# Parkinson's disease with Sick Sinus Syndrome -A case report-

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Received 10 March 2015; received in received from 13 March 2015; accepted 17 March 2015

## Introduction

Autonomic symptoms are frequently seen in patients with Parkinson's disease (PD). These include urinary symptoms, sweating disturbance, constipation, sexual dysfunction and blurred vision [1]. Dysregulation of parasympathetic cardiovascular control mechanisms is a frequent complication of early stage PD [2,3]. Such dysregulation can manifest itself as a range of measurable changes in cardiac function such as heart rate variability and orthostatic hypotension. It is thought that these autonomic symptoms may be linked to PD medication as well as to neurodegenerative disease-related changes in the function of the autonomic nervous system [4]. We report a case of PD with sick sinus syndrome.

## Case report

The patient was a 65-year-old woman. There were no important medical issues in the family history or past history. The patient's employment history included work in a sewing factory. Tremor in both hands developed during her work (sewing machine work) in 2007. Walking gradually became more difficult. A traffic accident was experienced on May 20, 2008. She received a blow to the head, and the tendon of the shoulder tore. Surgery was undergone at the Red Cross hospital. Rehabilitation was received at a hospital nearby. Head-dropped syndrome developed from about November of the year. Gait disturbance and the tremors worsened in March, 2009, when she was hospitalized in Tokushima National Hospital. Her height was 152 cm, and her weight was 71.8 kg. There was remarkable head dropped syndrome (Figure 1). Laboratory examination revealed normal results. ECG was normal (Figure 2). Brain MRI showed slight brain atrophy and small infarcts. Chain Stokes type breathing was found in a respiratory function test during sleep on June 15, 2012. Because breathing during sleep was unstable, NIPPV was started. On April 22, 2013, the patient experienced bradycardia in the night. There was arrest of up to eight seconds according to Holter monitoring (Figure 3). Eternal pacemaker grafting was performed on April 26. Aspiration pneumonia developed on May 2. Respiratory failure worsened rapidly on May 5. DIC occurred on May 8. She died on May 11.

## Discussion

Autonomic physiology in PD is of particular interest because it underlies several non-motor symptoms, including orthostatic dizziness, constipation, urinary problems, erectile dysfunction, drooling, sweating and swallowing problems[5]. Autonomic pathways are also of interest because studies suggest PD neuropathology occurs early in the course of the disease in peripheral structures, and may spread along autonomic pathways to involve the central nervous system [6-8]. There is evidence that autonomic involvement can occur in the early stages of PD; in one study, 38% of patients with abnormal autonomic function tests were in the first five years of their disease [9]. Previous research has suggested no significant association between autonomic

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dysfunction and mortality in people with PD [10]. Few case reports have described associations between autonomic failure and sick sinus syndrome. There are two case reports of PD with sick sinus syndrome [11,12]. In our patients, SSS occurred in an advanced stage of Parkinson's disease.

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**Figure 1**. Patient with Parkinson's disease and head drop syndrome.

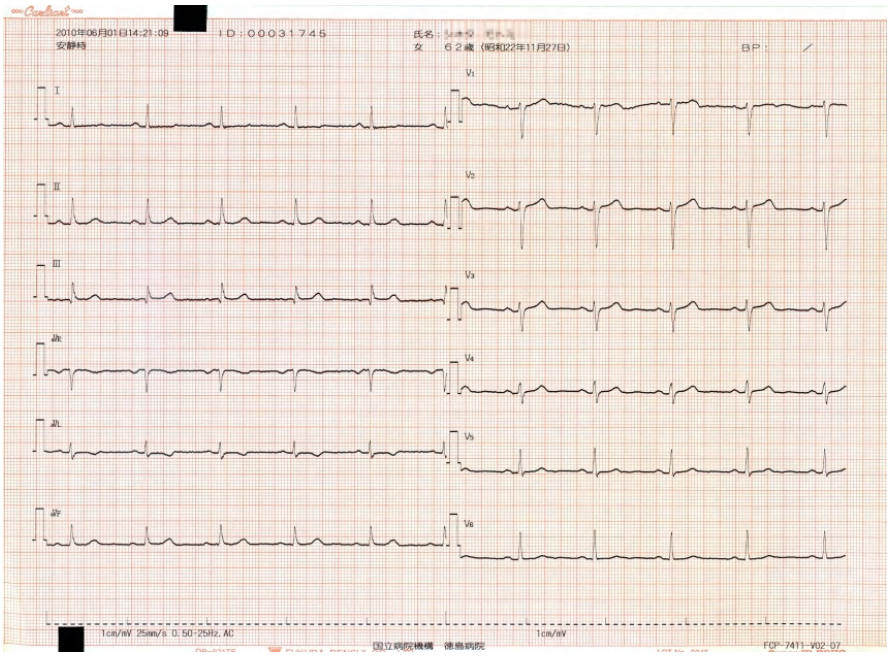
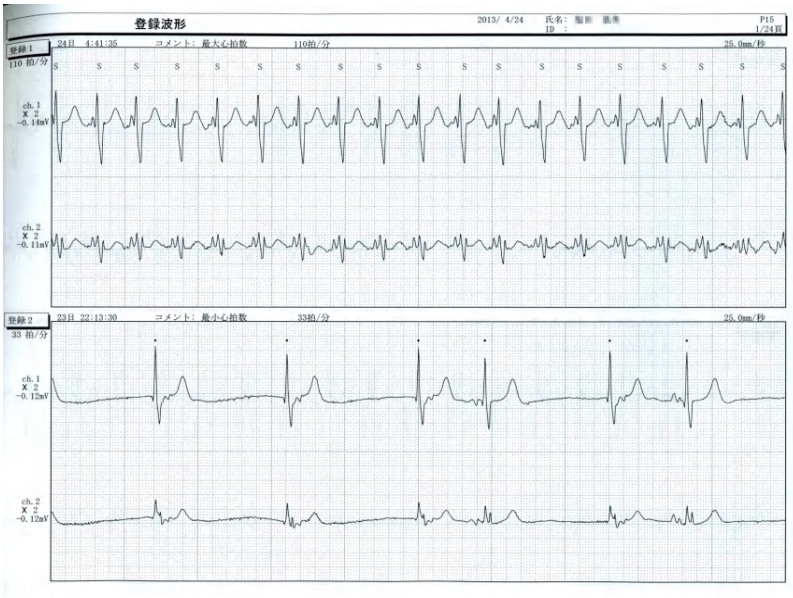



**Figure 2.** ECG was normal on March, 2009.




A.


B.

**Figure 2.** A.B. There was in the night. There was bradycardia (A) and arrest of up to eight seconds (B) according to Holter monitoring on April 22, 2013.