



Painless Limbs and Moving Extremities Syndrome: A Variant of Painful Moving Limbs and Extremities

Sandip Kumar Dash^{1*}

¹Department of Neurology, Apollo Hospital, Dhaka, Bangladesh.

Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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Case Study

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ABSTRACT

Painless limbs and moving extremities is a rare condition. Only few case reports or short series of cases are reported. It is believed to be a variant of painful legs and moving toes. It can affect the lower limbs causing painless moving legs and toes or can affect the upper extremities causing painless moving hands and fingers. Various mechanisms of this condition have been postulated, but it requires further studies regarding the exact mechanism of this type movement and the treatment of choice for this condition. Here a case of painless moving lower extremity and upper limb is described, who showed a good response to combination of clonazepam and gabapentine.

Keywords: Painless limbs and moving extremities; PoLMT; painful legs and moving toes; PLMT; painless moving hands and legs.

1. INTRODUCTION

Painful legs and moving toes (PLMT) is characterized by pain in the lower limbs associated with involuntary movements of the

leg, particularly in the feet and toes. Patient may have involvement of one leg or both legs. Painful legs moving toes (PLTM) was described in 6 patients by Spilane [1]. Since then case reports [2] or short series [3] of PLMT are described.

*Corresponding author: E-mail: drskdash@yahoo.co.in

The painless variant of PLMT was described in 1993 by Walter [4]. PLMT is linked to multiple causes like peripheral neuropathy, spinal cord and cauda equina injury, radiculopathy, peripheral trauma, herpes zoster [5], Hashimoto's disease [6], chemotherapy [7]. PLMT is a condition requiring clinical diagnosis, as there is no confirmatory test to diagnosis. Painless variant of PLMT is rare. It can affect the lower limbs causing painless legs and moving toes or it can affect upper extremities causing painless moving hands and fingers. Few cases have been described, involving the lower limb due to ischemic stroke [8], Wilson's disease [9], spinal cord compression [10], or may involve the upper extremity [11,12]. Here the case described was having involvement of both upper and lower extremities. In a case report, it was seen that a low dose of clonazepam is effective in the treatment of painless legs and moving toes syndrome (PoLMT) [13] Here a 52 years female with painless movement involving both upper and lower extremities is described, who responded well to combination of clonazepam and gabapentine

2. CASE PRESENTATION

A female 52 years, non-hypertensive, presented with acute onset of painless involuntary movement of the right legs and hand both at rest and on walking for 3 days duration. The movements were disappearing while the patient was sleeping. She is having history of type 2 diabetic and was poorly controlled with oral hypoglycemic drugs. She also have history of post-operative pituitary micro adenoma ,received radiotherapy 7 years back, and was on bromocryptine 1.25 mg once a week. On examination she was having continuous involuntary painless flexion and extension and abduction –adduction of the foot and flexion extension of toes, and in the upper extremity continuous irregular arrhythmic slow movements of hands and fingers, which were increased while walking. These movements were painless. Rest of the neurological examinations were normal. These movements were absent while the patient was sleeping as told by the patient's husband. Her complete blood counts including the peripheral smear, serum ferritin, TSH (thyroid stimulation hormone), and Liver function tests were normal, except for the blood sugar (HBA1c 10 against good control value below 7) which was poorly controlled. MRI (Magnetic Resonance Imaging) brain shows the post-operative status of pituitary gland with no increase in size of the

adenoma. Her cervical and lumbar magnetic resonance imaging study only revealed signs of osteoarthritis, with compression of L5 and S1 roots. Her NCS (Nerve conduction studies) showed lumbosacral radiculopathy. After 2 days of treatment with clonazepam, there was some improvement in these involuntary movements, but was still having these involuntary movements. After adding gabapentine on third day, these movements disappeared completely on 7th day of treatment.

3. DISCUSSION

The case described is probably an incomplete form of PLMT, as several authors have believed that this PLMT can present without pain (painless legs moving toes [4,5]. In a case report, it is reported that pain is not a requirement for PLMT [14]. It appears that it is an incomplete form of PLMT, where pain is lacking, a prominent feature PLMT. The diagnosis of painless variation of PLMT is based on clinical description. However, clinical examination, laboratory, neurophysiological and neuroradiology studies may fail to reveal any abnormalities [5]. None of the tests used currently used investigations of PLME (Painful Legs and Moving Extremity) are sensitive and specific [15]. Till now most of the mechanisms underlying PLME have been based on studies of single cases or small case series. However, several investigators have suggested that the complex type of muscle activities seen in these cases may originate in the central region [5], and their pathophysiology is poorly understood. It is believed that a dysfunctional mechanism controlling the sensory and motor afferents at the supramedullary (cortical) and spinal interneuron level occurs due to peripheral nerve injury, [16], or may be originating from spinal cord [17]. Here in this case, even if NCS showed lumbosacral radiculopathy, which may not be causing this painless movements, as it was painless and was present in both upper and lower limbs. The abnormal involuntary movement is unlikely to be hemichorea due to poorly controlled diabetes, as the brain MRI did not reveal any abnormality in the basal ganglia. Another alternative diagnosis could be atypical forms of RLS, which is a sensory dysfunction, where the patient moves his limbs in order to relieve the sensory discomfort. But in the case described here, the painless involuntary movements cause much discomfort to the patient, so that the patient tries to relieve by moving her limbs. In the case described, the

NCS was normal suggesting no sensory component is involved in this case. In this case the involuntary movements responded to gabapentin and clonazepam. It is reported that gabapentine may be useful in PLMT syndrome through peripheral and CNS effect, modulating an abnormal sensory processing in spinal cord [18]. Gabapentine is believed to enhance inhibitory input of GABA mediated pathways.

4. CONCLUSION

Since only a few cases have been described in literature, it is difficult to opine the treatment of choice in this painless moving legs and hands. In the above case described, it was seen that when combination of clonazepam with gabapentin were administered, the painless limbs and moving fingers and toes completely disappeared, indicating the effects are due to GABA mediated pathways. However, it requires further studies about the mechanism, and the possible line of management of this case and also whether it is a separate type of movement disorder or a variation of PLMT.

CONSENT

Written informed consent has been obtained from the patient for publication of this paper.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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