

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

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Received 20 February 2014; received in received from 10 March 2014; accepted 17 March 2014

### 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 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 was no important notice in her family history or past history. Her working life history included sewing factory duty. A tremor of both hands developed during work (sewing machine work) in 2007. Walking gradually became more difficult. A traffic accident was experienced on May 20, 2008. She received a blow on the head, and a shoulder tendon was torn. Surgery was performed at the Red Cross hospital. Rehabilitation was received at a hospital nearby. Head dropped syndrome developed from about November of the same year. Gait disturbance and worsen tremors developed in March 2009, at which time she was hospitalized in Tokushima National

Hospital. Her height was 152cm, and the weight was 71.8 kg. There was remarkable head dropped syndrome (Figure 1). Laboratory examination revealed normal. ECG was normal (Figure 2). A 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, bradycardia occurred during the night. There was an arrest of up to eight seconds according to Holter monitoring (Figure 3). Eternal pacemaker grafting was performed in 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 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].

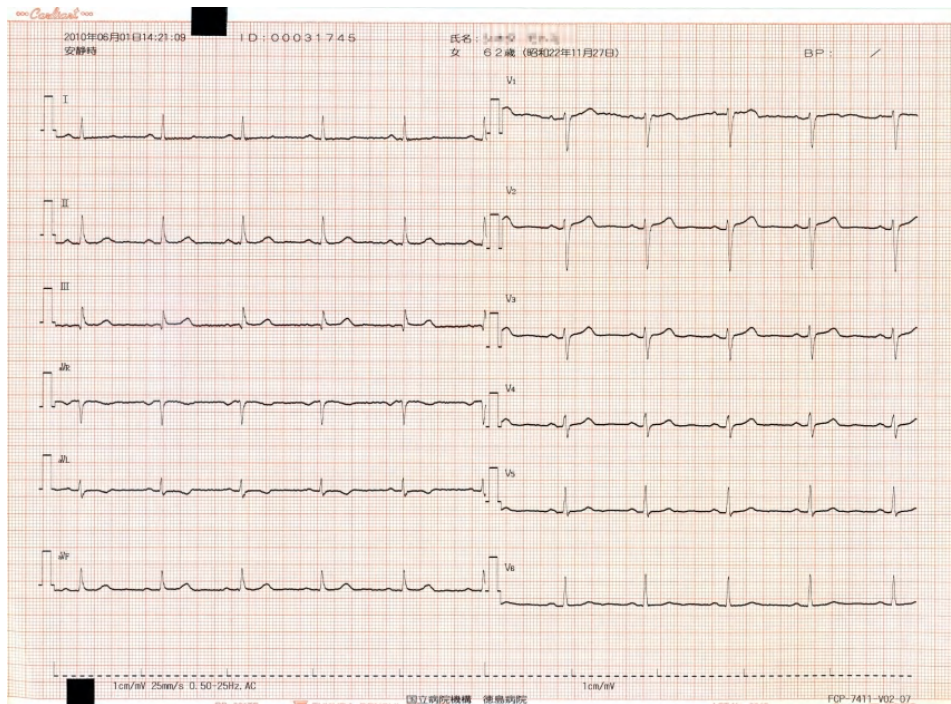
Previous research has suggested no significant association between autonomic dysfunction and mortality in people with PD [10]. Few case reports have described associations between autonomic failure and sick sinus syndrome. There are two case reports of PD with sick sinus syndrome [11,12]. In our patients, SSS occurred at 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.



Figure 3. 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.