

**Case Report****Levodopa - induced creative awakening in a patient with Parkinson's disease**Sanju George^{¶1}, Jacob Chacko², Sheetal Cyriac³¹Department of psychiatry and psychology, Rajagiri School of Behavioural Sciences and Research, Rajagiri College of Social Sciences, Kochi, Kerala, India²Consultant Neurologist, Rajagiri Hospita, Aluva, Kerala, India³Rajagiri School of Behavioural Sciences and Research, Kochi, Kerala, India*(Received 23 March 2019 and accepted 19 June 2019)*

ABSTRACT: Parkinson's disease is primarily a neurodegenerative disorder and presents with neurological symptoms but it can also have accompanying psychiatric symptoms. In addition, in some patients with Parkinson's disease there can be an awakening of their creativity, which can take several forms. Such creativity can be seen in art-naïve patients or in whom the creativity lay dormant. Although the precise mechanism for this phenomenon is not understood, treatment with levodopa and dopamine agonists have been considered responsible in some cases. Here, we describe a patient with Parkinson's disease in whom levodopa treatment triggered a latent creative skill that was dormant since childhood. Through the patient's own and his wife's eyes, we discuss the clinical benefits of this phenomenon.

KEY WORDS: *Creativity; Levodopa; Parkinson's disease*

INTRODUCTION

Parkinson's disease, first described by James Parkinson in 1817¹ is a chronic progressive neurodegenerative disorder characterized by neurological deficits such as tremor, muscular rigidity, bradykinesia and postural abnormality². Studies have found an approximate prevalence rate of 1% among those aged 60 years and above³, but studies from India have noted prevalence rates to vary from 0.0033 percent to 0.0192 percent⁴. Medications such as levodopa, anticholinergics, amantadine, selegiline, etc. are beneficial but levodopa is the most widely used and the most effective⁵.

Patients with Parkinson's disease (PD) also experience wide-ranging psychiatric symptoms such as perceptual problems, hallucinations, cognitive deficits, and mood changes^{6,7}.

Furthermore, treatment with dopamine agonists has been found to lead to the development of impulse control disorders (ICD) such as compulsive gambling, buying, sexual behavior, and hoarding in many of these patients.

Several cases have been described where artistic creativity in the form of painting, drawing, sculpting, writing, poetry, etc. has emerged while on treatment with levodopa and dopamine agonists⁸. Such creativity has either been reported in the art-naïve or in some other cases it has been a re-emergence of such skills that were latent/dormant since childhood.

Parkinson's disease has not been subjected to extensive research in India and to the best of our knowledge such levodopa induced creative output has not been systematically studied in India.

In this case report, we describe a patient who had creative awakening (started painting) while on levodopa treatment for Parkinson's disease. This patient had had a latent creative skill in his childhood. We also discuss the clinical benefits of this phenomenon, through the patient's and his

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wife's eyes. Clinicians who see patients with Parkinson's disease should be aware of this.

CASE DETAILS

Mr. R, a 63-year-old farmer from Kerala, India, was diagnosed with Parkinson's disease in 2011. He had no significant past medical, psychiatric or family history. For the first two years of suffering from PD, he was treated with Pramipexole and Rasagiline. In 2014, he was started on levodopa. Although Mr. R used to paint as a child he hadn't pursued it since. He completed his schooling and college locally and then joined his father in farming. He got married in his late 20s and lives with his wife as his children have married and left home. Other than being actively engaged in farming, which is his livelihood, he has no specific hobbies or interests. His normal day would consist of working in his farm from dawn to dusk, then returning home, watching a bit of television and then retiring to bed. He was very much a family man who never drank or smoked. He had a few good friends but was never a very social person. He was physically and mentally well until PD struck him. He had tremors of hands, which got worse progressively and bradykinesia. This limited his independent mobility and he found it difficult to get out and about. He couldn't engage as well in farming as he used to. He sought pharmacological input for his PD at an early stage. Few months into starting levodopa, his dormant creativity was awakened and he started drawing and painting (**Figure 1** and **2**). He paints 2 to 3 pictures on most days. He said he enjoys doing it and he spends most of his spare time painting. He sells his paintings and helps the poor with health care. Mr. R does not have any comorbid psychiatric disorder or medical disorder. He is on no other medication. Apart from painting, he doesn't have any other hobbies at present and there has not been any other creative urge. He spends his time painting, is busy trying to sell his paintings, and helping the underprivileged. Because of the limitations in mobility, he does not farm anymore. His extended family looks after it. He is now on levodopa, in addition to Pramipexole and Rasagiline. His tremors are less but he continues to have bradykinesia and rigidity, although these symptoms tend to fluctuate over time. He has 'good' days and not so good days. He can now walk independently and can manage most of his activities of daily living fairly well. He stays at home with his wife. He does not get involved in the running of his farmland but is cognitively intact so can manage his finances. His memory, thought and speech are unaffected. He is very compliant with medications and has regular 6-monthly reviews with the neurologist.

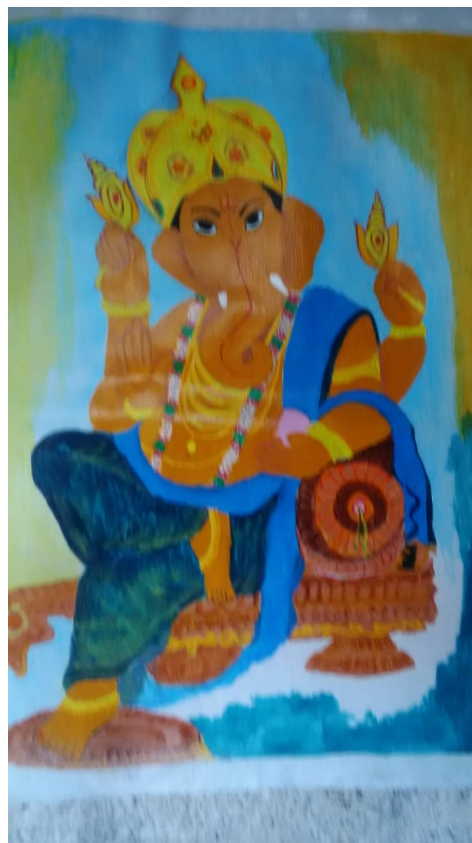


Figure 1: Painting made by Mr. R



Figure 2: Painting made by Mr. R

Patient's account of his new found creativity

'I'm happy about how things are now. I was very upset initially when I was diagnosed with PD. I thought – 'why, me? What have I done to deserve this fate?'. I wasn't coping very well with my illness. I was also getting depressed, my self-confidence was really low. That is when I saw my grandchild coloring, and I thought I should give it a go too. I used to draw and paint a little bit as a child, no more than most children. I don't remember being very good at it either. So, I slowly started painting, and I was surprised myself. Gradually my confidence increased and I started taking it up more seriously. I started painting 2 or 3 pictures most days, and I really enjoyed doing it. I became more positive as I was being productive. I started focusing more on what I could do and less on what I couldn't do. I was blaming PD less and less. I did not see myself as a patient anymore. I feel I am worth more. Although initially I did not think of making money out of it, some of my friends and neighbors bought some of my paintings. At first I thought they were doing it out of sympathy. But over time, more and more people bought my paintings. Now it is my livelihood. In fact, with the money I make I am also able to help other people who have financial difficulties. This has given me a real purpose in life. I feel I am worth something because I am contributing to my own life, my family's lives and my society. I encourage anyone with disabilities to think about what they can do and not just on what they cannot do. It is important to remain positive as such an outlook will help immensely with how one leads his life. It will also make those around you happier.'

Patient's wife's account (Mrs. R)

'R' was very depressed on being diagnosed with PD. He had become socially isolated and was very negative in his outlook. He would just sit around the house all day and not do a lot. He would often say he can't and not even try to do things. He saw himself as a patient and a liability to the family. In fact, he had even talked about death and that he was better off dead.

The past year or so, after he started painting, I can't believe the transformation he has had. In fact, I can't believe it is the same person. He is always positive and smiling. He has got a sense of purpose. He is brimming with confidence when he is talking about what he wants to do with his life. He wants to do more and more, and wants to help as many people as he can. Whenever he sees the doctor, he wants to talk less about his symptoms and more about his paintings. I still don't know how it started, he tells me he just saw our grandchild

coloring and he had an epiphany. It truly is God's grace. I can't thank him enough. That day changed his life and ours. I also don't see him as a patient anymore. We do most things that normal families do, we all feel normal.'

DISCUSSION

Here we have described a patient with PD, who had some creative/artistic skills in childhood, but it appears was awakened by levodopa. Creative awakening in patients with PD, in the form of painting, sculpting, drawing, writing prose or poetry and so on⁸, has been reported before. Mechanisms proposed to explain such creative awakening include: creativity expresses sublimation; creativity is a result of hyperactivity and behavioral disinhibition; development of artistic activities is a consequence of enhancing premorbid personality; or creativity is a result of stimulation by dopamine agonists⁹.

It is not the purpose of this case report to debate the theoretical basis for creative awakening in PD but to highlight the immense benefits of such a phenomenon to patients. Whatever the etiological basis, the patient described above said that such creative output made him feel better in himself and thereby enhanced his sense of well-being. He also felt more productive and useful, and it also gave him a new sense of purpose in life. Hence it can be assumed that it helped him cope positively with PD and its deficits. From a clinician's perspective, this is a helpful outlet for patients' self-expression, leading to better mood state, enhanced self-esteem and better QOL. Such artistic expression can be therapeutic to patients. In our opinion, more clinicians need to be aware of this phenomenon.

Conclusion

Some patients with PD, on levodopa or dopamine agonists, report either an enhancement of their existing artistic and creative abilities or an emergence of such abilities in the previously art-naïve. Here we narrate the story of a patient who found such artistic expression to be very beneficial, enhancing his sense of well-being. Hence we make the case for clinicians to be aware of this phenomenon so it can be better understood and explored for patient benefit.

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