual anti platelet therapy including aspirin and clopidogrel. One week later, he was transferred to our department for rehabilitation. However, he constantly complaint relapsed palpitation and lasting dizziness that we performed ECG and 24 hour Holter again to see any abnormalities. In Holter, we could find increased RR interval with average of 831ms (Figure 2), frequent 1,712 beat of bradycardia (≤60 bpm), and sick sinus syndrome with maximal pause of 1.9 second (Figure 3). So, we proceeded consult with cardiovascular department and decided to implant pacemaker if sinus pause lasts more than three second with symptom progression. Fortunately, his symptoms disappeared. Two weeks later, follow up Holter showed relatively decreased RR interval with average of 771ms (Figure 2), 745 beat of bradycardia (≤60 bpm) and no sick sinus syndrome with maximal pause of 1.18 second. So, cardiologist recommended to observe his symptoms without any medical interventions.

Conclusion
Because bradycardia and sick sinus syndrome are far less common than tachycardia in Wallenberg syndrome, clinicians could ignore when ECG shows normal sinus rhythm.

However, as it can cause unexpected sudden death if we do not perform appropriate medical intervention, clinicians should consider further evaluation including Holter to check sick sinus syndrome.

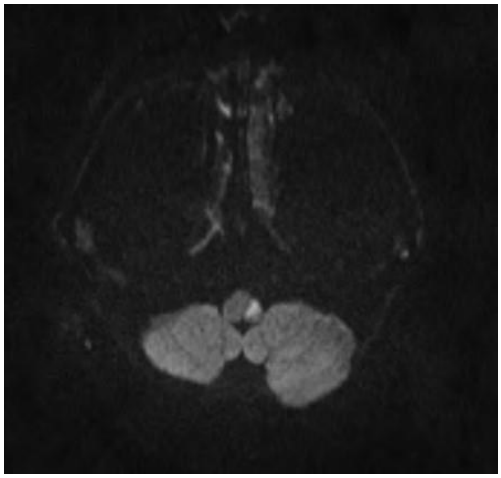

Fig 1. Brain MR

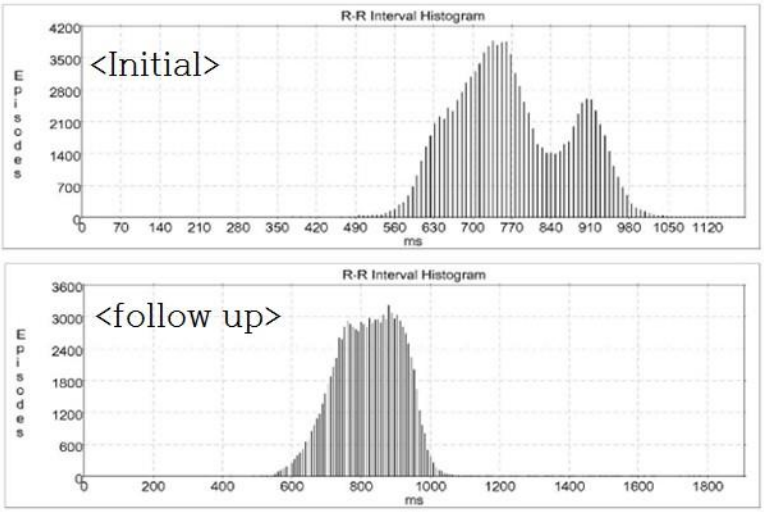

Fig 2. Initial and follow up RR interval in Holter

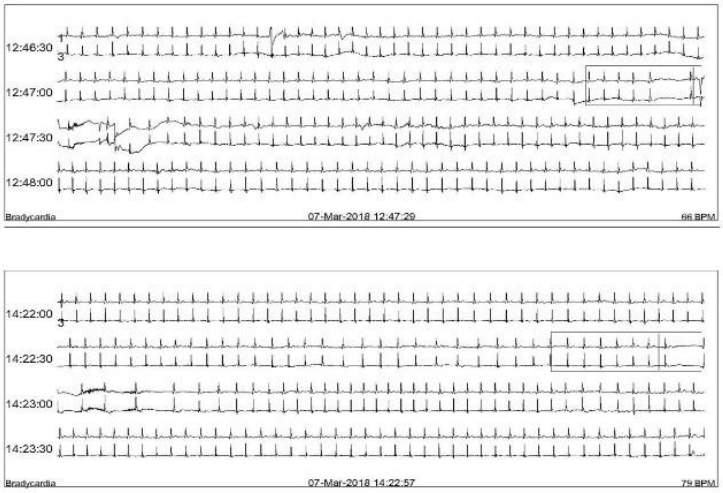

Fig 3. Holter presenting sick sinus syndrome